

Book reviews: Global Catastrophes and Trends: The Next Fifty Years

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All Hazards

Vaclav Smil, MIT Press, Cambridge, MA,

<http://www.mitpress.edu/>

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The future, Vaclav Smil helpfully reminds us, is hard to predict. In fact, even predicting the past can be tough. Estimates of the frequency of near Earth objects – asteroids and such that might collide with the earth – vary by as much as an order of magnitude, he notes. The threat from mega-volcanoes also can be difficult to interpolate from past records. The Yellowstone caldera has exploded catastrophically three times in the last 2.1 million years, at fairly regular intervals.

“There are three ways to interpret this sequence”, Smil writes. “First, it has too few members to allow for any conclusions. Second, the interval between the Yellowstone hotspot eruptions has actually decreased from about 800,000 years to 660,000 years; a repeat of the last interval leaves only 20,000 years before the next event is due. Third, the three events had an average interval of 730,000 years, and hence there are still some 90,000 years to go before the most likely repeat.”

Smil does not argue we should ignore risks, but rather that we should assess them properly and be aware that we seldom, if ever, incorporate all the factors that influence events. The possibility of a million deaths from influenza-along with a 100,000 from tsunamis and volcanoes – in the first half of the twentieth century is a near certainty, he states.

On the flip side, there is a 50 percent chance of one person dying from an asteroid collision. “In affluent countries one person out of a million dies every hour”, he writes. But “most people tolerate activities that temporarily increase the overall risk of dying by 50 percent or that may even double it”. Driving a car, for instance, adds a 50 percent risk of death to the baseline figure, and smoking nearly doubles it. Terrorism adds only a very slight risk – one-thirtieth of the risk from driving.

While he argues that there is little we can do about low probability natural catastrophes like mega-eruptions or mega-tsunamis, “we can do much to be better prepared for a number of anticipated catastrophes, and we can take many steps to moderate negative impacts of some of the most worrisome trends”.

Among these preparations, Smil includes a program to deflect near Earth objects, planning for pandemic influenza, protection of biodiversity, and lowering carbon dioxide emissions. “We should act incrementally as prudent risk minimizers and pursue any effective no-regrets options.”