

Brain Chemistry & the Paranormal

From The New Scientist

Whether or not you believe in the paranormal may depend entirely on your brain chemistry. People with high levels of dopamine are more likely to find significance in coincidences, and pick out meaning and patterns where there are none.

Peter Brugger, a neurologist from the University Hospital in Zurich, Switzerland, has suggested before that people who believe in the paranormal often seem to be more willing to see patterns or relationships between events where skeptics perceive nothing.

To find out what could be triggering these thoughts, Brugger persuaded 20 self-confessed believers and 20 skeptics to take part in an experiment.

Brugger and his colleagues asked the two groups to distinguish real faces from scrambled faces as the images were flashed up briefly on a screen. The volunteers then did a similar task, this time identifying real words from made-up ones.

Seeing and believing

Believers were much more likely than skeptics to see a word or face when there was not one, Brugger revealed last week at a meeting of the Federation of European Neuroscience Societies in Paris. However, skeptics were more likely to miss real faces and words when they appeared on the screen.

The researchers then gave the volunteers a drug called L-dopa, which is usually used to relieve the symptoms of Parkinson's disease by increasing levels of dopamine in the brain.

Both groups made more mistakes under the influence of the drug, but the skeptics became more likely to interpret scrambled words or faces as the real thing.

That suggests that paranormal thoughts are associated with high levels of dopamine in the brain, and the L-dopa makes skeptics less skeptical. "Dopamine seems to help people see patterns," says Brugger.

Plateau effect

However, the single dose of the drug did not seem to increase the tendency of believers to see coincidences or relationships between the words and images.

That could mean that there is a plateau effect for them, with more dopamine having relatively little effect above a certain threshold, says Peter Krummenacher, one of Brugger's colleagues.

Dopamine is an important chemical involved in the brain's reward and motivation system, and in addiction. Its role in the reward system may be to help us decide whether information is relevant or irrelevant, says Françoise Schenk from the University of Lausanne in Switzerland.

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