

# Science on the road

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## Magic, illusions and the mind

December 11th, 2008 · No Comments  
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Magicians have exploited people's limited perceptions for years.

So, we're going to play a game, all in the name of science of course!

Is it possible to read your mind? Let's have some fun and find out!

Choose one card from cards pictured below but DONT click on any cards with the mouse!

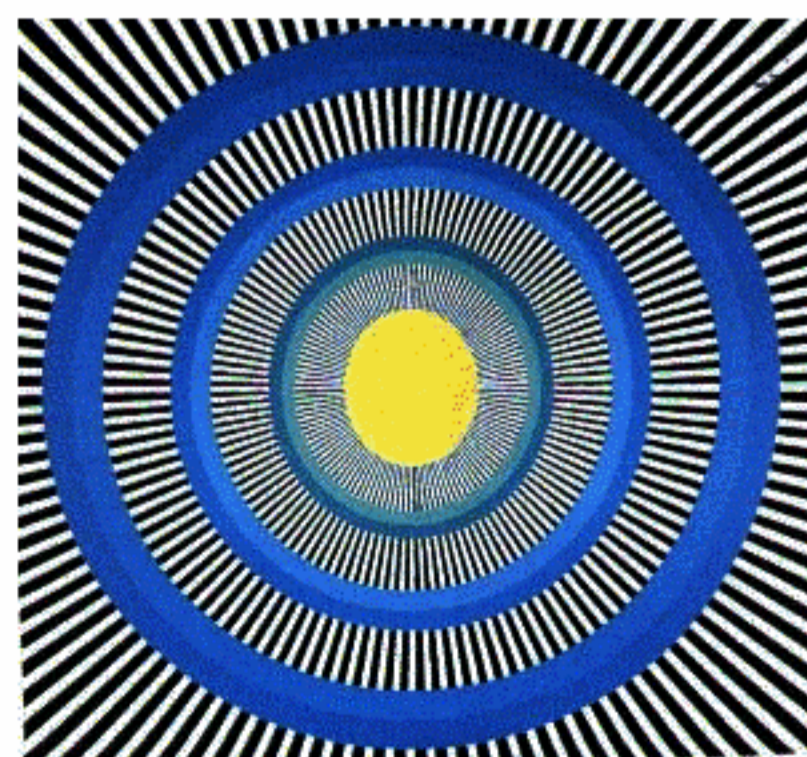


Now, say your chosen card's name aloud 5 times so you won't forget it. We will now attempt to read your mind and try to remove your selected card from the card series. To do so, we need you click on one of the following images, which will bring up our website to complete the task:



The above 'magic trick' is all about taking advantage of your brain and eye's ability to perceive reality. This 'magic trick' is based on distraction and 'change blindness', a phenomenon where people miss changes despite them being plainly visible. You know if you have suffered 'change blindness' if going back through the steps will only provide the answer. Change blindness can occur even when a change is expected. All that is needed is the change to occur during a blink, a slight involuntary eye movement (known as a saccade) or just a flicker in the scene itself. Psychologists that study change blindness have found even big obvious changes can sometimes be invisible until you take another look. Check out the [brilliant video](#) by Richard Wiseman of the University of Hertfordshire to see change blindness in action.

The question now for researchers is to why various magic tricks involving misdirection or inattention work, specifically, what is happening with the neurons in the brain to achieve the cognitive illusions we see at a magic show. Why might we want to do this? Exploring the neurons responsible for attention and awareness will gain insights into patients suffering from specific conditions such as brain trauma, Alzheimer's disease, ADHD (attention-deficit hyperactivity disorder) or even just very clever people who aren't fooled by casual magic tricks. Moreover, not only can we study the brain structures and functions but illusions can also give insights into how the eye itself works. Look at the illusion below:



You may see a 'flowing' effect as you look towards the centre of the circle. Researchers have shown that it is not so much as the brain causing the illusion but more the small involuntary movements of the eye (microsaccades) that occur when you look at an object.

Scientists have a bit of a way to go when it comes to being master magicians. Still, this avenue of research might provide a fruitful way of probing into conscious and sub-conscious awareness. Our bet is that magicians may want to hold onto their secrets just a little longer.

By the way, in the next newsletter we will publish the percentages of people who select the specific coloured birds; an experiment itself in colour and spatial preferences.

Information sourced from:

Conde, S. & Macknik, S. (2008) *Magic and the Brain* Scientific American, New York.

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