

# Weird Science

Unorthodox beliefs require replicable evidence

Ronald Bailey -- March 17, 2004

<http://www.reason.com/news/show/34782.html>

I failed a test for precognition when I was an undergraduate at the University of Virginia. The test involved predicting which cards would appear next in a randomly shuffled deck. I guess I should have known — or perhaps I shouldn't have known? Of course, you've heard all the jokes: If phone psychics really know what's going to happen, shouldn't they call their clients rather than wait for their clients to call them? And whoever believes in psychokinesis, please raise my hand.

Still, a 2001 Gallup poll found that Americans continue to be credulous about the reality of psychic phenomena. About half of all Americans believe in psychic healing and extrasensory perception (ESP), and around a third believe in ghosts, telepathy, and clairvoyance.

Notoriously, during the Cold War, the CIA and the KGB both had programs researching paranormal abilities like "remote seeing" and telepathy. It should be noted that a 1995 study of the Department of Defense's STAR GATE remote viewing program done by the American Institutes for Research concluded:

"[T]he information provided by remote viewing is vague and ambiguous, making it difficult, if not impossible, for the technique to yield information of sufficient quality and accuracy...for actionable intelligence. Thus, we conclude that continued use of remote viewing in intelligence gathering operations is not warranted."

Research into paranormal phenomena is still ongoing at places like Princeton University and the University of Edinburgh, as well as various institutes like the Rhine Research Institute in Durham, North Carolina. Some professors like the University of Arizona's Gary Schwartz host "spoon bending parties" where undergraduates allegedly deform flatware using their mental powers.

The New Scientist takes a fair-minded look into the controversy over the paranormal in its March 13 issue with a Parapsychology Special (which is unfortunately available only to subscribers). One article focuses on the results for tests for micro-PK, Ganzfeld viewing, and telekinesis.

Micro-PK is psychokinesis in which subjects try to influence microscopic events like the diffraction patterns of beams of photons or the output of random number generators. For example, the Princeton Engineering Anomalies Research (PEAR) lab runs experiments in which participants try to influence random number generators. PEAR director Robert Jahn's analysis of all his studies finds that participants can mentally influence random number generators. Jahn calculates that the probability of getting the same results by chance are less than 0.00007.

Still, according to the New Scientist, most micro-PK experiments fail to show results. For example, Stanley Jeffers of York University in Canada, using a different random number

generator, found no effect. Even Jahn himself, collaborating with German researchers, could not reproduce his earlier results.

A Ganzfeld test helps assess your ESP. In one typical experiment a "sender" views one of four randomly chosen videotapes and tries to mentally project what he is seeing to an isolated "receiver." The receiver later views all four tapes and chooses the one he thinks he was being sent. Other ESP tests involve such things as "remote staring," where a participant is monitored for that back-of-neck-feeling when an experimenter randomly stares at them through a video monitor.

The latest meta-analysis of 40 Ganzfeld studies yielded "an overall hit rate of 30.1 percent" when the chance result would be 25 percent. The New Scientist noted that this is a "significant result," while nevertheless pointing out that other analyses conclude that the results are within the bounds of chance. Finally, a meta-analysis of 40 remote-staring studies reported a "small, yet significant deviation from chance," according to the New Scientist. However, when the meta-analysis was restricted to only the highest-quality studies, the effect disappeared.

Most studies of paranormal effects, then, find that they are not very robust; research results are often on the knife-edge of statistical significance, and can appear and disappear capriciously. There is also the believer effect: researchers who believe in the paranormal regularly find effects, while those who are skeptical do not. Perhaps science has an explanation for believers in psychic phenomena — excess dopamine in their brains causes them to overidentify patterns in random data. To be fair, non-believers in psychic phenomena also find what they expect to find. But then again, they are not making claims about extraordinary phenomena.

What would convince skeptics that there are paranormal phenomena like remote viewing and clairvoyance? In a word, "replication." One may be skeptical that photons can act like waves, yet the double-slit experiment showing this effect can be replicated on demand by anybody. If just thinking at them could reliably bend photon beams for all researchers, then there really would be something to study. Until experimental replication without a lot of fancy statistical massaging occurs regularly, research on the paranormal will and should remain on the fringes of science.

Besides, normal science produces real miracles everyday. Who needs remote seeing when we have satellites and handheld video cameras, or telepathy in a world filled with cell phones?