# Researcher uses card trick to reveal unconscious knowledge 

November 17 2011, by Bob Yirka

(Medical Xpress) -- Spanish neuroscientist Luis Martínez of the Institute of Neurosciences in Alicante, has shown that an exception exists regarding "change blindness" and it can be demonstrated by using a simple card trick known as the Princess Card Trick. In the trick, the "magician" shows the viewer five cards and asks them to mentally pick one. They are instructed to not say which it is. The magician then turns the deck over, shuffles it a little bit, then removes one card from the deck and lays it face down on the table. The remaining cards are then turned back over and shown to the viewer, who finds that the card they mentally picked is now missing.

The trick works because the viewer fails to notice that the first deck has been "replaced" by another as it was being turned over; none of the cards in the second deck match the first (the blindness part), thus it appears that the card that was removed was the one chosen. But, this is just the first part of the experiment. Martínez wants to know if the viewer really did see those first cards or not. So, what's really going on here is a means to force the viewer to focus individually on each card in the first deck. This is because the second part of the experiment involves pulling out two new cards one of which is identical to one of the cards in the first deck and asking the viewer to identify which of the two was in the first deck. Upon being shown, most viewers say they don't know. But when forced to choose, $80 \%$ of viewers pick the right card, and that's where the subconscious mind has itself played a trick. It's taken in a lot more of the information than the viewer realized and then showed its hand so to speak, only when pressed.

Martinez presented his findings at this past week's annual meeting of the Society for Neuroscience where he also explained that the trick can be shown in other ways, such as with faces in photographs. Viewers shown a photograph of a male face were later asked to view a group of several photographs of men's face and were asked to say whether they original face was among them. Most people found it difficult to say, but when forced to choose, were again very likely to pick the right one from the stack.

Martínez says the whole process can be thwarted however, if viewers are distracted by say, a magician chattering away the whole time he is performing the trick. Such chatter appears to prevent the subconscious mind from seeing all the things it would were the chatter not going on. Or maybe it's more that it sees it, but cannot file it away in memory.

There's one more trick here, in the Princess Card Trick, and that is how the decks are switched. In reality, they're not. What happens is that a trick deck is used with four of the five cards having different suits (diamond, heart, etc.) stamped on their corners which are then displayed by showing just the top, or just the bottom part of the cards. The fifth one is the only one shown in full.

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