In *Catastrophe: Risk and Response*, Richard Posner makes the case that the risk of global catastrophe is higher than most people think, and he analyzes the reasons why the U.S. under-prepares for natural, technological, and terrorist catastrophe. Attempts to mitigate the risk of catastrophe will incur heavy costs, whether economic (as in proposals to reduce the effects of climate change) or civic (as in policing reforms that infringe on civil liberties). How might the U.S. and the world weigh the extraordinary costs and uncertain future benefits of avoiding catastrophe? Posner advocates economic tools, especially cost-benefit analysis, as a guide in determining which catastrophes are worth protecting against and which are so unlikely to happen or so trivial that they are not worth the cost of defense.

*Catastrophe* is a central work in the burgeoning literature on how to deal with rare but high-consequence events. Long the domain of engineers, statisticians, and the reinsurance industry, the unique properties of rare, high-impact events drew attention after the attacks of September 11 and Hurricane Katrina. Nassim Taleb's recent bestseller, *The Black Swan*, documents the unpredictable nature of rare, high-consequence events. He shows how traditional “Gaussian” statistics use past events to predict future ones according to the properties of the bell curve. With rare events, however, we do not know the underlying properties that define the curve. Mapping these non-linear relationships proves difficult.

Recent work in behavioral economics shows that people have trouble calculating risks. They often wildly over- or under-estimate numbers, but rarely provide a large enough margin of error. When social scientists bother to check the predictions of “experts,” of when and where international political events such as revolutions and wars are to take place, the experts fare little better than chance.
We know that disasters will occur, just not precisely when. Scholars from a variety of disciplines have documented the myriad reasons people fail to take steps to reduce the damage caused by inevitable disasters. Sociologists focus on macro-level trends such as urbanization that lead to high concentrations of people and resources attractive to terrorists and vulnerable to accident and disaster. Another line of inquiry examines the components of “social vulnerability” in race, class, and gender. Disasters affect different social groups in different ways, and identifying patterns of how particular groups respond to disasters can help mitigate consequences. The elderly, for example, may lack social networks to help them evacuate.

Political scientists, as a rule, analyze the political incentives behind intervention in disaster policy. The system of presidential disaster declarations suits the federal nature of U.S. government by providing a role for governors in the request process, but it also provides few incentives for presidents to limit disaster spending. Other studies examine how entrepreneurial bureaucracies such as FEMA attempt to find a mission and build capacities to meet that mission, sometimes running into conflict with the short-term goals of politicians.

Posner’s work, however, descends from the macro level of social and institutional theory to the individual, drawing on the literature of economics to understand how individuals think about the risk of rare events. Catastrophe locates the source of disaster risk in individual behavior such as living in floodplains, not purchasing insurance, or not taking the possibility of technological accidents seriously. Posner’s contribution is to synthesize the literature in economics and cognitive psychology to explain the obstacles to efficient risk calculation imposed by the human mind.

Most people have difficulty thinking about abstract probabilities as opposed to events they have observed. Human mental capacity is limited, and startling events such as the attacks of September 11 trigger our attention. But evaluating risk requires paying attention to what we do not see. There has been surprisingly little attention in the popular media given to pandemic flu, even though influenza killed approximately twenty million people in 1918-1919. The disease has no cure, and vaccines are difficult to produce because of the mutability of the virus. People from all walks of life pay greater attention to issues in recent memory and tend to give greater weight to confirmatory evidence; the cumulative effect is to under-prepare for catastrophe.

Many Threats

Posner makes a persuasive case that the risk of global catastrophe is growing. Some critics emphasize the increase in the perception of risk in industrialized Western nations, but Posner explains why objective risk is on the rise. New technologies such as nuclear power and high-energy physics are potentially more destructive than technologies of the industrial era. Urbanization concentrates targets and terrorist groups have more destructive weapons and a greater global reach than ever before. To some degree, these risks compound. Terrorists can mimic natural disasters by, for example, destroying dams to cause flooding. Global warming contributes to the loss of biodiversity. The likelihood of these risks is so slight that people have trouble taking them seriously, unless one of them has been realized in recent memory. Americans worry about terrorist attacks, and the U.S. government devotes millions to preventing and protecting against terrorism, even thought the risk is quite small.

