BOOKS & ARTS

When wise words are not enough

Thomas Homer-Dixon argues that opinion-makers must demonstrate a better grasp of how societies rise and fall if they are to steer nations successfully through many of this century's major crises.

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The biggest threats to our existence are likely to be pandemics and wars, not asteroid hits or terrorism.

These are bewildering times. One moment the global economy is booming and stock markets are soaring; the next, trillions of dollars of wealth have vanished, and we are on the cusp of a global depression. Oil prices rocket upwards as leading oilmen talk of worldwide shortages, then they plummet amid a worldwide glut. The United States seems to be in terminal decline, written off by pundits as a has-been hegemon, only to receive a new lease of life, many perceive, with the election of an extraordinary leader.

In a world reeling from surprise, where once-in-a-lifetime events seem to happen every month, two things seem to be constant. The first is the inadequacy of expertise. Although the people we have anointed as experts might not admit it, they are as bewildered by the world's turbulence as the rest of us. They are also little better at predicting what is going to happen next. The second constant is a pervasive feeling of insecurity. The things we assume to be bedrock truths around which we can organize our lives — scientific theory, moral precepts, political institutions or perhaps the timeless rhythms of nature — seem to be increasingly under assault.

In two books that offer erudite assessments of the dangers facing humankind this century, Vaclav Smil and Chris Patten address these matters in sharply different ways. In *Global Catastrophes and Trends*, Smil, a Canadian scientist of prodigious productivity and extraordinary disciplinary breadth, basically says "get used to it". Many of the vital natural and social systems around us are so complex that deep uncertainty characterizes their behaviour, and predicting this behaviour is near impossible. Thankfully, many of the threats to our wellbeing highlighted by the media are exaggerated — often wildly so. Although there are reasons for concern about where humankind is going, we need to remember that insecurity is part of the human condition. Catastrophe is too, but it is less likely than we imagine. Overall, given the admirable human capacity to adapt and change, the human prospect is far brighter than many assume.

Global Catastrophes and Trends: The Next Fifty Years
by Vaclav Smil
MIT Press: 2008. 320 pp. $29.95, £19.95

What Next? Surviving the Twenty-First Century
by Chris Patten
Allen Lane: 2008. 496 pp. £25

Patten, the last governor of Hong Kong, a cabinet minister in Margaret Thatcher's UK government and currently the co-chair of the International Crisis Group, a conflict-analysis agency, is less sanguine about the formidable challenges we face — including climate change, resource depletion, global criminality, widening gaps in wealth and possible nuclear terrorism. But in his book *What Next?*, he shares Smil's optimism about humankind's capacity to cope. With scientific practices and the reasoning brain that evolution has given us, we can understand the basic contours of our challenges, if not predict exactly how they will shape our future. With freedom, democracy, the rule of law and strong, competent states — all legacies of the brutal process of past European state building — we have the social and institutional architecture needed to find and implement solutions. These powerful assets allow us to choose between better and worse futures. The open question is whether we have the will to choose correctly.

Both books are grounded in the mastery of a staggering amount of knowledge — in Smil's case, largely technical and scientific; in Patten's, more social and political. Each is steeped in the wisdom that comes from decades of experience and reflection. And each weaves argument and evidence around a clear structure of analysis.

Yet both books ultimately disappoint, for reasons that say less about the books themselves than about the largely unrecognized gravity of humankind's current predicament.

Smil's analysis is guided by a clear time horizon and a simple distinction. What, he asks, are the factors that could plausibly and fundamentally affect the human condition in the next five decades? He distinguishes between catastrophes and trends — between "fatal discontinuities" that could cause a sudden turn for the worse in the human prospect, and long-term incremental change that is barely noticed year-on-year but that could, over time, alter deep characteristics of our world.

Smil's discontinuities include large asteroid impacts, mega-eruptions of volcanoes, influenza pandemics, transformational wars and terrorist attacks. After assessing the best evidence available, he concludes that the risks of pandemics and major wars are large enough — approaching 100% for a war that will kill five million people sometime in the next 50 years — to justify significant investment in prevention. We should worry much less about asteroids and volcanoes, and current evidence does not justify our preoccupation with terrorism. He is indefensibly fatalistic about nuclear terrorism. Prevention, he says, cannot thwart all attacks, deterrence does not work against

zealots and we cannot effectively prepare for an attack in advance. But in reality, much can be done to prevent a nuclear strike in a major city; most importantly, nations can work harder to secure and ultimately destroy the world's stockpiles of highly enriched uranium.

As for unfolding trends, Smil includes in his list humankind's transition away from fossil fuels as a main energy source, shifting power relations among major nations, widening economic inequalities, climate change, perturbations of the global nitrogen cycle and antibiotic resistance. These trends do not sit together easily — for example, some implicate Earth's natural systems whereas others are mostly the product of human social and economic interactions — so Smil's analysis often comes across as a rather indigestible series of apples and oranges. Within the same chapter, for instance, he jumps from a treatment of the intrinsic power-density limits of renewable energy to an assessment of the geopolitics of world order.

