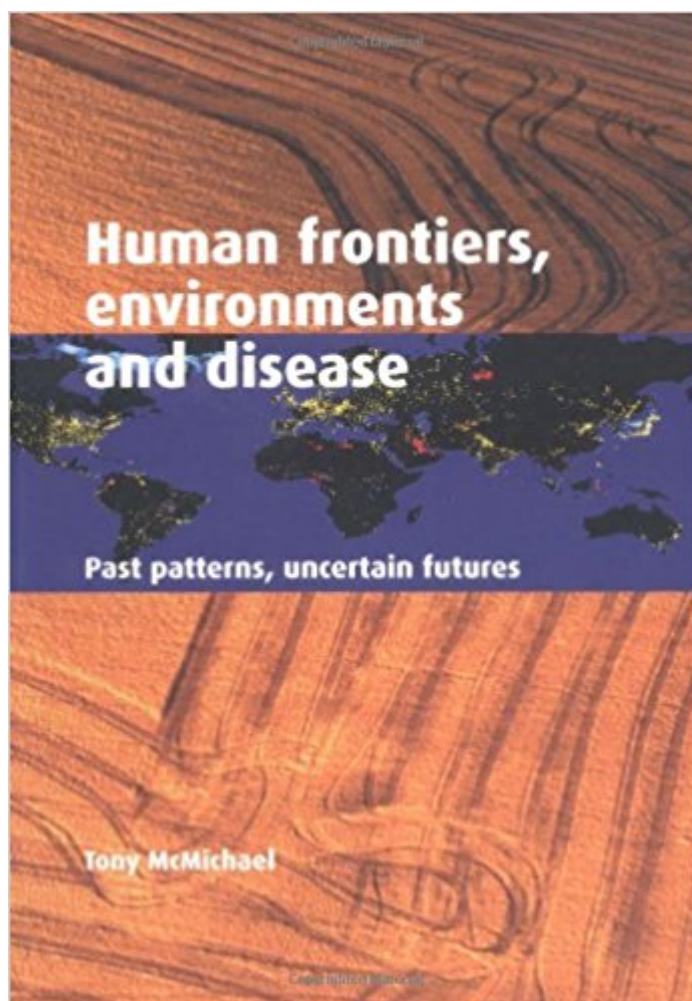


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# Human Frontiers, Environments And Disease: Past Patterns, Uncertain Futures



## Synopsis

Charting the relentless trajectory of humankind across time and geography, Tony McMichael highlights the changing survival patterns of our ancient ancestors, who roamed the African savannahs several million years ago, to today's populous, industrialized, and globalized world. McMichael explores the changes in human biology, culture, and surrounding environments that have influenced patterns of health and disease over the course of humankind's history, arguing that the health of populations is primarily a product of the interaction of human societies with the wider environment, its various ecosystems, and other life-support processes. Tony McMichael is professor of epidemiology, London School of Hygiene and Tropical Medicine. He has held positions in Australia, USA, and UK, and has taught widely in Asia, Africa, and Europe. He has advised WHO, UNEP, the World Bank and Intergovernmental Panel on Climate Change on public health issues. His previous book, *Planetary Overload* (Cambridge University Press, 1993) was a widely acclaimed and influential account of global environmental change and the health of the human species.

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## Customer Reviews

"...very valuable reading for advanced students, or anyone else interested in the place of humans in the world..." *Journal of the Royal Anthropological Society*"This book achieves an unusual and important synthesis of the large-scale evolutionary, social and environmental influences on human health and survival. This ecological perspective, highlighting the history of disease and wellness, the state of our epidemiological environment, and the general impacts of recent cultural trends on

