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Media and Book Reviews

SLEIGHTS OF MIND: WHAT THE NEUROSCIENCE OF MAGIC REVEALS ABOUT OUR EVERYDAY DECEPTIONS

by Stephen L. Macknik and Susana Martinez-Conde, 271 pp., Henry Holt and Company, 2010, \$26

"Magic" conceptually evolves with life. In childhood it is the answer to all questions unanswerable and an explanation to an uncle's ability to pull quarters from one's orifices, but experience in aging often lends suspicion to mystery and eventually uncovers the secrets, figuratively and mechanistically. Illusions, as "magic tricks," are easily defeated by divulging the "how," that is until one realizes that the "why" is deeply ingrained in a person's mind, conscious and unconscious, and could serve further advancements in cognitive neuroscience and behavioral psychology. It is with this notion that the authors of *Sleights of Mind: What the Neuroscience of Magic Reveals About Our Everyday Deceptions* set out to define what they coined "neuromagic," and describe a number of ways by which magicians take advantage of the human mind.

It should be known that this reviewer is both a neurologist and an occasional cocktail party prestidigitator. This volume is an appropriate read for members of either camp, as well as the armchair varieties of neuroscientists, psychologists, and philosophers. Across 12 chapters and with aid of celebrity magicians such as Teller (of Penn and Teller fame), Mac King, and references to historic greats such as Houdini and Dai Vernon, the authors highlight the fallacies of human thinking through the magic tricks that exploit them. The authors, Stephen Macknik and Susana Martinez-Conde, are neuroscientists with specialization in behavioral neurophysiology and visual neuroscience, respectively, and both possess an interest in illusions. The rhythm of the book is maintained by the chronicling of their pursuit to perform "neuromagic" at The Magic Castle (magic's most prestigious venue), and the experts that aid in their practice of "mental jujitsu." Each chapter describes a different element of attention and

awareness, as well as a magic trick and a more practical application. Misdirection is exemplified by Apollo Robbins, an expert pickpocket, who describes the would-be thief fleecing a willing spectator. The act is certainly more than fast hands and nimble fingers, as is evident in the discussion of joint attention (sharing another's experience by following gaze or gestures), mirror neurons and the mind's eye, habituation-dishabituation paradigm, and overt and covert attention. In this case, joint attention is further described in the context of its deficiency in autistic patients, the insusceptibility of these patients to magicians' misdirection cues, and the potential utility of magic tricks as a diagnostic measure in this population of patients.

The authors chose appropriate exemplary illusions relative to the concepts discussed (e.g., spoon bending for amodal completion, and coin drops/tosses and vanishing objects for bias and priming). The tricks are bookended by "Spoiler alert," which quickly becomes redundant, albeit courteous. The authors appear to take no overt satisfaction in revealing magic's secrets, but rather praise the respective conjurer for either the simplicity or intricacies of the illusion. There are few images to accompany the descriptions; however, there is a supplemental Web site with several captivating videos. Perhaps it is this reviewer's familiarity with the tricks, or even the authors' intention, but more compelling than the "how" or "why" of the trickery are the transitions to philosophy of human behavior. The book touches briefly but cleverly on the way in which misinformation effect can alter one's memory, and how cognitive dissonance, dualism, priority, and exclusivity effects provide a compelling argument against free will. The authors describe fMRI experiments that objectively oppose conscious choice, effectively astonishing this reviewer, and facilitated much philosophical discussion.

The writing is natural and fluid, and the content is presented such that the layperson can delve into these complicated topics with ease. The trade-off, however, is that few neuroanatomic correlates

are discussed. Though some of the illusions are dated by thousands of years, the uniqueness of “neuromagic,” tying evolving research of neuroscience to techniques used by Vegas acts, con artists, and would-be psychic mediums, maintains a very “current” sense of the discussion, and the potential

for diagnostic and clinical utility may well establish this volume as pioneering work in an evolving science.

Reviewed by Michael Boyd, MD

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