Of greater concern is Smil's tendency to slip into polemic. His discussions of constraints on conventional oil supply and of climate change are selective and sometimes simply wrong. For example, he dismisses the possibility of abrupt climate shifts, based on a muddled interpretation of the science of millennial climate events recorded in ice cores (known as Dansgaard–Oeschger oscillations); he downplays recent research that strongly suggests sea levels will rise much faster than projected by the Intergovernmental Panel on Climate Change; and he wrongly suggests that the Gulf Stream is not driven partly by thermohaline circulation and that it does not contribute to Europe's warmth. He also repeats, as an illustration of how past predictions can be wildly wrong, the myth that scientists largely supported the early 1970s theory that global cooling was imminent.

Patten cannot claim Smil's technical expertise, but his book is more balanced. He acknowledges his biases and the limits of his knowledge, and gives fair consideration to contrary views. Some of his passages, especially those on China and India, are wonderfully rich. And his prescriptions are simultaneously deeply humane and pragmatically bounded by a long familiarity with the ways of the world — no mean feat.

Yet too often *What Next?* seems laboriously descriptive, absorbed in details of how we got to where we are, rather than focusing on what might happen later this century. The book's time horizon is only a few decades into the future, so its subtitle is misleading. And one is left with the disquieting sense that the state-based apparatus that Patten calls on to save humankind is not remotely up to the task. Patten is right to admire the power and potential of Western institutions, but the challenges we now face, such as climate change, are decidedly different from those that such institutions evolved to address.

This brings us to why these books ultimately disappoint: in each case the analysis, although clearly structured, is not guided by an underlying theory of societal crisis. True, such a theory would not give the authors the power to predict the future with any precision, but it would help them to identify which combinations of factors might lead humankind over the precipice, and what we might do to avoid such a fate.

Recent research has highlighted fundamental causes of societal crisis. These include the convergence of interacting stresses that overloads the coping capacity of multiple components of society, especially the state; rising social and technical complexity that generates diminishing marginal societal returns; the rapidly escalating cost of getting energy; high connectivity among people, institutions and technologies; and the declining redundancy and resilience of crucial systems.

One can make a credible argument, grounded in just the kind of evidence Smil and Patten use, that all of the above factors are now acting powerfully in humankind's tightly coupled, planetary, socio-ecological system. In the absence of a serviceable theory of societal crisis, in the end both books present little more than a laundry list of things we should worry about. For our children's and grandchildren's sake, we need much more, and fast. ■

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Universe in a box

Joseph Cornell and Astronomy: A Case for the Stars
by Kirsten Hoving
Princeton University Press: 2008.
336 pp. $49.50, £35

Sculptor Joseph Cornell made boxes. Intricate, three-dimensional montages of photographs, sky maps and paintings, neatly packed into wooden cases full of bric-à-brac: eggs, pipes, glasses, shells, stamps, chains and whatever objects fitted with his internal logic. And, even though he was considered one of the American exponents of surrealism, that epitome of irrationality, there was a logic. In a mesmerizing, if mildly flawed, attempt to immerse us in Cornell's crafted universes, art historian Kirsten Hoving uses the artist's fascination with astronomy to tease out the logic that underlies his work.

Cornell's life was complicated. Although he was from an affluent background, he had to support his younger brother who suffered from cerebral palsy, and until the late 1940s worked variously as a salesman, textile designer and in a plant nursery. He was a staunch believer in the teachings of Mary Baker Eddy, the founder of Christian Science, and never forged a long-lasting relationship with a companion, spending most of his life in the same house in Utopia Parkway, a working-class neighbourhood of Flushing in Queens, New York. Yet, at the same time, his boxes and experimental films were admired in the high-octane art scene of New York, where he took part in the first surrealist exhibition at the Museum of Modern Art. Marcel Duchamp introduced him into the orbit of Peggy Guggenheim and her coterie, and from the early 1950s onwards, he was able to make a living through his art.

Joseph Cornell's work mirrors the 1960s US cultural fascination with astronomy.

E. OWEN/ART RESOURCE/JOSEPH AND ROBERT CORNELL MEM. FOUND./DACS/VAGA

Hoving does something ambitious and difficult: she identifies one important thread of his creative process and uses it to help us understand Cornell's art. Astronomy clearly played an important part in his work and life. His boxes, films and the countless dossiers that he stored at his house were littered with star maps, references to Albert Einstein and Arthur Stanley Eddington, solar eclipses and his fascination with space travel. Hoving uses these obsessions to relate a body of work that spans many decades. Albeit an effective choice, astronomy is only