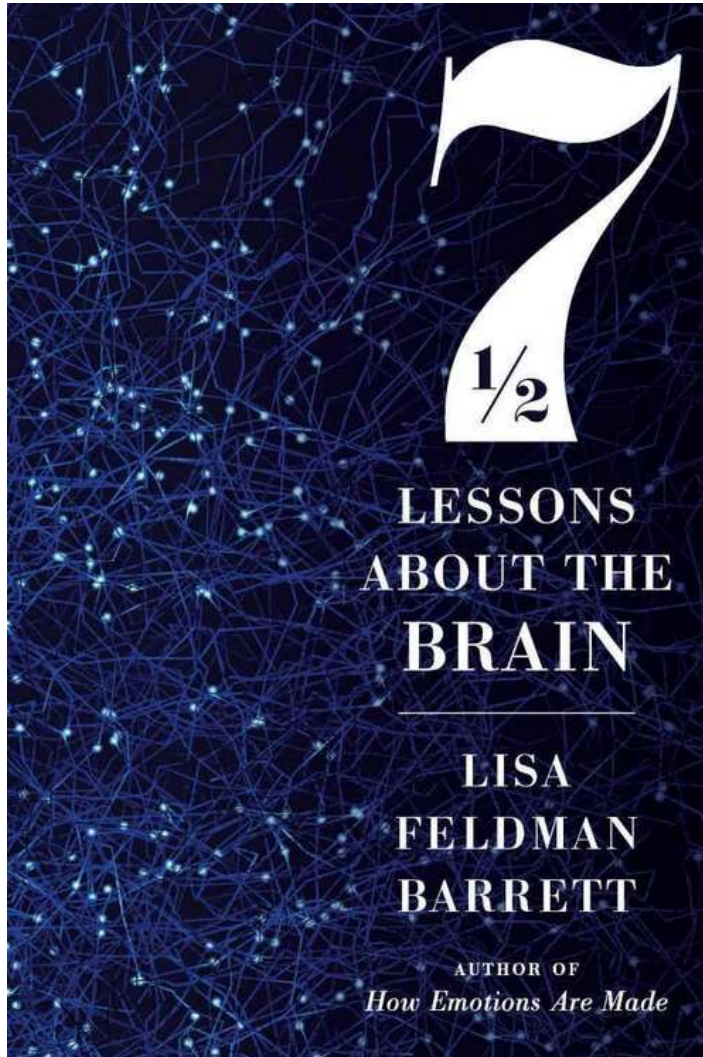


# Evolutionary Story: Author offers her insights on brain development

Posted: Sunday, March 21, 2021

*“Seven and a Half Lessons About the Brain” by Lisa Feldman Barrett. New York: Houghton Mifflin Harcourt, 2020. 192 pages, \$24 (hardcover).*



“Why did a brain like yours evolve?” Lisa Feldman Barrett asks near the beginning of “Seven and a Half Lessons About the Brain,” her latest effort to enlighten the general public on a topic that has captured our collective imagination since time immemorial. “The obvious answer is ‘to think.’ It’s common to assume that brains evolved in some kind of upward progression – say, from lower animals to higher animals, with the most sophisticated, thinking brain of all, the human brain, at the top. After all, thinking is the human superpower, right?”

“Well, the obvious answer turns out to be wrong,” she continues. “In fact, the idea that our brains evolved for thinking has been the source of many profound misconceptions about human nature. Once you give up that cherished belief, you will have taken the first step toward understanding how your brain actually works and what its most important job is – and, ultimately, what kind of creature you really are.”

I’ll admit it. I have been fascinated with the mind – specifically, the mind-brain connection – for most of my life. Over the

years, I have read several attempts to answer the question of what constitutes consciousness, from the initial explanations put forth by philosophers many centuries ago based primarily on pure reason to the current arguments by neuroscientists, informed largely by leading-edge technology. And although the present offering leans decidedly toward the biological realm, the implications for my quest are readily apparent on virtually every page.

