

## ***A Book Review: Thinking, Fast and Slow*** ***By Daniel Kahneman [499 Pages Farrar, Straus and Giroux]***

REVIEWED BY STEVEN E. PERKEL

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### ***A Big Book Filled With Big Ideas***

What do you do when someone recommends you read and review a book that has received accolades from the New York Times, the Wall Street Journal, Nature and The Guardian newspaper in the UK, to mention only a few in a lengthy list of respected publications? My first response was feeling excitement punctuated by the thought, *this must be some special book, I should check out what it has to say.*

I got in the car and drove to my favorite bookstore, went first to the coffee bar and ordered a large Café Americano, then found the book and grabbed it off the shelf. I felt the heft of its thickness in my hand, opened it to the 499<sup>th</sup> page, the last page in the Index. Just then, before reading a single word, everything slowed down. My thinking automatically shifted to the deadline for submitting the review, the time I had already committed to other projects and the reality that I had to get everything done before going on vacation in ten days. At that precise moment a familiar discomfort emerged linked to the private thought, *perhaps I have bitten off more than I can chew. I also felt a bit lethargic.*

Despite these disquieting thoughts and feelings, with the book in hand I picked up the coffee and added a nut and chocolate chip granola bar to my order. I sat down and dove into the Introduction of [\*Thinking, Fast and Slow\*](#) by psychologist and winner of a Nobel Prize for Economic Sciences, Daniel Kahneman.

A little while later, I got it; I had an explanation of why my energy, excitement and drive to read this book shifted to feeling more like a chore than a choice. System 1 was having it out with System 2. I learned that as I did the work of reading and thinking about what I read energy was being depleted. I also learned the granola bar, loaded with complex carbs that would become glucose, was just what my brain would have ordered if it had the capacity to do so.

In *Thinking, Fast and Slow* Kahneman offers readers a lucid description of how the human mind works as he explains two ways of thinking he calls System 1 and System 2. System 1 is emotional, im-

mediate and intuitive. System 2 is logical, more critical than System 1; it is slow in comparison to System 1. System 2 is an energy hog and is lazy.

Should you read *Thinking, Fast and Slow* many of the terms used by Kahneman including anchoring, framing, loss aversion, as well as, outcome and hindsight biases, will be familiar. What is unique and fun about this book is the ways in which Kahneman illustrates his ideas and lessons using puzzles, optical illusions, and experiments that he and his colleagues have conducted over a period of many years.

*Thinking, Fast and Slow* is a big book filled with many big ideas. Kahneman, a cognitive psychologist thoughtfully organized the book into five parts each of which has several short chapters. Part 1 explains the characters of his story, System 1 and System 2. The author even goes so far as to identify System 1 as the hero and System 2 as a lazy controller of the limited energy we have available when we think or solve problems. He describes attention and the effort it requires in a chapter that includes a discussion of memory, time pressure and the costs we incur when tasks involve conflicts and a need to suppress a natural tendency. An example that resonated with me was how hard it is to inhibit emotional responses to a stirring film. I could only imagine how exhausting it is for jurors hearing an emotionally gripping matter and the effort it takes to remain fact focused.

Kahneman demonstrates the importance of timing, energy and food as he describes research that was done in Israel with a sample of Israeli parole judges. These judges spend the entire day reading applications for parole. The cases are presented randomly and very little time is spent on any single case (6 minutes). While only 35% of the applications for parole are approved, the approval rate escalates to 65% after each of three meal breaks the judges take during the day. The approval rate drops to just about zero immediately before the next meal. The explanation for this pattern was that the judges were tired and hungry and thus tended to fall back to easier default positions. How do you think you might use this information when you help your next client organize and time their arguments to a jury or judge?

Part 1 also includes a chapter about the power of stories that have associative coherence and how priming influences decision-making. "Cognitive Ease" includes a discussion of the impact of having to attend to an issue that is somewhere on a continuum that has Cognitive Strain at one end and Cognitive Ease at the other. Examples of this include reading or processing material printed in an obscure font, faint colors or complicated language. The chart on page 60 is not to be missed and should immediately be followed by turning to page 62 to read "How To Write A Persuasive Message" by reducing cognitive strain; I promise you, you will not be sorry.

Chapters 6, 7, 8 respectively address norms, surprises and causes, jumping to conclusions, and how judgment occurs. I think Chapter 9 contains important information for our profession and practice. When confronted with a question that is too hard to answer or a problem that is too hard to solve, System 1, Kahneman's hero, will find a related question that is simpler and will use it to answer the more challenging question. Kahneman calls this substitution but we might call it nullification. Chapter 9 continues with a discussion of the use of heuristic questions that people use to arrive at answers to hard questions. One of the examples he gives is:

***Target Question***

How should financial advisors who prey on the elderly be punished?

***Heuristic Question***

How much anger do I feel when I think of financial predators?

The remainder of Chapter 9 expands upon heuristics and perceptions, and ends with a summary of the characteristics of System 1 and is the prelude for Part 2.