While some critics have argued that the risk of terrorism has been vastly overstated, Posner acknowledges that the threat is serious. He, however, wants to put it in perspective by comparing terrorism to a host of other risks. Some of his suggestions seem to come from a science fiction movie. For example, he worries that high energy physics experiments could trigger a “strangelet scenario” in which a chain reaction condenses the earth into a tiny ball.

The book’s wide range of scenarios, from global terrorism to global warming and asteroid collision, suggest what a truly all hazards approach might mean. The Department of Homeland Security (DHS) attempts to reconcile preparation for natural disasters and terrorist attacks in “all hazards” plans, but these represent only a narrow range of catastrophic threats, or dangers, that could lead to massive loss of life and property in a concentrated period of time.

One possibility for the future, undeveloped in this book, is for DHS to morph into a department of risk assessment in which it analyzes a range of threats and devotes resources to reducing vulnerabilities. While Posner usefully identifies risks that threaten the American way of life, he neglects some disasters that are costly, because of their frequency, but are not catastrophic. Floods cause billions in damage each year, and the total cost over time could reach that of a catastrophic disaster, depending on the threshold. A department of risk assessment might address frequent small but cumulatively costly disasters as well as rare but catastrophic ones.

Posner’s focus on catastrophic disasters highlights their global nature. A “strangelet” scenario, asteroid collision, or global warming would harm, and perhaps extinguish, the entire planet. Remedies for catastrophic disasters require global coordination because one country’s vulnerability increases the vulnerability of every other country. The “global war on terror” adopts some of this logic, and homeland security experts advocate globalizing security by locating port facilities abroad and increasing cooperation in screening for dangerous materials overseas.
Costs and Benefits in an Uncertain World

Recognizing the most serious risks is one problem, but figuring out what to do about them is another. Airport baggage screeners and law enforcement fusion centers may interdict terrorist attempts, but at a cost. How much is enough? Global warming provides a hard case for determining how much to spend on prevention and mitigation because the threat is highly uncertain. Posner’s analysis begins with a sober recognition of the problem. “No species has so stressed the environment as modern human beings are doing, and at an accelerating pace as China, India, Brazil, and other large, poor countries modernize rapidly,” he writes. “The human impact on the climactic equilibrium is inherently unpredictable.” (p. 50) Scientific experts who publish in peer-reviewed journals have reached a near-consensus that the climate is growing hotter, which exacerbates other threats such as loss of species and political instability. Posner favors a conservative approach that reduces the human impact on the environment, but cautions that the costs of intervention should not outweigh the benefits. In other words, it may be easier to accept the inevitability of climate change but slow its effects by taxing emissions to reduce pollution and funding new agricultural programs for countries in which climate change disrupts the food supply. Whether it is better to address the causes of global warming or the effects, Siberia will not become the breadbasket for the world without a high cost.

Cost-benefit analysis provides more accurate predictions of doomsday scenarios than science fiction, and it can provide helpful guidelines for decision-making because, as Posner shows, human intuition does not produce optimal results. But in his zeal for applying cost-benefit analysis, Posner understates the uncertainty found in the world. We know that catastrophic bioterrorism and global warming pose threats, but we do not know their likelihood. We can calculate the consequences of, for example, a nuclear explosion but we cannot fully calculate risk because we do not know the underlying probabilities of a terrorist attack. We cannot even predict where and when an earthquake will strike, or how many will strike the U.S. in a single year and of what magnitude. The earth’s physical processes remain mysterious and contingent, and predicting the behavior of human-caused disasters is even more challenging.