well-being, is essential if we are to achieve a sustainable future." Paul R. Ehrlich, Bing Professor of Population Studies, Stanford University, and author of *Human Natures*"*Human Frontiers, Environments and Disease* is a big, beautiful, and infuriating book that must be read by anyone seriously concerned with the viability of our only planet." Devra Davis, *Lancet*"This impressive book by an eminent public health scientist explores our most important relationship: our interaction with the environment. Broad in scope, it is essential reading for all concerned with assuring future human health--and our very survival." Robert Beaglehole, Professor of Public Health, University of Auckland Senior Advisor, Health and Sustainable Development, World Health Organization"The style is relaxed but succinct: I have seldom encountered a text where the essential points about disease causation were given so pleasantly and effectively within a short paragraph." *British Journal of General Practice*"In this book Tony McMichael brings alive this fascinating dimension of history. Here is a book to make us think differently....it is a clear, lively, elegantly presented argument of wide scope in which unfamiliar issues are neatly put together. It is a tract for our times." *Financial Times*"Outstanding, intellectually stimulating, and with refreshing new ideas, it is a meticulously researched book, with a 36-page bibliography. It merits a prominent place on the bookshelf of policy-makers, researchers, and teachers alike." *Global Change and Human Health*"a big, beautiful, and infuriating book that must be read by anyone seriously concerned with the viability of our only planet...important work." *Lancet*"The British epidemiologist McMichael takes his readers on a sweeping but accessible excursion covering the relationship between people and diseases since the beginning of civilization." *Is Foreign Affairs*"...this book is innovative and important not only because of its subject matter, but also because of the way in which it is addressed. McMichael discusses the major public health issues of today by showing us how we got to where we are now, and synthesizes the large-scale evolutionary, social and environmental influences that have shaped human health over the last few millenia...outstanding..." *International Journal of Epidemiology*

This compelling account charts the relentless trajectory of humankind across time and geography, and its changing survival patterns, from several million years ago when our ancient ancestors roamed the African savannah to today's populous, industrialised, globalising world. This dynamic expansion of human frontiers--geographic, climatic, cultural and technological--has encountered frequent setbacks from disease, famine and dwindling resources. The central theme of the book encompasses the social and environmental transformations wrought by agrarianism, industrialisation, fertility control, social modernisation, urbanisation and consumerism and how this affects patterns of health and disease.

McMichael's synthesis is the evolutionary synthesis and he is ruthless in his rigour. People are humans ... are Homo sapiens ... are one of the primates ... one of the animals ... one of the planet's living species. By any objective criteria humans have reached plague proportions and our future is bleak. McMichael takes Darwin's theory of natural selection, with its three elements, variation, competition and differential reproductive success and extends Darwin's approach using the more recent ideas of self-organizing complexity and of emergent properties. He considers the way humans have diverged in the last 10,000 years from the pattern established over 5 million years of evolution. This diversion has (a) lead to many diseases and unhealthy conditions and (b) modified the local and global environment in ways which have clear health implications for the human species. I do not have space here to go through his description of the diseases and conditions, so will merely list some of them and refer you to the book for an illuminating, scientific discussion of their causes, why they have become more common over the past half century and their possible treatments. Auto-immune diseases, polio, childhood asthma and hay fever, inflammatory bowel diseases such as Crohn's disease and ulcerative colitis, insulin-dependent (childhood onset) diabetes, multiple sclerosis, rheumatoid arthritis, lactose intolerance, skin cancer. McMichael also deals with the contentious issue of genetically modified foods. This is one of the best parts of the book as it takes the non-specialist reader carefully through the underlying science and presents the pros and cons of GM. McMichael invokes the 'precautionary principle' to come down - at the present time - against GM, an unusual position for a trained scientist. His position is based solely on science, not on emotion, tradition, or any mystical notion of what is "natural". The book also deals with the pressures human population is putting on the survival of all the other species on the planet. Here he brings up to date the work of Joel Cohen's 1995 book (How Many People Can Earth Support) and uses the 'ecological footprint' methodology to consider the number of people the planet can (a) feed, (b) supply with fresh water, (c) supply with energy, (d) support without reducing biodiversity. His answers, of course, depend upon the consumption levels which are assumed for the population, but in almost all cases, these answers are less than the planet's present six billion people. How can this be? There are two reasons. First because of 'ecological deficit budgeting' or, in the catchy phrase of Tim Flannery, because Homo sapiens is a 'future eater'. (See Flannery's two books The Future Eaters, and The Eternal Frontier - check my review of the latter here at [.com](#).) Secondly because of the time lags which accompany environmental change. McMichael brings this home with the fact that, if we can halt the build-up of greenhouse gases by 2070, the world's oceans will continue to warm and expand for another thousand years! One of the key

