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Researchers use neuroimaging to study ESP

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Psychologists at Harvard University have developed a new method to study extrasensory perception that, they argue, can resolve the century-old debate over its existence. According to the authors, their study not only illustrates a new method for studying such phenomena, but also provides the strongest evidence yet obtained against the existence of extrasensory perception, or ESP.

The research was led by Samuel Moulton, a graduate student in the department of psychology in the Faculty of Arts and Sciences at Harvard University with Stephen Kosslyn, John Lindsley Professor of Psychology at Harvard and was published in the Jan. 2008 issue of the Journal of Cognitive Neuroscience. The scientists used brain scanning to test whether individuals have knowledge that cannot be explained through normal perceptual processing.

"If any ESP processes exist, then participants' brains should respond differently to ESP and non-ESP stimuli," explains Moulton. “Instead, results showed that participants’ brains responded identically to ESP and non-ESP stimuli, despite reacting strongly to differences in how emotional the stimuli were and showing subtle, stimulus-related effects.”

Nearly half of the adults in the United States believe in the existence of ESP, which includes telepathy (direct knowledge of another person's thoughts), clairvoyance (direct knowledge of remote events), and precognition (direct knowledge of the future). People commonly report unexplained knowledge of a loved one's death or a telephone caller's identity, for example, and attribute this knowledge to paranormal mental

processing.

The U.S. government lent credence to such claims when it revealed that it had spent millions of dollars recruiting and training psychic spies during the Cold War. Furthermore, research studies have been reported that appear to support the existence of ESP, including an influential series of experiments analyzed by psychologist Daryl Bem of Cornell University. These studies, however, gave little insight into the mechanisms -- normal or paranormal -- that produced the anomalous results. Perhaps more telling, others failed to replicate these results.

To develop a better test of ESP, the authors decided to develop a new method, which directly addressed the presumed source of ESP: namely, the brain. They argue that because the brain enables perception and stores information -- even events people don't consciously perceive or information they can't consciously remember -- it can offer a much more comprehensive test for ESP than self-report or behavior.

"The brain shows a suppressed response to stimuli that a person has seen before, even when those stimuli were presented subliminally, so the person wasn't consciously aware of having seen them; furthermore, it shows an enhanced response to stimuli that a person is expecting," says Moulton. "Because knowledge and expectation bias brain activation, neuroimaging offers us a uniquely powerful test of subtle perceptual or cognitive processes."

To study whether or not ESP exists, Moulton and Kosslyn presented participants with two types of visual stimuli: ESP stimuli and non-ESP stimuli. These two types of stimuli were identical with one exception: ESP stimuli were not only presented visually, but also were presented telepathically, clairvoyantly, and precognitively to participants.

To present stimuli telepathically, the researchers showed the photographs

to the participants' identical twin, relative, romantic partner, or friend, who was seated in another room. To present stimuli clairvoyantly, the researchers displayed the photographs on a distant computer screen. And to present stimuli precognitively, the researchers showed participants the photographs again in the future.

Does this conclusively prove that ESP does not exist" "No," says Moulton. "You cannot affirm the null hypothesis. But at the same time, some null results are stronger than others. This is the best evidence to date against the existence of ESP. Perhaps most important, this study offers scientists a new way to study ESP that avoids the pitfalls of past approaches."

Source: Harvard University

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