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Scientists study how magicians manipulate perception

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By Robert Mitchum | Tribune staff reporter
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When a magicians pulls a coin out of thin air or changes the queen of diamonds to the jack of clubs with a snap of their finger, they create an illusion that thrills audiences young and old.

But scientists are beginning to realize that magicians are experts at manipulating human perception, exposing the flaws in how our brains process the world around us. By examining how the brain reacts to tricks of the trade like misdirection and sleight of hand, scientists may be able to better learn the neural underpinnings of perception.

The potential of that unlikely coalition between the forces of magic and science was on display as part of a free event Monday at the Chicago Cultural Center. Phoenix-based neuroscientist Susana Martinez-Conde and "professional thief" Apollo Robbins co-presented "The Magic of Perception" at the center's Claudia Cassidy Theater.

The collaboration grew from a 2007 symposium in Las Vegas where Martinez-Conde discovered that magicians had already worked through some of the biggest problems of cognitive neuroscience, the study of how humans perceive and think.

"On a number of occasions, it's my feeling that cognitive neuroscientists have been reinventing the wheel," Martinez-Conde said. "We have come up with principles that magicians have already been using for a long time."

The human brain is not a perfect reader of reality, Martinez-Conde said, and it occasionally uses shortcuts to interpret the world more quickly and efficiently. But magicians, as well as less savory characters, exploit those shortcuts to do what seems impossible, as when attention is drawn to a magician's left hand while he hides a coin with his right.

"It is a misconception that the brain reconstructs reality," Martinez-Conde said. "Magicians create illusions to exploit this mismatch."

Those magical methods can then be applied to the laboratory, in combination with high-technology brain-imaging technology, to study how the brain works in both normal and abnormal situations. Such studies could yield insight into how to treat conditions such as attention-deficit disorder or even improve educational methods, Martinez-Conde said.

For magicians, the collaboration offers a means of scientifically confirming long-held theories about how to toy with an audience's expectations and perceptions, Robbins said. Laughing off the idea that explaining how the brain is manipulated by magic tricks would give away the act, Robbins said that the studies would instead promote the "academic pursuit" of magic.

"If you think of magic as being a hypothesis, we have no scientific method to prove what we instinctually know," Robbins said. "The goal for me with this is to achieve a better perception of magic as a practice that's not trivial and for children."

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