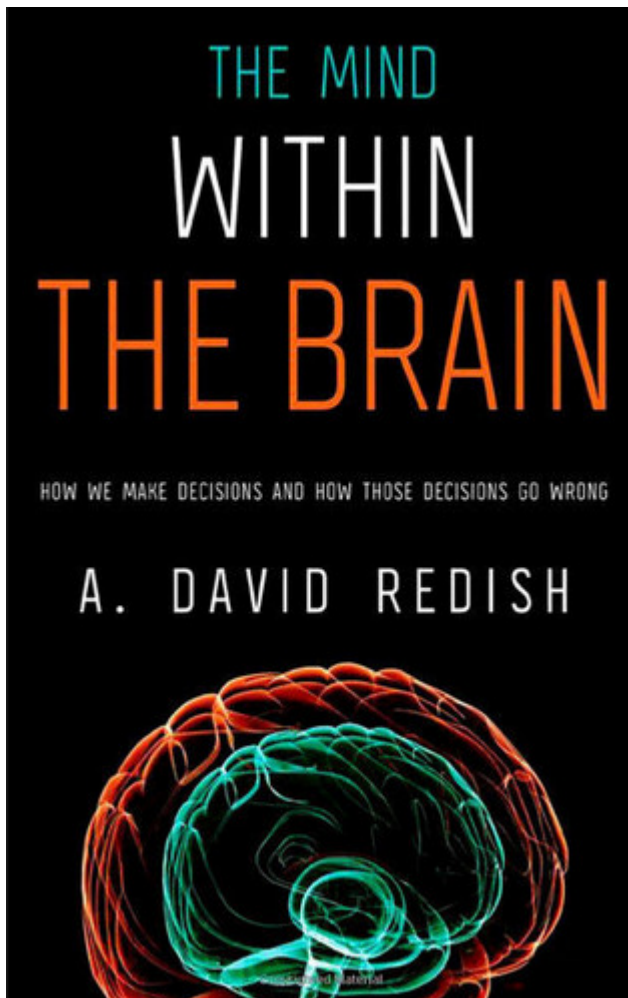


## 'Mind Within the Brain' sheds light on subject

Posted: Sunday, September 6, 2015

*"The Mind Within the Brain: How We Make Decisions and How Those Decisions Go Wrong"* by A. David Redish. New York: Oxford University Press, 2015, 394 pages, \$35.



“Our decisions make us who we are,” A. David Redish explains in the preface to his seminal work, “The Mind Within the Brain: How We Make Decisions and How Those Decisions Go Wrong,” which was originally published in 2013 as a hardcover and has just been released in paperback. “Although we would like to think that our decisions are made rationally, deliberately, many decisions are not. We all know that some of our decisions are made emotionally, and some are made reactively.

“Some have their intended consequences, and some have consequences we never imagined possible,” he writes. “One of the remarkable things that has occurred over the past several decades is the convergence of different fields on the mechanics of decision-making. Scientific fields as diverse as psychology, robotics, economics, neuroscience and the new fields of neuro-economics and computational psychiatry have all been converging on the recognition that decision-making arises from a complex interaction of multiple subsystems.”

“The Mind Within the Brain” consists of 24 chapters arranged in four major sections:

“Decisions and the Brain,” “The Decision-Making System,” “The Brain with a Mind of Its Own” and “The Human Condition.” As might be anticipated, the concepts and ideas Redish presents are

exceptionally well-researched, with 56 pages of citations and 38 pages of bibliographic notes at the conclusion of the main text. Three appendices, “Information Processing in Neurons,” “Gleaning Information from the Brain” and “Content-Addressable Memory,” provide additional resources to help the uninitiated gain a better grasp of the complex relationships the researcher describes throughout the narrative.

“To study something scientifically, we need to define our question in a way that we can measure and quantify it,” Redish asserts in the inaugural chapter of the book, “What Is a Decision?” “Thus, we need a measure of decision-making that we can observe, so we can compare the predictions that arise from our hypotheses with actual data. This is the key to the scientific process: There must be a comparison to reality. If the hypothesis doesn’t fit that reality, we must reject the hypothesis, no matter how much we like it.”

Although I found most of the book captivating, the 10th chapter, “The Habits of Our Lives,” was undoubtedly one of my favorites. I have long been fascinated by the repetitive nature of some thought patterns and their connection to maladaptive behaviors such as what we see in individuals who have addictions. Redish illuminates the process by which this happens in some detail; the implications for those who work in the helping professions are obvious.

“We have all developed our own habits over the course of our lives,” Redish writes. “These habits are not instincts; they are not genetically programmed into us. Instead, habits develop out of regularity, reliability. We’d like to think habits develop out of what we’ve individually found to be most useful to our lives, but of course, we all have habits we’d like to break. Why do we develop bad habits? Where do habits come from? What are habits?”

“Fundamentally, habits are sequences of actions that we’ve learned to take,” he continues. “The simplest example of a habit is the drive to work. The first time you drive to work, you need to use a map, follow a GPS, pay attention to the route you want to take. But if you drive the route every day for weeks, months or years, you eventually stop paying attention to it. You drive yourself to work, even as you are thinking of something else.”

Redish is a Distinguished McKnight University Professor in the Department of Neuroscience at the University of Minnesota. He completed his undergraduate work at Johns Hopkins, where he majored in computer science and the writing seminars. His master’s and doctoral degrees are both in computer science from Carnegie Mellon; he also did some post-doctoral work in experimental neuroscience at the University of Arizona. He publishes extensively in scholarly journals and occasionally contributes to popular magazines such as *Science*, *WIRED* and *Psychology Today*. This is his second book, the first being “Beyond the Cognitive Map: From Place Cells to Episodic Memory.”

Fair warning: Although much of what Redish has to say is fairly accessible and makes sense once you understand where he is coming from, this is one of those books that requires the reader to slow down and take the time needed to adequately appreciate the significance of the contribution being made. Getting through this tome will take considerable effort; some of the material may be difficult to decipher, especially for anyone who has not had at least a rudimentary exposure to the basic architecture on which much of his thesis is built. It helped that I had some biology as well as psychology in my educational background; still, a lot has happened in both fields over the last 30 years or so. I really had to work to get through passages such as this one from “Deliberation,” the ninth chapter:

“When he was in my lab, Matthijs van der Meer recorded from ventral striatal neurons from rats on this same task and found that at the same times that Adam Johnson had found the hippocampus sweeping through those future paths, the ventral striatal reward cells (cells that responded positively during consumption) activated again, as if the ventral striatum was covertly representing something about the fact that the animal would get reward if it went in that direction.”

If you are one of those introspective folks who occasionally wonders how you got to your current station in life, you might find “The Mind Within the Brain” fascinating. In a very real sense, most of what happens to us can be traced back to decisions that were made either by us, for us, or about us. Redish sheds some much-needed light on the process by which this occurs, and discusses the implications that flow from the model he constructs for virtually all areas of our existence. I recommend this one for the hardcore reader who truly seeks enlightenment.

— *Reviewed by Aaron W. Hughey, Department of Counseling and Student Affairs, Western Kentucky University.*