

Psychologists discover we've been underestimating the unconscious mind

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(Medical Xpress) -- What does consciousness do? Theories vary, but most neurologists and cognitive psychologists agree that we need awareness for integration. That is, unconscious processing can take in one object or word at a time. But when it comes to pulling together disparate stimuli into a coherent, complex scene, consciousness gets to work.

Now, new research by four Israeli psychologists-Liad Mudrik and Dominique Lamy of Tel Aviv University, and Assaf Breska and Leon Y. Deouell of Hebrew University of Jerusalem-suggests that scientists have been underestimating the abilities of the unconscious mind. "Integration can happen even when we're unaware of the stimulus," says Mudrik. "Unconscious processes are much more sophisticated and deeper than was previously believed."

The findings will be published in the June issue of *Psychological Science*, a journal of the Association for Psychological Science.

To test this idea, the researchers put their subjects-18 men and women with normal vision-before a stereoscope, which allows [stimuli](#) to be introduced to each eye separately. In one eye, "Mondrians"-changing patterns of color blocks-continuously flashed, suppressing perception of other objects. In the other eye the subjects saw images of people interacting with objects. Some scenes were "congruent": a woman putting food in an oven; a player handling a basketball. Others were "incongruent": the woman putting a chessboard in the oven; the player

holding a watermelon. The pictures were present during the entire viewing, but increased in contrast over several seconds, as the Mondrians grew fuzzier in the background.

The participants were instructed to press one of two buttons as soon as they detected the hemi field, or side of the one eye's vision, in which the picture appeared. The experimenters compared the time participants took to respond to congruent versus incongruent scenes.

The incongruent scenes broke through the visual noise and came into awareness significantly faster than the congruent ones.

Why? "During unconscious processing, subjects are able to integrate object and background without the need for awareness," Mudrik explains. "When the integration of the incongruent scene happens, though, it doesn't make sense." That's not a cookie sheet. It's a chessboard! "Then [consciousness](#) is recruited to make sense of an integration that does not come out properly."

The research, says Mudrik, is rich with potential. In terms of theory, it "opens the gate" to a new understanding of the complex functioning of awareness.

But it also has implications for daily life. "These findings give us information about the resources we allocate to everyday actions. Say you are driving and talking on a cell phone. What we've shown is that you are doing some unconscious processing; we can perform many quite sophisticated actions at one time.

"But we have to bear in mind that this only works as long as things go according to plan. When things go wrong-say, a child runs into the road-our unconscious system cannot deal with it." In other words, it's wise to keep some perceptual resources in reserve for those novel situations,

whether they are life threatening or simply weird.

Provided by Association for Psychological Science

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