

The Emotional Brain

SYNAPTIC SELF

*How Our
Brains Become
Who We Are*

“A brilliant manifesto at the cutting edge of psychology’s evolution into a brain science. Joseph LeDoux is one of the field’s pre-eminent, most important thinkers.”

—Daniel Goleman, author of *Emotional Intelligence*

Synapses, the spaces between neurons, are the channels through which we think, act, imagine, feel, and remember. In short, they enable each of us to function as a single, integrated individual—from moment to moment, from year to year. Here, world-renowned brain expert Joseph LeDoux tells a groundbreaking and profound story: how the brain, and particularly its synapses, creates and maintains personality. Rather than taking sides in the age-old nature versus nurture debate, LeDoux illustrates how both contribute to synaptic connectivity and personality, broadening our understanding of who we are and what it means to be human.

“LeDoux’s bold formulation will change the way you think about who you are.”

—Daniel L. Schacter, Chairman of Psychology at Harvard University
and author of *The Seven Sins of Memory*

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WHO WE ARE



JOSEPH LeDOUX

ABOUT THE AUTHOR

Joseph LeDoux, Henry and Lucy Moses Professor of Science at New York University's Center for Neural Science, is the author of *The Emotional Brain: The Mysterious Underpinnings of Emotional Life* and the coauthor, with Michael Gazzaniga, of *The Integrated Mind*.

Praise for Joseph LeDoux's *Synaptic Self*

"LeDoux's work, covering an avalanche of neuroscientific research, is surely the most accessible contemporary work for those interested in the brain's effect on personality."

—Gilbert Taylor, *Booklist*

"LeDoux offers a fascinating view into that 'most unaccountable of machinery,' the brain."

—*Kirkus Reviews*

"*Synaptic Self* represents a brilliant manifesto at the cutting edge of psychology's evolution into a brain science. Joseph LeDoux is one of the field's pre-eminent, most important thinkers."

—Daniel Goleman, author of *Emotional Intelligence*

"In this pathbreaking synthesis, Joseph LeDoux draws on dazzling insights from the cutting edge of neuroscience to generate a new conception of an enduring mystery: the nature of the self. Enlightening and engrossing, LeDoux's bold formulation will change the way you think about who you are."

—Daniel L. Schacter, Chairman of Psychology at Harvard University, author of *The Seven Sins of Memory*

"*Synaptic Self* is a wonderful tour of the brain circuitry behind some of the critical aspects of the mind. LeDoux is an expert tour guide and it is well worth listening. His perspective takes you deep into the cellular basis of what it is to be a thinking being."

—Antonio R. Damasio, neuroscientist, author of *The Feeling of What Happens*

"A clear, up-to-date, and impressively fair-minded account of what neuroscience has established about human nature."

—Howard Gardner, author of *Frames of Mind* and *Intelligence Reframed*

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ACKNOWLEDGMENTS

The bottom-line point of this book is “You are your synapses.” Synapses are the spaces between brain cells, but are much more. They are the channels of communication between brain cells, and the means by which most of what the brain does is accomplished.

To propose a synaptic explanation of the self, I had to discuss in some detail how the brain works. I’ve tried to do this without trivializing the facts—it’s not a pop psychology, how-to, or self-help book. Although writing about the brain in a way that will be clear to lay readers and at the same time not insulting to other scientists is tough, I’m pleased with the result.

But I didn’t achieve this goal alone. My wife, Nancy Princenthal, is an art critic, and a fantastic writer. She constantly urged me to use words economically, and to avoid repetition. She read and reread, each time (often to my annoyance) with a sharpened pencil in hand. And when I had finally met her critical approval, I turned the manuscript over to Rick Kot, my editor at Viking. It was great to have a pro like Rick on my side.

I also want to thank present and past members of my lab. Without their creativity and hard work, the science that inspired me to write *Synaptic Self* would not exist. And the work could not have been done without the generous support of the National Institute of Mental Health, New York University, the W. H. Keck Foundation, and the Henry and Lucy Moses Fund.

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Finally, I thank my children, Jacob and Milo. They inspire my synapses to change every day.

Writing a book is a humbling experience. You come to realize how many things you thought you understood but really didn't, at least not well enough to explain them clearly. I learned a tremendous amount while writing *Synaptic Self*, and hope you do too while reading it.

Note: Internet-equipped readers can visit the LeDoux Lab Home Page (www.cns.nyu.edu/home/ledoux) for more information about my research. Once there, it will be possible to navigate to the Synaptic Self page, where information relevant to the book is presented, including links to reviews and a full bibliographic listing.