

Now you see it, now you know you see it

November 30 2009

There is a tiny period of time between the registration of a visual stimulus by the unconscious mind and our conscious recognition of it — between the time we see an apple and the time we recognize it as an apple. Our minds lag behind our eyes, but by how long? And how does this affect our reactions to the world around us?

Some estimates say the time delay lasts only 100 milliseconds, others say 500 milliseconds. A new study by Tel Aviv University psychologists says that the answer is somewhere close to the latter, but can vary depending on the complexity of the stimulus.

Researcher Moti Salti and his supervisors Dominique Lamy and Prof. Yair Bar-Haim of TAU's Department of Psychology reported their findings in the *Journal of Cognitive Neuroscience*.

"We are hunting for the brain activity associated with conscious perception," says Salti. "When you wander through this world, you see and hear things that may reveal themselves to your conscious mind — and others that don't. We are interested in what cues the brain gives us to open that unconscious perception to the conscious mind -- what makes our conscious mind tick."

A conscious connection

This basic science, Salti says, won't immediately provide marketers with the basis for a new and advanced kind of subliminal advertising. But it may answer long-debated questions about the mysterious nexus between

our conscious and unconscious minds.

In their study, the researchers measured neural activity related to conscious perception. They connected test subjects to an electroencephalograph (EEG) that measured their brain activity, then exposed them to rapid visual stimuli — square cubes on a computer screen that flashed on and off very quickly. Participants were instructed to indicate whether they had seen the stimulus and to report its location on the screen.

Some participants were able to identify where the stimulus appeared, but could not identify it as a square cube, allowing the researchers to explore how [brain activity](#) correlated with conscious perception.

Finding what the eyes can't see

The study sought to map what the eyes do not "see," but the brain or unconscious mind registers. The EEG data showed that the conscious mind kicked in about a half second -- 300 to 400 milliseconds — after exposure to the stimulus.

"The time it takes for the conscious mind to kick in depends on the complexity of the stimulus," says Salti. "The more complex the stimuli -- like eye color or words written on a passerby's T-shirt — the longer the conscious mind will delay. Our new discovery isn't only about timing this effect, but also about using unconscious perception as a tool for studying consciousness."

Until about 20 years ago, science neglected the field of consciousness, saying it was too subjective for precise scientific examination. Now the very complexity of the problem encourages young psychologists to study the mystery of consciousness; they argue that the conscious mind is a "splendor of creation" and helps us understand humanity itself.

Salti is about to begin a post-doctorate study position at INSERM in France, the European equivalent of America's National Institutes of Health, under Prof. Stanislas Dehaene.

Source: Tel Aviv University ([news](#) : [web](#))

Citation: Now you see it, now you know you see it (2009, November 30) retrieved 18 April 2024 from <https://medicalxpress.com/news/2009-11-now-you-it.html>

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