Making sense of a complex world and predicting its future

Mindware. Tools for Smart Thinking. By Richard E. Nisbett. *320 pages. Farrar, Straus & Giroux. $27.*

Superforecasting. The Art and Science of Prediction. By Philip E. Tetlock and Dan Gardner. *340 pages. Crown Publishers. $28.*

BY LEONARD MLODINOW

A little after midnight, while writing this review, I took a break to get some beer from my local supermarket. As I stood in line the lights suddenly dimmed throughout the store. I must have looked puzzled. "We do that because less people come in this late," the

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clerk explained. "There are fewer customers, so we need less light?" I asked. "Correct," he said. His non sequitur had me leaving the store fortified with both a six-pack and the reinforced conviction that books on how to think should be required reading in high schools across the country. "Mindware: Tools for Smart Thinking," by the psychologist Richard E. Nisbett, and "Superforecasting: The Art and Science of Prediction," by the psychologist Philip E. Tetlock and the journalist Dan Gardner, are two such books.

The six sections of "Mindware" offer a variety of perspectives on how we think: the role of the unconscious in our judgments and decisions; the lessons of behavioral economics; the principles of probability and statistics; recommendations for how to test your ideas; and two sections on reasoning and the nature of knowledge.

Mr. Nisbett is famous for his ground-breaking work in several areas of psychology; Malcolm Gladwell called him "the most influential thinker in my life." And so a book from Mr. Nisbett on this important subject is bound to be met with high expectations.

My verdict is mixed. If you are looking for a survey of the topics covered in the book's six sections, this is a good one. You'll learn about our overzealousness to see patterns, our hindsight bias, our loss aversion, the illusions of randomness and the importance of the scientific method, all in under 300 pages of text. But there isn't much in "Mindware" that is new, and if you've read some of the many recent books on the unconscious, randomness, decision making and pop economics, then the material covered here will be familiar to you.

Mr. Nisbett writes clearly, and he takes his time with difficult concepts ranging from multiple regression (which answers the question, Given many variables that contribute to some outcome, what is the effect of each?) to dialectical reasoning (a method of argument for resolving opposing views in order to establish truth). But the dry tone of the book, along with Mr. Nisbett's practice of telling us what he is going to say and reiterating what he has just said, gives "Mindware" a textbook feel.

Where "Mindware" addresses the issue of making sense of a complex world from many angles, "Superforecasting" focuses on one issue: how we form theories of what will happen in the future. "Superforecasting" is a sequel of sorts to Mr. Tetlock's 2005 book "Expert Political Judgment," in which he analyzed 82,361 predictions made by

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284 experts in fields like political science, economics and journalism. He found that about 15 percent of events they claimed had little or no chance of happening did in fact happen, while about 27 percent of those labeled sure things didn't. Mr. Tetlock concluded that the experts did little better than a "dart-throwing chimp."

The primate metaphor resurfaces in this new book. The authors single out the columnist Thomas Friedman of The New York Times for being an "exasperatingly evasive" forecaster, and they point to the inaccuracy of financial pundits at CNBC, whose performance prompted Jon Stewart to remark, "If I'd only followed CNBC's advice, I'd have a
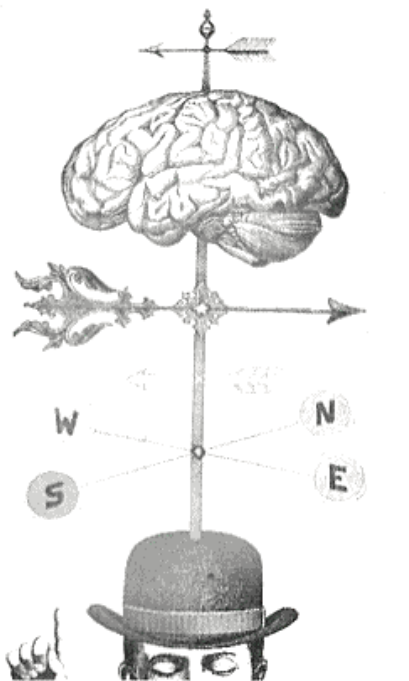
> "If I'd followed CNBC's advice, I'd have a million dollars today — provided I'd started with a hundred million dollars."

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But unlike "Mindware," most of the material in "Superforecasting" is new, and includes a compendium of best practices for prediction. The book describes the findings of the Good Judgment Project, an effort started by Mr. Tetlock and his collaborator (and wife), Barbara Mellers, in 2011, which was financed by an arm of the American intelligence community.

National security agencies have an obvious interest in Mr. Tetlock's project. By one estimate, the United States has 20,000 intelligence analysts working full time to assess issues like the probability of an Israeli sneak attack on Iran in the next month, or the departure of Greece from the eurozone by the end of the year. That is nearly four times the number of physics faculty at American research universities. And so money spent on improving results must have seemed like a good investment.

It was. The Good Judgment Project used the Internet to recruit 2,800 volunteers, ordinary people with an interest in current affairs — a retired computer programmer, a social services worker, a homemaker. Over four years, the researchers asked them to employ public news and information sources to estimate the probability that various events would occur, posing nearly 500 questions of the sort intelligence analysts must answer every day. The volunteers were also asked to reaffirm or adjust those probabilities daily, until a question "expired" at a pre-announced closing date.

Some of the volunteers performed strikingly better than the pack. Mr. Tetlock and Ms. Mellers studied their strategies, and what they learned about the thinking and methodology of these "superforecasters" is the heart of what is presented in the book.

The central lessons of "Superforecasting" can be distilled into a handful of directives. Base predictions on data and logic, and try to eliminate personal bias. Keep track of records so that you know how accurate you (and others) are. Think in terms of probabilities and recognize that everything is uncertain. Unpack a question into its component parts, distinguishing between what is known and unknown, and scrutinizing your assumptions.

Those lessons are hardly surprising, though the accuracy that ordinary people regularly attained through their meticulous application did amaze me. Unfortunately, few of us seem to follow these principles in our daily lives. The prescriptions in both "Superforecasting" and "Mindware" should offer us all an opportunity to understand and react more intelligently to the confusing world around us.

Leonard Mlodinow is the author of "The Upright Thinkers: The Human Journey From Living in Trees to Understanding the Cosmos."

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