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# *Challenges of Uncertainty: An Introduction*

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The collapse of communism, the rapid emergence of China and India as major economic powers, the September 11 attacks, the appearance of relatively new diseases like HIV/AIDS and H5N1 bird flu, Hurricane Katrina—the past decade and a half has demonstrated that nothing is as certain as uncertainty in global politics. As the famous scatological bumper sticker suggests, bad things happen. But there are benign surprises as well, and these, no less than catastrophic events, challenge society's capacity to understand, to adapt, and to lock in good fortune.

Anticipating and dealing with what were thought to have been very low-probability events have clearly become central challenges for policymakers in public and private sectors alike all over the world. This book, sponsored by *The American Interest* magazine, addresses those challenges. The magazine's first annual event, held in Washington, D.C., in May 2006, brought together analysts, practitioners, policymakers, and unconventional thinkers from a variety of backgrounds and disciplines. The magazine assembled those who think about discrete uncertainties and who also have considered the very nature of uncertainty itself. The distinction may seem a minor one, but it is not. Many people, from intelligence analysts to investment bankers to corporate treasurers, are paid to think about discrete futures in their areas of professional responsibility. But far fewer people have ever tried to understand *why* the future is inherently difficult to anticipate, and how to mitigate our blindness

to its vicissitudes in a more systematic way than societies and governments have been able to do heretofore.

The task is a complex one. Those who deal professionally with global politics, foreign policy, and national security affairs have particular biases when it comes to thinking about the future. Those biases generate a perceptual incentive structure that throws off their general capacity for accurate prediction. Such analysts, after all, are seldom rewarded for predicting continuity or the sudden emergence of good news, but failure to predict bad news can be a career-ending mistake. No one wants to be in the position of Admiral Husband Kimmel, the commander of the U.S. Pacific Fleet, who was on duty the day of the Japanese attack on Pearl Harbor. Admiral Kimmel's code-breakers had deciphered the Japanese "winds" code, but he, the principal consumer of that intelligence, nonetheless failed to anticipate that the actual blow would land on the Pacific Fleet headquarters. The day that would live in ignominy well described the resting place of Admiral Kimmel's reputation for all time.

By contrast, no one in the U.S. intelligence community was cashiered for failing to predict that the Berlin Wall would come down in November 1989, though fail to predict it they did. This asymmetry in incentives leads the vast majority of those who work on national security issues to resort routinely to worst-case analysis as a means of covering themselves in case bad things happen on or just beyond their watch.

Investment bankers and corporations, in contrast, have much more balanced incentives to think about the future. For them, a failure to anticipate an opportunity can have very costly consequences—indeed, upside potential is often greater than downside, since one can only lose what one owns in an unleveraged situation. Businessmen may even be guilty of laboring under incentive structures that are biased toward excessive optimism.

The bias against optimism in the governmental intelligence world was nowhere more evident than in the estimates made of Iraqi weapons of mass destruction (WMD) before the 2003 Iraq invasion. After the entry of United Nations inspectors into Iraq in the wake of the 1991 Gulf War, the intelligence community found itself in a Husband Kimmel–type situation. Iraq was far closer to a nuclear capability than anyone outside of the Iraqi elite had realized before the 1991 Gulf War. Everyone involved was under enormous psychological pressure not to be duped again, and it was for that reason that everyone, from UN weapons inspectors to the U.S. intelligence community to their French and Russian counterparts, assumed that Saddam Hussein had more capabilities than the inspections were able to uncover. After the 2003 invasion

the world learned that the regime was incompetent, corrupt, and compartmentalized to the point where many senior Iraqi officials (including, at times, Saddam himself) believed their country possessed WMD capabilities that did not in fact exist. Before the invasion, though, it would have taken a brave (or foolhardy) intelligence analyst to aggressively downplay the danger represented by Iraq's WMD programs. One who did, Scott Ritter, had his motives severely impugned.

It is, of course, not possible to anticipate all the possible low-probability events that may litter world history in coming months and years. And even if one could anticipate many different futures, it would be impossible to hedge against all of them. Hedging is usually an expensive strategy in which high opportunity costs forsaken have to be weighed against other alternatives. So how does one deal practically with the problem of being blindsided?

This volume is organized into five sections. The first, of which this chapter is a part, introduces the book and examines the fact that surprise is, almost by definition, a psychological problem. Richard Posner, author of *Catastrophe*, observes, for example, that even though one can show that it would be cost-effective to hedge against a low-probability event like an asteroid strike, policymakers and the politicians who hire them are unwilling to pay the cost because they simply cannot imagine such a contingency becoming real.[1] It often takes a Hollywood movie or a similar event occurring in a different country to enable people to visualize a contingency and thus to act on it.

Important institutional constraints, moreover, make it difficult to act even when some people can and do accurately anticipate a low-probability, high-impact contingency. One might call this a form of "socio-surprise" characteristic of collective psychologies. Hurricane Katrina, for example, was one of the most fully predictable and scenario-tested natural disasters in American history, but that fact still did not lead to appropriate preparatory actions or adequate crisis responses on the part of responsible officials at the local, state, or federal levels.

