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## Is this evidence that we can see the future?

By Peter Aldhous



The future predicted now

(Image: 20th Century Fox)

Extraordinary claims don't come much more extraordinary than this: events that haven't yet happened can influence our behaviour.

Parapsychologists have made outlandish claims about precognition – knowledge of unpredictable future events – for years. But the fringe phenomenon is about to get a mainstream airing: a paper providing evidence for its existence has been accepted for publication by the leading social psychology journal.

What's more, sceptical psychologists who have pored over a preprint of the paper say they can't find any significant flaws. "My personal view is that this is ridiculous and can't be true," says Joachim Krueger of Brown University in Providence, Rhode Island, who has blogged about the work on the *Psychology Today* website. "Going after the methodology and the experimental design is the first line of attack. But frankly, I didn't see anything. Everything seemed to be in good order."

## Critical mass

The paper, due to appear in the *Journal of Personality and Social Psychology* before the end of the year, is the culmination of eight years' work by Daryl Bem of Cornell University in Ithaca, New York. "I purposely waited until I thought there was a critical mass that wasn't a statistical fluke," he says.

It describes a series of experiments involving more than 1000 student volunteers. In most of the tests, Bem took well-studied psychological phenomena and simply reversed the sequence, so that the event generally interpreted as the cause happened after the tested behaviour rather than before it.

In one experiment, students were shown a list of words and then asked to recall words from it, after which they were told to type words that were randomly selected from the same list. Spookily, the students were better at recalling words that they would later type.

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In another study, Bem adapted research on "priming" – the effect of a subliminally presented word on a person's response to an image. For instance, if someone is momentarily flashed the word "ugly", it will take them longer to decide that a picture of a kitten is pleasant than if "beautiful" had been flashed. Running the experiment back-to-front, Bem found that the priming effect seemed to work backwards in time as well as forwards.

## 'Stroke of genius'

Exploring time-reversed versions of established psychological phenomena was "a stroke of genius", says the sceptical Krueger. Previous research in parapsychology has used idiosyncratic set-ups such as Ganzfeld experiments, in which volunteers listen to white noise and are presented with a uniform visual field to create a state allegedly conducive to effects including clairvoyance and telepathy. By contrast, Bem set out to provide tests that mainstream psychologists could readily evaluate.

The effects he recorded were small but statistically significant. In another test, for instance, volunteers were told that an erotic image was going to appear on a computer screen in one of two positions, and asked to guess in advance which position that would be. The image's eventual position was selected at random, but volunteers guessed correctly 53.1 per cent of the time.

That may sound unimpressive – truly random guesses would have been right 50 per cent of the time, after all. But well-established phenomena such as the ability of low-dose aspirin to prevent heart attacks are based on similarly small effects, notes Melissa Burkley of Oklahoma State University in Stillwater, who has also blogged about Bem's work at *Psychology Today*.

## Respect for a maverick

So far, the paper has held up to scrutiny. "This paper went through a series of reviews from some of our most trusted reviewers," says Charles Judd of the University of Colorado at Boulder, who heads the section of the *Journal of Personality and Social Psychology* editorial board that handled the paper.

Indeed, although Bem is a self-described "maverick" with a long-standing interest in paranormal phenomena, he is also a respected psychologist with a reputation for running careful experiments. He is best known for the theory of self-perception, which argues that

people infer their attitudes from their own behaviour in much the same way as they assess the attitudes of others.

Bem says his paper was reviewed by four experts who proposed amendments, but still recommended publication. Still, the journal will publish a sceptical editorial commentary alongside the paper, says Judd. “We hope it spurs people to try to replicate these effects.”

One failed attempt at replication has already been posted online. In this study, Jeff Galak of Carnegie Mellon University in Pittsburgh, Pennsylvania, and Leif Nelson of the University of California, Berkeley, employed an online panel called Consumer Behavior Lab in an effort to repeat Bem’s findings on the recall of words.

Bem argues that online surveys are inconclusive, because it’s impossible to know whether volunteers have paid sufficient attention to the task. Galak concedes that this is a limitation of the initial study, but says he is now planning a follow-up involving student volunteers that will more closely repeat the design of Bem’s word-recall experiment.

This seems certain to be just the first exchange in a lively debate: Bem says that dozens of researchers have already contacted him requesting details of the work.

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