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# Medical research and magic come together

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The unorthodox research collaboration between two Barrow Neurological Institute scientists and some of the world's greatest magicians is detailed in a new book called Sleights of Mind.

Published by Henry Holt and Company, the book is the first ever written about the neuroscience of magic. The authors, Barrow vision and cognition researchers Susana Martinez-Conde, PhD, and Stephen Macknik, PhD, with Sandra Blakeslee, a New York Times Science correspondent, describe at a fundamental level why your brain is so vulnerable to magic and how science can learn from the art of illusion. Aiding with their research have been renowned magicians including Penn and Teller, Apollo Robbins, the Amazing Randi and Mac King.

"We have spent the last few years traveling the world, meeting magicians, researching their art, and collaborating with them on our study of the brain," says Dr. Martinez-Conde, director of the Laboratory of Visual Neuroscience. "Magicians do cognitive science experiments for audiences all night long and they may be even more effective than we scientists are in the lab."

Drs. Macknik and Martinez-Conde accepted faculty appointments at Barrow in 2004 and their research into vision and cognition is now a focal point at Barrow, the largest neurosurgical facility in the United States.

"We are on a fascinating journey about the neural underpinning of magic and the brain," says Dr. Macknik, director of the Laboratory of

Behavioral Neurophysiology. "If we fully understand how magicians hack our brains, we will unveil the neural bases of consciousness itself."

Sleights of Mind includes scientific discussions on topics like illusory correlations, eye movements and multisensory integration. But it also includes insider details on specific well-known magic tricks and how magicians execute the illusions to fool the brain. "We've warned readers with 'Spoiler Alerts' on the sections that describe the secrets of the tricks," says Dr. Martinez-Conde. "If you don't want to know the magical secrets you can skip those portions."

Dr. Macknik underscores that while their magic research has entertaining aspects, it has significant scientific goals. "Our hope is that the results of this research can have positive impact on many neurological diseases such as Alzheimer's, Parkinson's and autism. The notion of 'what produces awareness' is the ultimate scientific question, and neuroscience is on the verge of answering it."

Provided by St. Joseph's Hospital and Medical Center

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