Structurally, the book is comprised of the following chapters: “The Half Lesson: Your Brain Is Not for Thinking,” “Lesson #1: You Have One Brain (Not Three),” “Lesson #2: Your Brain Is a Network,” “Lesson #3: Little Brains Wire Themselves to Their World,” “Lesson #4: Your Brain Predicts (Almost) Everything You Do,” “Lesson #5: Your Brain Secretly Works With Other Brains,” “Lesson #6: Brains Make More than One Kind of Mind” and “Lesson #7: Our Brains Can Create Reality.”

To be honest, this was a relatively quick read, albeit one with potentially profound repercussions for how many of us think the brain functions. And even though Barrett is one of the leading researchers in her field, “Seven and a Half Lessons About the Brain” was obviously written with a general

audience in mind. Like many world-class scientists, most of her published works are in scholarly journals that require considerable background in the related subject matter to adequately digest. I have noticed that an increasing number of those who move in these highly-exclusive circles reach a point where they want the general public to have some idea of the significance of the contributions they are making to our knowledge base. I put this exquisite little primer in that category.

Barrett has a knack for taking the relatively mundane, drilling down through the complex layers and exposing the innate truths at the core of reality.

“How can animals predict their bodies’ future needs?” the author posits in one particularly intriguing passage. “The best source of information comes from their past – the actions they’ve taken at other times in similar circumstances. If a past action brought benefits, success as a successful escape or a tasty meal, they’re likely to repeat that action.”

“All sorts of animals, including humans, somehow conjure up past experiences to prepare their bodies for action,” Barrett adds. “Prediction is such a useful capability that even single-celled creatures plan their actions predictively. Scientists are still puzzling out how they do it.”

One of the assertions Barrett makes revolves around a concept most of us – not just those in the academic world – have been exposed to for much of our lives; i.e., the “triune brain.” This once widely-accepted theory of how the brain evolved and functions involves the notion that the brain has three basic components: the reptilian or primal brain (basal ganglia), the paleomammalian or emotional brain (limbic system) and the neomammalian or rational brain (neocortex). While many of my colleagues no doubt know that this model has been discredited, the way Barrett describes how the brain actually works is simple yet compelling.

“According to this evolutionary story, the human brain ended up with three layers – one for surviving, one for feeling, and one for thinking – an arrangement known as the triune brain,” Barrett explains. “The triune brain is one of the most successful and widespread errors in all of science. It’s certainly a compelling story, and at times, it captures how we feel in daily life. But human brains don’t work that way. Bad behavior doesn’t come from ancient and unbridled inner beasts. Good behavior is not the result of rationality. And rationality and emotion are not at war ... they do not even live in separate parts of the brain.”

Barrett is one of the most cited researchers in the world for her groundbreaking work in psychology and neuroscience. A University Distinguished Professor at Northeastern University with appointments at the Massachusetts General Hospital and Harvard Medical School, she was awarded a Guggenheim fellowship in neuroscience in 2019. She is also a member of the American Academy of Arts and Sciences and the Royal Society of Canada. Her previous books include “How Emotions Are Made: The Secret Life of the Brain,” “The Psychological Construction of Emotion” with James A. Russell and Joseph E. LeDoux and “The Mind in Context” with Batja Mesquita and Eliot R. Smith.

“So, returning to our original question: Why did a brain like yours evolve?” Barrett reflects. “That question is not answerable because evolution does not act with purpose – there is no ‘why.’ But we can say what is your brain’s most important job. It’s not rationality. Not emotion. Not imagination, or creativity, or empathy. Your brain’s most important job is to control your body – to manage allostasis – by predicting energy needs before they arise so you can efficiently make worthwhile movements and survive.”

So if you’re into this sort of exploration, with its inherent consequences for deciphering how we think, act, and feel, you will definitely want to pick up a copy of “Seven and a Half Lessons About the Brain.” You won’t be disappointed.

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