

BRAIN, MIND, CONSCIOUSNESS AND LEARNING

SUNDAY, AUGUST 10, 2008

Brain Magic and Neuroscience

Brain as a physical organ system serves the role of controller of all the body functions. It communicates with different parts of the body by sending and receiving messages through an elaborate network of interconnected Neurons. This is the fastest communication system human body uses alongwith the slow communication system through hormonal interchange.

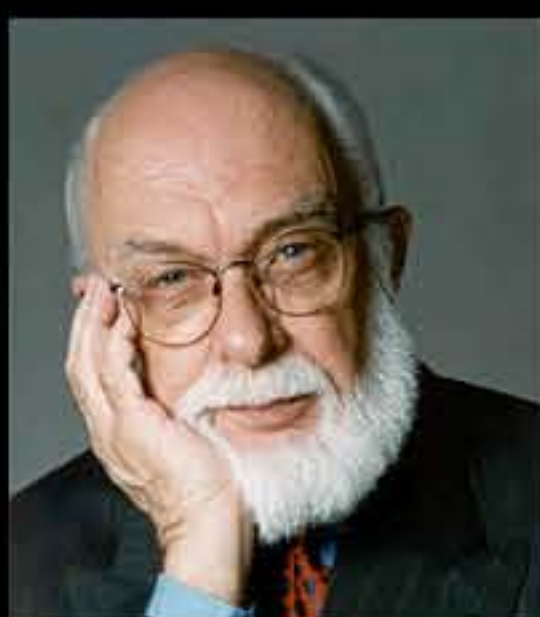


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One of the functions of the brain is to receive outside information through the five senses of vision, sound, smell, taste and touch and create a worldview for us out of this sensory data. The vision is the most dominant sense and plays a larger role in this process. It helps us in identifying objects. It helps us moving through the space and also to avert any potential dangers. In other words it has served us well. We rely on it.

Is it really hundred percent accurate? We would think that that is the case but that worldview is not hundred percent accurate. The magicians have devised elaborate tricks to deceive our visual sense. They use sleigh of hand to create an illusiory reality that defies our common sense but appears to be true. In most of the cases magicians use the quirks of the human vision system to design the magic tricks beside the older tricks based upon hypnotism. That itself is based upon the highly suggestible nature of human mind.

Here is a demonstration of some of these tricks by Magician Keith Barry at TED talk to show that how easy it is to trick the human mind in making it believe in alternate reality.

First, Keith Barry shows us how our brains can fool our bodies -- in a trick that works via podcast too. Then he involves the audience in some jaw-dropping (and even a bit dangerous) feats of brain magic.

Study of Optical Illusion is a well known area of Psychology. The psychologists have designed all kind of visual illusion to study the property of vision. Here is a list of some of the well known visual illusion designed by Psychologists. From these studies one can draw a general conclusion that our sense of vision is essential but it is not perfect as we would like to think. It could provide us with wrong conclusion and it can be manipulated or tricked into believing something that may or may not be true.

Recently neuroscientists collaborated with magicians and reported their findings in Nature Reviews Neuroscience journal. The article is available online here with the following title:

Attention and awareness in stage magic: turning tricks into research

authors: Stephen L. Macknik¹, Mac King, James Randi², Apollo Robbins, Teller, John Thompson & Susana Martinez-Conde

The article abstract:

Just as vision scientists study visual art and illusions to elucidate the workings of the visual system, so too can cognitive scientists study cognitive illusions to elucidate the underpinnings of cognition. Magic shows are a manifestation of accomplished magic performers' deep intuition for and understanding of human attention and awareness. By studying magicians and their techniques, neuroscientists can learn powerful methods to manipulate attention and awareness in the laboratory. Such methods could be exploited to directly study the behavioural and neural basis of consciousness itself, for instance through the use of brain imaging and other neural recording techniques.

The study is very important in the sense that it brings knowledgeable people from two diverse areas of neuroscience and magic together to solve the riddle of the human cognition.

The last sentence of the study's abstract is I think a bit of a stretch because we are really not sure what constitute consciousness. It will be a while till we piece all the information from scientific studies together to establish a one unified theory of consciousness if possible because there is a very strong possibility that we may end up not one but many consciousnesses fulfilling the demands placed upon us to survive in a dynamic world.

These studies does however, show that we do not possess perfect senses. We need to be extra careful when we are trying to base our decisions on the information we receive from ours senses.

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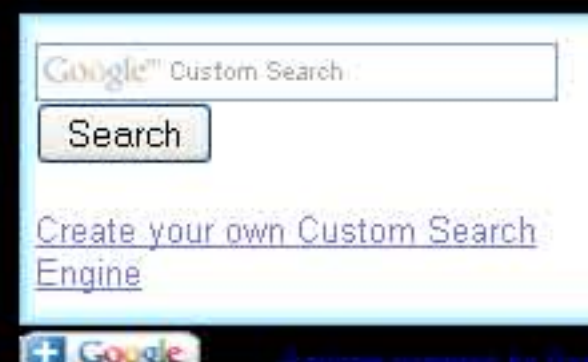


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