

Now You See It, Now You Don't by ~Strange-Aeons9999

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Now You See It, Now You Don't

A man stands on a stage, displaying his hand for the audience to see. It is empty. There is a sense of expectation amongst the crowd. With a flick of his hand, the man on the stage produces a dove out of thin air. The crowd applauds, and the man smiles and bows, for he has just broken the laws of physics. Of course, he hasn't. Rather, he has given the appearance of breaking the laws of physics. He has performed what we call an illusion. Illusions have a long history in philosophy, occultism, and the art of conning. More recently they have taken their place among the ranks of subjects studied by psychologists. Illusions have been used in experiments to further our understanding of the human perceptual processes. This, in turn, helps us to understand how we interact with our environment.

Perception is defined as the selection, organization, and interpretation of sensations. Sensation is the process whereby we detect energy from the environment and encode it as neural signals (Myers, 197). All species have evolved various sensory thresholds specially suited to their survival. Humans, for example, have a sensitivity to sounds that are within the range that the human voice or baby's cries will make (Myers, 198). What we perceive influenced by a number of factors, including the strength of the signal we are attempting to detect, and our psychological state (Myers, 197).

This article will focus on a particular form of illusions, known as magic tricks. There are many types of magic tricks: visual illusions, optical illusions, cognitive illusions, special effects, and secret devices or gimmicks (Maknic, King, Randi, Robbins, Teller, Thompson, Martinez-Conde). Perhaps the most interesting types of illusions used in magic tricks are cognitive illusions. Magicians use the term "misdirection" to explain these types of illusions, and many magicians will attest to the efficacy of misdirection in their tricks. Indeed, misdirection is often touted as the most important element of any good magic trick. There are two types of misdirection, overt and covert. Overt misdirection is used when the magician draws the gaze (and thus attention) of his audience away from where the trick is being carried out. An example of this is the coin drop; the magician will hold a coin in one hand, and with the other, it will appear that he takes the coin. He will focus his gaze on the hand that appears to be carrying the coin. He will then open his hand, revealing it to be empty. In reality, it is still in the same hand it started in (Gilbert, Rydell). The secret to this trick is knowing that the audience will follow the magicians' gaze; people tend to watch where others are watching.

Covert misdirection is more complex. In this form of misdirection, the magician "draws away the spectators' attentional spotlight (which can be thought of as the spectators focus of suspicion) away from the method without redirecting the spectators gaze" (Maknic, King, Randi, Robbins, Teller, Thompson, Martinez-Conde). This involves two concepts familiar to cognitive psychologists, change blindness and inattention blindness. Change blindness describes the process whereby the viewer is unable to perceive when something is different from the way it was before (Maknic, King, Randi, Robbins, Teller, Thompson, Martinez-Conde). An example of this is provided in "The Colour Changing Card Trick," presented by Quirkology.com and available on Youtube.com. In it, the magician changes the color of the cards' back. The audience is aware of this. However, he also changes the color of his shirt, his assistant's shirt, the background color, and the table color. However, these changes are carried out unnoticed, despite the fact that they are quite dramatic. This is because attention is drawn to the cards.

Inattention blindness describes the process in which the audience "fail[s] to notice an unexpected object that is fully visible in the display" (Maknic, King, Randi, Robbins, Teller, Thompson, Martinez-Conde). An example of this is the Vanishing Ball trick. In this trick, the magician throws a ball into the air and catches it several times, following the trajectory of the ball with his gaze. Finally, he makes the movement of throwing the ball, while keeping it in his hand. The ball appears to spectators to rise into the air and vanish. Studies have shown that the effect is caused by social cues; similar to the Coin Drop, the magician's gaze is of primary importance in this trick (Maknic, King, Randi, Robbins, Teller, Thompson, Martinez-Conde). The audiences' "attentional spotlight" is effectively misdirected to perceive the ball as moving and vanishing, despite that it remains in plain sight in the magician's hand.

These insights gleaned by psychologists only scratch the surface of the psychology of magic tricks. Magicians have for centuries intuitively understood a great deal of human psychology. The fact that magic tricks have been used to enhance religious belief, to create a sense of wonder, and to con also indicates a deep understanding of human behavioral and motivational processes as well. Based on these initial findings, it is logical to assume that if psychologists were to continue their study of magic tricks we would not only gain far more insight into perception, but also some of the most basic and important aspects of the human psyche.

Meyers, David G. (2007). Psychology. New York, NY: Worth Publishers

Macknik, Stephen L., & King, Mac, & Randi, James, & Robbins, Apollo, & Teller, & Thompson, John, & Martinez-Conde, Susana. 30 July, 2008. Attention and Awareness in Stage Magic: Turning Tricks into Research. Nature. Retrieved from <http://www.nature.com/nrn/journal/vaop/ncurrent/full/nrn2473.html>

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Author's Comments

I wrote this for my Psychology class, and afterward gave a presentation on the same subject matter. I regard this as more of a starting point than a final word on the subject. There is a tremendous amount of information here that could be elaborated, but for now this will do. I hope it incites a sense of wonder!

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