Estimating complex processes such as global warming, loss of species, and the “strangelet scenario” that are affected by the development of new technology is even more complicated. Scientific progress could either mitigate risk by creating clean energy or exacerbate risk by producing new technology with catastrophic possibilities. The best theories of invention portray it as a semi-random process similar to natural selection. 13 There is simply no way to predict the future impact of technology on the risk of a particular disaster with certainty. Faced with uncertainty, Posner recommends a conservative approach. He proposes a regulatory body to screen scientists, especially foreign ones, and to review potentially dangerous technologies. He also recommends more science education so that citizens will have the acumen and the interest to question whether research and development is worth the cost, rather than allowing the scientific establishment to proceed on its own.

With Catastrophe, Posner brings his often witty, sometimes counterintuitive economic rationality to bear on thinking about high consequence rare events and the costs of humans’ unprecedented impact on the natural environment. Posner is the author of more than twenty books and, according to one list, the seventieth most frequently cited public intellectual. (Granted, he compiled the list).

As with rare events, what readers do not get in Catastrophe may be as important as what they are offered. The book shows what it might mean to think about allocating resources among a wide variety of catastrophic risks, a truly all hazards approach, but it neglects the institutional politics that have bedeviled homeland security. DHS has struggled to define what it should protect, whether government sites, private buildings, or networks that perform essential functions such as power generation and transportation. In addition, the department lacks a single approach to what it should protect against, and the question of what homeland security really is remains open. FEMA prepares for natural disasters (though most capacities rest with state and localities) while the Secret Service, for example, worries about crime and terrorist acts. A host of other potential catastrophes are outside the mission of DHS.

If homeland security is to last as a concept, it will have to include more than preparation for the last terrorist attack. Posner’s approach to cost-benefit analysis provides a starting point for thinking about how to allocate resources among threats, a task that does not come easily (or naturally, if we accept Posner’s premises borrowed from evolutionary biology). To go further, DHS will have to institutionalize risk assessment and provide clear guidance to states, localities, private industry, and even politicians about what risks are worth pursuing and how. Cost-benefit analysis is not a self-enforcing process, instead, it is a tool that helps discipline the process of allocating resources. What DHS will have to do is manage that discipline, not replace it.
preparing for and how. Cost-benefit analysis is not a self-enforcing process. Instead, it is a tool that can help discipline the unavoidably messy process of deciding which risks to prepare for.

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Views: 582
Catastrophe has 57 ratings and 7 reviews. Nick said: As someone who works in an area focused on improbable risks (though not nearly as dire as those discussed in the book), I found it insightful and thought-provoking. Goodreads helps you keep track of books you want to read. Start by marking “Catastrophe: Risk and Response“ as Want to Read: Want to Read saving…. Want to Read. Currently Reading. Read. Other editions. Enlarge cover. Richard Posner thinks we face risks of worldwide catastrophe -- and the only answer is bigger government. J. H. Huebert disagrees in this review of Posner's book, Catastrophe: Risk and Response. Originally published in the Journal of Libertarian Studies. J. H. Huebert disagrees in this review of Posner's book, Catastrophe: Risk and Response. Full description. Save. Catastrophe: Risk and Response, by Richard Posner. RICHARD POSNER IS WIDELY described as a libertarian,1 but as many of this journal's readers likely know, this is not true.2 And the latest of his many books, Catastrophe: Risk and Response, may be his most statist work yet, for it wants nothing more than to scare you into accepting bigger, ever-more-powerful government. In Catastrophe: Risk and Response, Richard Posner makes the case that the risk of global catastrophe is higher than most people think, and he analyzes the reasons why the U.S. under-prepares for natural, technological, and terrorist catastrophe. Attempts to mitigate the risk of catastrophe will incur heavy costs, whether economic (as in proposals to reduce the effects of climate change) or civic (as in policing reforms that infringe on civil liberties). How might the U.S. and the world weigh the extraordinary costs and uncertain future benefits of avoiding catastrophe?