More Than You Know's core premise is simple to explain but devilishly difficult to live: you will be a better investor, executive, parent, friend—person—if you approach problems from a multidisciplinary perspective. It's the difference between moving into a fixer-upper home with a full set of power tools versus a simple screwdriver. You are going to be a lot more successful and efficient if you have the proper tool for each job at hand.

The reality is that the majority of us end up with pretty narrow slices of knowledge. Most occupations encourage a degree of specialization, and some vocations, like academia, insist on it. And there are the time constraints. We are all so busy talking on the phone, answering e-mails, and going to meetings that we don't have any time left to read, think, and *play* with ideas.

Following the publication of this book's first edition, a lot of readers contacted me to say they enjoyed the exposure to non-traditional ideas. Most people easily appreciate the value of diverse thinking. But many readers view diversity as something that's nice to have, not something that's essential to success. In contrast, I have come to believe cognitive diversity is crucial to solving complex problems.

The case for cognitive diversity is based on theory and practice. In his book *The Difference*, social scientist Scott Page demonstrates the logic of diversity. He shows, using mathematical models, how and why diversity is necessary to solve certain types of problems. Page deftly nudges the diversity discussion away from metaphor and anecdote toward grounded, timeless theorems.

Notwithstanding Page's theoretical contribution, you might ask whether there's any actual evidence for diversity's value in predicting the outcomes of complex problems. The answer, a resounding yes, is based on psychologist Phil Tetlock's remarkable research summarized in his book *Expert Political Judgment*. Tetlock asked hundreds of experts to make thousands of predictions about economic and political events over a fifteen-year span. He then did something quite rude. He kept track of their results.

Expert forecasters were, on balance, deeply unimpressive. But Tetlock found some were better than others. What separated the forecasters was how they thought. The experts who knew a little about a lot—the diverse thinkers—did better than the experts who knew one big thing.

Two sources in particular have inspired my thinking on diversity. The first is the mental-models approach to investing, tirelessly advocated by Berkshire Hathaway's Charlie Munger. The second is the Santa Fe Institute (SFI), a New Mexico–based research community dedicated to multidisciplinary collaboration in pursuit of themes in the natural and social sciences.

Charlie Munger's long record of success is an extraordinary testament to the multidisciplinary approach. For Munger, a mental model is a tool—a framework that helps you understand the problem you face. He argues for constructing a latticework of models so you can effectively solve as many problems as possible. The idea is to fit a model to the problem and not, in his words, to "torture reality" to fit your model.

Certain character traits encourage the mental-models method to blossom. Fortunately, these are mostly traits you can choose: intellectual curiosity, integrity, patience, and self-criticism. Problem-solving success is not just a matter of IQ. As Munger notes, the great naturalist Charles Darwin's worldview-changing results reflect more his working method than his raw intellect. On the flip side, examples abound of smart people making bad decisions, often showing inflexibility or a failure to appreciate psychology's lessons.

A mental-models approach does not come without a cost, though. You need to spend substantial time and effort learning about various disciplines. Without a doubt, too, your learning may not be useful right away (in fact, it may never be useful). The good news is there are typically only a few big ideas in each discipline that you'll need to master.

I have learned a great deal from Munger's musings over the years, and his influence is clear throughout these pages. Fortunately, Peter Kaufman assembled Munger's background and speeches in *Poor Charlie's Almanack*, a terrific book offering plenty of insight on the mental-models approach.

The Santa Fe Institute sprung from a group of like-minded scientists who decided the world needed a new kind of academic institution. These scientists, each distinguished in his field, recognized that universities often operate in academic isolation; professors spend a lot of time with colleagues

in their field but rarely cross disciplinary boundaries. The founders felt strongly that much of the fertile scientific ground was between disciplines, and they were determined to cultivate it. Spend some time at SFI's campus and you are likely to see physicists, biologists, and economists all chiming in with their diverse perspectives on a topic of interest.

The unifying theme at SFI is the study of complex systems. In both the physical and social sciences, lots of systems emerge from the interaction of many heterogeneous parts. Examples include human consciousness, the immune system, and the economy. SFI scientists were early in identifying the salient features of these systems and in considering the similarities and differences across disciplines.

The SFI-inspired idea that has most deeply influenced me is viewing the stock market as a complex adaptive system. Embracing this mental model compelled me to revisit and question almost everything I learned in finance: agent rationality, bell-shaped price-change distributions, and notions of risk and reward. I believe the complex-adaptive-systems framework is not only a much more intuitive way to understand markets but also more consonant with the empirical record.

SFI has sparked my interest in disparate topics—sprinkled throughout the following essays—including ant colonies, power laws, human cognition, and the role of feedback mechanisms. The best way to describe how I feel following an SFI symposium is intellectually intoxicated.

You can read about the Santa Fe Institute's history in Mitchell Waldrop's *Complexity*. While the book came out during the first decade of the institute's existence, it captures much of SFI's spirit.

Finally, a word on how to read this book. Unlike a best-selling thriller, you can read *More Than You Know* from back to front just as easily as from front to back. But I recommend you simply go to the table of contents, find something that interests you, and jump in.

While the essays cover a range of topics, I categorize them into four parts—investment philosophy, psychology of investing, innovation and competitive strategy, and science and complexity theory. Consider these compartments in a toolbox, each addressing a distinct facet of investing. That said, every essay is meant to stand by itself.

This edition has updated tables and charts and new chapters in each part. Fresh topics include thoughts on management assessment, the role

of intuition, applications of game theory, and the mechanisms behind the market's mood swings.

More Than You Know leverages the research of many top-flight academics. But given the book's format, there is no way to give those academic ideas their full due. That's why I assembled a detailed reference section, including suggestions for further reading. Hopefully, the references will give you plenty to dig in to should you choose to follow up on an idea or theme.

My sincerest wish is that *More Than You Know* provides readers with some intellectual fun—a new perspective, a cool idea, or a path to self-improvement. I hope you get a fraction of the satisfaction from reading the essays that I got from writing them.