questions for our time is: Can our opinion leaders and decision makers give such unfamiliar time frames their due weight? As a member of the International Panel on Climate Change, McMichael also has a useful presentation, explanation and discussion on global climate change. The recent fires in the US, freezing and floods in Europe and climatic records (extremes) have brought home to ordinary people, non-scientists, that something unusual is happening. This book explains why, explains how and looks into the future for the effects of climate change on human health. McMichael concludes that "It will be reasonable from here on to regard each extreme weather event as containing at least some human-induced component". The book addresses the issue of globalization. The author paints a picture of deregulation reducing labour and environmental controls and increasing disease and social disruption in both the West and in low-income countries. What of the future? McMichael considers far more than I can squeeze into this review, but an interesting observation concerns the importance of the way in which the tension between two evolutionarily-determined human mental attributes is played out. Humans have a long standing expertise at dealing with urgent crises, 'flight-or-fight'. But this tendency has got us to our present environmental predicament. The question is whether can we use our more recently acquired abilities for long-term planning, sophisticated scientific reasoning and information technology to rescue us from the short-termism of flight-or-fight. The book uses brilliantly conceived and very telling graphs which are powerful examples of a picture being worth a thousand words. Each repays careful study. Each chapter ends with a useful 2-3 page summary and conclusion. There are 36 pages of annotated bibliography, many references from 2000, even 2001. If you'd like a taste for the fast pace of the book and the author's scientific approach, I recommend his account of Lyme disease on page 117.

Good

This book turned out to be all that I expected: good condition, and revealing and fascinating content. It is definitely worthwhile.

This is a tour de force, a brilliant, densely packed account of human evolutionary biology and ecology, setting the progress of the human race and its civilizations and cultures in the context of shifting environmental, climatic, social, cultural and ecological forces over the lifetime of our species. Tony McMichael describes and explains how we have reached the present human situation, the interplay of our species with the plants and animals that supply our food, and the microbes that

often shorten our lives. In the short period since the industrial revolution we have made spectacular progress in every way imaginable, but now our own ingenuity and industries may threaten our very survival - we are at risk of endangering our life support systems to an extent that could harm them badly enough to raise questions about our own prospects for survival as a species. This is an important book for everyone who cares about life - our lives, and the lives of other species with which we are interdependent.

While the author does mention the issue of mental health in relationship to our wacked-out species within the planet's growing urban population, I think he misses an opportunity to consider the obvious that the human ecologist Paul Shepard covered in his book *NATURE AND MANDESS*: our species developed into what it is biologically and psychologically in the Pleistocene. When that 'world' ended thousands of years ago, our species--in the blink of eye evolutionarily speaking--was not equipped in its brain to deal with the changes. The birthrate, and humane methods of raising children changed over night as well. Shepard seems to argue that we literally went 'nuts' as a result (agriculture, wars, walled chaotic cities, shorter life spans of dubious quality during the rise of ag, psychotic leaders, strange other-worldly monotheistic religious-belief systems, George Bush..need I go on?) I bring up Shepard because this author is aware of his work. McMichael says on page 21: "We can thus understand, says Shepard, the inner human needs for contact with wilderness, with animal species, and with symbolic place. To depart from the conditions, the rhythms, and the interdependence of the natural world is both to stunt our own human essence and to risk damaging the environment's support systems." Here is the health/environment connection that McMichael only alludes to but which may end up being THE most critical: Our species--now almost completely devoid of ANY connection to a rapidly disappearing natural environment--, and which is now rapidly cramming itself into urban slums when it's not waging wars, (See Davis, *Planet of Slums*), has virtually gone crazy, will continue to get crazier, and because of such large-scale 'mental illness' if you will, has little hope of getting the 'treatment' Shepard called for in his book. The prescriptions and predictions in McMichael's book are no more or less than what one finds in other recent environmental books (i.e., will we use our brains and survive, or use our brains to kill ourselves?) Perhaps the question is more accurately: can a neurotic species like man ever regain its mental health in time to save a dying planet?

I have read this book twice - not because I found it difficult to read but because it contains so many layers of knowledge that you can think about once and again. What the book gave me was an

understanding of the current ecological global situation and its implications for health, but also many "cognitive tools" to increase my understanding of the science behind the facts.

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