Part 2 of *Thinking, Fast and Slow* discusses heuristics and biases in greater detail and provides a warning about drawing inferences from casual observations including stereotypes. One example of erroneous reasoning is embodied in the reporting of the results of a research exercise that involved a story of a woman sitting on a New York subway car reading the New York Times. Respondents were asked to guess whether she had a PhD or didn't go to college at all. The common response is to pick the PhD even though the data does not support this conclusion. Why? Because at any given time the number of people without PhDs riding the New York subways is far greater than the number of PhDs. What were the heuristic cues that led to the reported but wrong answer to the question?

But the tour de force about heuristics is the story of Linda, a fictitious woman. In this experiment done with Kahneman's dear friend and collaborator, Amos Tversky (who died in 1996 at the age of 59), a group of people were given the following description of Linda:

Linda is thirty-one years old, single, outspoken and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in antinuclear demonstrations.

After being given the description of Linda, the group was asked to choose from a list of seven outcomes for Linda the one they believed was most likely. The results of the experiment defied logic, demonstrated a System 2 error and led to a simpler experimental question:

Which alternative is more probable?

Linda is a bank teller.

Linda is a bank teller and is active in the feminist movement.

Take a moment and answer the question yourself. Did you choose the first or second outcome? When groups of undergraduate psychology students at several major universities had this simple problem posed to them 85% to 90% chose the second outcome, which is illogical. Kahneman reports he asked a graduate student the same question and she responded similarly. When he told her that she made an error in her logic she explained herself by saying that she thought Kahneman was just asking for her opinion. Do you know why the second outcome for Linda is incorrect? Read Chapter 15 to learn all about it.

Chapter 16 provides insights into statistical reasoning compared to stereotypic causes that people use in decision-making. Chapter 17 and 18 are readable romps through the fact that over time all events regress toward the mean, a manageable conversation about regression and the problems both System 1 and System 2 create and encounter trying to deal with statistical regression and intuitive predictions. Kahneman, also with wonderful humor and wisdom, shares his favorite equations, which gave me pause to smile and think. Here they are for your thinking pleasure:

Success = talent + luck

Great success = a little more talent + a lot of luck

Part 3 of *Thinking, Fast and Slow* addresses the issue of overconfidence in chapters entitled “The Illusion of Understanding,” “The Illusion of Validity,” “Intuition vs. Formulas,” “Expert Intuition: Can We Trust It,” “The Outside View” and “The Engine of Capitalism.” Kahneman states that the content of Part 3 was influenced by the work of Nassim Taleb the author of *The Black Swan*. Each of these chapters explores how we have confidence in what we think we know and the difficulty we have realizing how uncertain life and the world in which we live really are.

The idea that stories of the past, flawed or accurate, shape a person’s worldview and their expectations for the future is an important theme in Chapter 19. Using Taleb’s term, *narrative fallacy*, Kahneman describes what makes an explanatory story compelling: simplicity; concreteness rather than abstractness; to make a story resonate with legitimacy assign larger roles to talent, stupidity and intentions rather than luck. Compelling stories focus on a few striking events that happened instead of the many events that did not happen. The human mind has real trouble dealing with things that did not occur.

Kahneman points out the impact of recent events that register as relevant are likely to become candidates for important elements in a causal narrative. The importance and impact of the *halo effect* is discussed in some detail in this part of the book. Kahneman reports that the halo effect helps keep stories simple, valid and therefore viable. Using the history of Google™ to illustrate the power of narratives and the halo effect, Kahneman evokes the WYSIATI (what you see is all there is) rule that he discusses earlier in the book. He also discusses the impact of outcome and hindsight bias as elements in decision-making.

Malpractice litigation and research done in California related to a bridge in Duluth, Minnesota are mentioned in the context of outcome and hindsight biases. The impact of the halo effect on business writing and managerial mythology are also discussed and are interesting examples of how we overestimate the value of the patterns we see and underestimate the importance of luck.

Chapter 20 addresses cognitive illusions supported by our tendencies to attribute positive outcomes to skill. The examples Kahneman provides in this chapter may cause you to question the faith you have previously placed in financial advisors and the credibility of pundits. The impact of a culture of professionalism and expertise may also be called into question. For me, the most important take-aways from Chapter 20 addressed issues of predictability: “errors of prediction are inevitable because the world is unpredictable and that high subjective confidence is not to be trusted as an indicator of accuracy (low confidence may be more informative)”. Applying Kahneman’s observations about predictions may be somewhat humbling but I think I will recall them as I consider my own work with clients.

Intuition, algorithmic decision-making and the trustworthiness of expert intuition are discussed in Chapters 21 and 22. The literature and research on decision-making seems to point to algorithms as being more reliable than intuition in a variety of arenas. As he does in other chapters, Kahneman challenges readers to apply his observations and what the research shows. If you are about to hire someone, the suggested methodology suggested at the end of Chapter 21 will interest you.