The following section, "Cases: Looking Back," looks more closely at some historical examples of surprise—upside as well as downside—and asks why the social and economic impacts of emergent technologies and events like the collapse of the former Soviet Union and the 1997–98 Asian financial crisis were not anticipated. David Landes, Bruce Berkowitz, and David Hale draw on their knowledge of history and policy to pinpoint those institutional, and not just personal, failures that prevented policymakers and others from properly anticipating major events of the time.

The third section discusses potential future cases of surprise. William Bonvillian, director of MIT's Washington office, suggests ways to set up institutions so that they can deliberately create surprises—positive surprises—in this case for dealing with energy technology and policy issues. Based on the connected-science model that led to applied scientific advances during World War II and thereafter to the establishment and flourishing of DARPA (Defense Advanced Research Projects Agency), Dr. Bonvillian teases out the essence of effective innovation systems. He then applies this essence to what a DARPA-like innovation-generating agency would look like if applied to energy technology. The section also includes chapters by Gal Luft and Anne Korin on other aspects of energy policy, and by Scott Barrett on the uncertainties and dangers concerning new, potentially global-scale diseases.

For reasons rehearsed by Richard Posner, it is clear that psychological preparedness for low-probability events—even ones generated on purpose—is both extremely important, and extremely difficult to achieve. The next section, "Forecasting," tackles this problem.

It is not possible to anticipate all possible futures or to hedge against even a small proportion of them. The incentives to do so are not always present either. After all, politicians need to get reelected in the near term and therefore seldom have the incentive to worry about costs that will be incurred after they have departed the stage. Yet there are nonetheless systematic ways of looking at the future. One is through traditional cost-benefit analysis of the sort Posner outlines, but with proper discounting of future costs and opportunities. Another way of approaching the problem is through scenario methodology. This section thus begins with an essay by Peter Schwartz and Doug Randall of Global Business Network.

Peter Schwartz, whose career started in Royal Dutch/Shell's planning division, has built a business model and career around scenario planning. He observed many years ago that if one proceeded on the basis of a straightforward rational choice model in which one thought through different futures and assigned probability weights to them, senior decisionmakers would simply stop thinking about the low-probability ones. The chief problem is to overcome the psychological resistance to thinking about low-probability futures; the company he created, Global Business Network, has engaged in scenario planning that deliberately ignores probabilities to do precisely that. The focus, Schwartz and Randall argue, needs to be on the decisionmakers themselves and on the institutional constraints they face that allow them to

avoid thinking creatively about the future. In this volume, they reflect on the experience of scenario planning over the past two decades.

Another way of thinking systematically is to select hedges, as Robert Lempert recommends in his essay, that are robust over the largest number of possible futures. Like Schwartz and Randall, he is interested in how scenario methodologies can help policymakers find the proper balance between boldness and care in their planning functions.

Technological change has driven much economic and political change. No wonder, then, that technological forecasting has become a staple of our world. And yet even with skillful cost-benefit analysis and scenario techniques, technological forecasters continue to get most things wrong, failing to anticipate major trends and overestimating the importance of the "latest great thing." Could this be because political and economic change also drives technological change, that while technologists are reading the tea leaves from left to right, reality is proceeding from right to left? Why technology forecasting is so poor and why it will probably continue to be poor is the subject of the essay by Mitchell Waldrop, who uses innovation in information technology as his base example to explain why forecasting is so difficult to get right.

The Blindside conference took to heart the very nature of the subject, which calls attention to the cognitive challenges of dealing with low-probability events and so put a premium on getting beyond the usual solipsistic habits of academe. As the program itself featured a debate and two discussions-in-the-round, so those events are represented in this book. The final section, "What Could Be," begins with an edited transcript of a debate between James Kurth of Swarthmore College and Gregg Easterbrook of the Brookings Institution on what may fairly be called the philosophy of forecasting. Kurth uses his wide-ranging intellect to creatively join developments in the geopolitical and spiritual realms and spin out a gloomy prognosis for a declining West. Easterbrook, drawing on his book *The Progress Paradox*, points out that those who look to the facts, rather than to their fears and instincts, will find that the world has been getting better by any number of measures and is likely to continue doing so.[2]

The second and third chapters of the section feature discussions by members of *The American Interest*'s editorial board, dealing in turn with international and American scenarios for low-probability, high-impact events to come. Both the debate and the two discussions evoked novel observations that no one participant would likely have hit upon alone.

There is no easy or obvious methodology that will prevent us from being blindsided in the future. It is important, however, to understand the specific obstacles, both psychological and institutional, that prevent us from first seeing the future clearly and then acting on our insights in a responsible way. The essays in this volume lay out the conceptual problem of anticipating unexpected events, provide glimpses of different possible futures across a range of regions and issues, and may even offer up some creatively practical advice about how to plan for those futures. It is to this kind of creative thinking that *The American Interest* is dedicated.