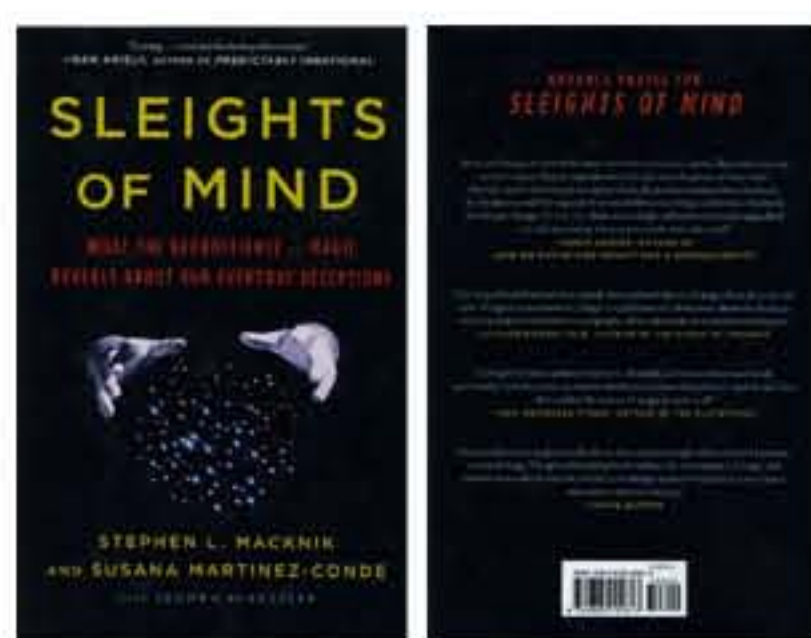


Sleights of Mind book signing, presentation

On February 24, 2011, in Brain, Neuroscience, by Steve Stockdale



Yesterday (February 23) I attended the book signing and presentation by the authors of *Sleights of Mind: What the Neuroscience of Magic Reveals About Our Everyday Deceptions* – Stephen L. Macknik and Susana Martinez-Conde with Sandra Blakeslee.

Stephen and Susana have previously publishes articles on the subject of magic and neuroscience in *Scientific American* and an excerpt from the book appeared in last November's *Scientific American*

Mind. Their work was featured earlier this month on PBS's *NOVA Science Now* with Neil deGrasse Tyson. The website for the book is www.sleightsofmind.com.

Sandra is co-host of the *Santa Fe Science Writing Workshop* with George Johnson. George is currently working on a book about the history of cancer, *The Cancer Chronicles*. Sandra has collaborated on previous books about the brain and neuroscience including *Phantoms in the Brain* (with V.S. Ramachandran), *On Intelligence* (with Jeff Hawkins), and *The Body Has a Mind of its Own* (with her son Matthew Blakeslee).

Some notes:

- Stephen and his wife Susana are affiliated with the Barrow Neurological Institute.
- They define *illusion* as a subjective perception that doesn't match the real world.
- Aristotle is credited with the first account of someone experiencing such an illusion after peering at a waterfall, then suddenly shifting his gaze to nearby rocks, which seemed to be moving upward.
- They distinguished among three different types of illusions:
 - **optical**, which result from external physical properties of light (such as refraction evident when you place a straw in a glass of water) ;
 - **visual**, which result from internal neurological constructions of the brain and the brain's imperfect processing of sensory data;
 - **cognitive**, which involve higher level processes exploited by magicians, especially misdirection.
- They further distinguished two types of misdirection as practiced by magicians, **overt** (in which the magician intentionally directs the subjects' attention to an area, such as pointing or looking) or **covert** (in which the magician attempts to redirect the subjects' attention in more subtle ways, such as engaging in conversation, humor, eye contact, and other types of misdirections exploiting cognitive misdirection).
- Two examples of covert misdirections discussed and demonstrated during the presentation were change blindness and inattention blindness.
- They showed several funny-to-hilarious video clips that illustrate such techniques, including these available on YouTube:
 - change blindness – http://www.youtube.com/watch?v=vBPG_OBgTWg
 - inattention blindness – <http://www.youtube.com/watch?v=ubNF9QNEQLA> and <http://www.youtube.com/watch?v=Ahg6qcg0ay4> [NOTE: This second clip is similar to a different video illustrating the same effect used by neurobiologist Christof Koch at the 2005 J. Robert Oppenheimer Memorial Lecture, which with his permission I have posted [here](#).]
- They discussed the physiological limitations of the human visual system, such as our very narrow field of focus (less than 1% of our of our field of view) with a significant drop-off of acuity beyond that narrow cone. They showed a clip of the “gentleman thief” Apollo Robbins, master pickpocket, who also worked with them on the book.
- Their “Take Aways” from the presentation:
 - Multi-tasking is a myth, so don't text and drive or even talk on the phone while driving; reduce distractions in the workplace (such as personal photos, mementos, stuffed toys, etc.); distractions result in missed opportunities.
 - “Disarm with Charm” – all magicians work hard to develop pleasing, enjoyable personalities, they want the audience to want them to succeed, which then facilitates the audience's cooperation in the illusion; this is an important lesson for authority figures such as managers and teachers who want to engender “buy in” from their subordinates.
 - What separates the great magicians from the others is the ability to smoothly recover from missteps, when things don't go according to the script. This lesson can be generalized to just about any profession or endeavor. I remember when I was going through Air Force navigator training 34 years ago, the instructor drilled into us from Day One that all navigators made mistakes. But the good ones recognized them and recovered from them sooner rather than later.
 - Attention enhances one small part of your world of experiences, while suppressing everything else. They discussed how this can be applied to major life decisions, suggesting that a decision-maker write down every single pro or con about the decision, no matter how small or trivial a factor. Then with the full list, go through each item and give your full attention and consideration to each in turn. As you complete this process, the deliberate attention and focus given to each items will better inform your intuition or “gut feeling” in making the decision. (My impression was they needed more time to fully develop this recommended take away.)
- Responding to Q&A:
 - Children are less susceptible to illusions and misdirection because they haven't developed their full complement of life experiences on which to base a set of expectations that magicians depend on. (In other words, the less-developed the brain is, the less susceptible it is to being intentionally manipulated or fooled, as I understand it.)
 - Children with autism have also demonstrated a much higher resistance to misdirection, which may offer some clues for research.
 - I asked if they had any take-aways that applied specifically to education. They replied “absolutely” and listed: 1) teachers should organize lessons around learning one major point and use various techniques to prepare students for that point (i.e., to focus their attention) and then clearly make that point and reinforce that point; 2) teachers need to be cognizant of social attention cues for commanding attention and focus, such as using voice and gesturing techniques; and 3) teachers need to actively try to evoke empathy from the students as the magicians try to evoke from their subjects, in terms of getting the students attention focused on them to the degree that students want the teacher to succeed, which means they will become more engaged with the actual teaching.

I haven't read the book yet but I'm looking forward to it. They're also on Facebook at <http://www.facebook.com/home.php?#!/pages/Sleights-of-Mind/127433953940275>.

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