Have you ever heard an experienced trial lawyer say she develops and chooses case themes, selects jurors and frames expert testimony based on intuition, experience and a sense of knowing? Sure you have. What you may not be familiar with is RPD: Recognition-primed decision-making. RPD is a model developed by Gary Klein, a leader of the Naturalistic Decision Making movement. Kahneman and Klein were adversaries over theories about bias and heuristics and decision-making. But through a clever and committed research effort they became adversarial collaborators trying to answer the following question: *When can you trust an experienced professional who claims to have an intuition?*

The result of the collaboration and the answer to the question was the paper, *Conditions for Intuitive Expertise: A Failure to Disagree*, that Kahneman and Klein wrote.

RPD, which is a two-phase process, according to Kahneman involves both System 1 and System 2. In Phase 1 a tentative plan automatically emerges as a result of associative memory – clearly a System 1 activity. Phase 2 of RPD is a deliberative process in which the tentative System 1 plan is played out mentally to test its workability using memories that have been acquired over time as rubrics. In the end, when answering the question they posed for their collaboration, Kahneman and Klein agreed that intuition is not a reliable guide to determine the validity of the confidence an expert demonstrates. That does not solve the problem regarding claims made by experts in everyday life. Kahneman helps resolve this problem by pointing out that skilled experts have likely met two conditions that enable them to offer opinions: first they have been in environments that are sufficiently regular to be predictable and have had opportunities to learn about predictable events through prolonged practice.

In the conclusion of *Expert Intuition: When Can We Trust It?*, Kahneman discusses emotional learning, the role conditioning can play in mental activation, the importance of valid/invalid cues and winds the chapter up reveling in the areas of intellectual agreement that he and Klein discovered even while they remained as emotionally different as day and night.

Providing insight about expert intuition is followed by observations that people are loss averse: that is, we hate to lose more than we like to win. Kahneman also addresses the endowment effect, which causes people to exaggerate the value of things they have as compared to what they do not have. The endowment effect and loss aversion may provide partial explanations for the behavior we see when litigants are trying to negotiate the settlement of a case.

Moving closer to completion of the reading, thinking and writing exercise, we come across “Bad Events!” Here, where Kahneman’s story has neuroscience, evolutionary history and the hero of the book, System 1, coming together, we learn that the human brain has the capacity to react immediately to threats, real or symbolic. The sensitivity and reactivity to threats, according to Kahneman, extends to processing statements of opinions we strongly disagree with. Think about how this universal capacity could be useful in pre-trial research that tests particular themes, demonstratives and witness testimony and you will log another reason to read *Thinking, Fast and Slow*.

While this may sound like a bit of an overstatement, *Thinking, Fast and Slow* has insights for everyone, including our colleagues who think golf is a metaphor for life. You know who you are. Applying loss aversion and prospect theory to analyze putting, two economists at the University of Pennsylvania meticulously analyzed 2.5 million putts to answer a single prediction: golfers try a little harder when putting for par than when putting for birdie. After examining 2.5 million putts, they concluded they were right. Players who were putting for par were more successful than players putting for a birdie. Why is this study important to us? The answer does not emerge from the specific findings of the research but the study is a compelling case for using a theory to aid thinking and decision-making. After all, a theory is good only if it has predictive value in real life. This becomes especially important since we all keep mental accounts to help us manage opportunity, loss and regrets. Of course, System 1 will formulate and present you with theories based on intuition, memory and experience while System 2 will ask that you be more critical to determine the validity of System 1 propositions.

Loss aversion and the law is a very small part of the book, but it concludes with the following gem: “if people who lose suffer more than people who merely fail to gain, they may also deserve more protection from the law.” Similarly the chapter on rare events demonstrates the value of vivid descrip-

tion as a factor in choice making and the use of whole numbers rather than percentages in capital cases. Kahneman asserts that a good defense attorney wishing to cast doubt on DNA evidence will not use “the chance of a false match is 0.1%.” Instead, the attorney will more likely favor the statement, “A false match occurs in 1 of 1000 capital cases.” The latter statement invites finders of fact to wonder if the person on trial is the 1 person in a thousand. Which statement would the prosecutor favor?

*Thinking, Fast and Slow* completes the journey Kahneman invited us to accompany him on by discussing recent research. Should you choose to read this book you will learn about the never-ending dance between the “experiencing self” and the “remembering self”. Kahneman points out that he, like all of us, is his remembering self, and that his experiencing self, which does his living, is like a stranger to him. Issues of quality of life, well-being and positive psychology are also discussed in Part 5 of the book. The final chapter, “Conclusions” addresses the differences between the experiencing self and the remembering self, the role of agents in classical and behavioral economics, and the interactions between System 1 and System 2. There is also a bonus for readers in Appendices A and B, which contain two articles Kahneman wrote with Amos Tversky. These two articles are some of the foundations of behavioral economics, prospect theory and framing effects. While they are important seminal works, they are also accessible.

Finally, if you like to think about thinking, I think you should read *Thinking, Fast and Slow*. But, I warn you, while I found myself rushing through my first reading, I firmly believe that this book should be consumed slowly and in a manner that arouses a multitude of ideas, questions and conversations – just like great food arouses a multitude of tastes, smells and textures.