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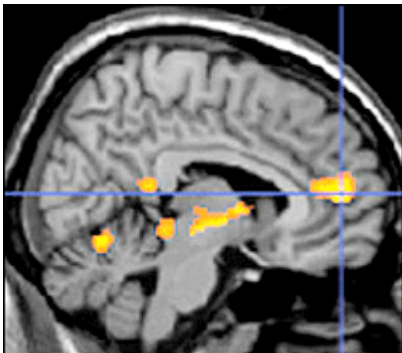
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Scans Show How Hypnosis Affects Brain Activity

By Sarah Graham

The word "hypnosis" tends to conjure up images of subjects partaking in silly activities they might not otherwise agree to. But over the past few decades, scientific study of hypnosis has begun to identify how the approach can work to alter processes such as memory and pain perception. According to a new report, hypnotic suggestions regulate activity in certain regions of the brain and can help it manage cognitive conflicts.

A well-known example of cognitive conflict involves a person trying to name the color of ink used to print letters that spell out a different color. For example, the word "blue" spelled out in red ink. It usually takes subjects longer to read out such a list than it does to read a list of color names written in matching colored inks. In previous work, Amir Raz and his colleagues at the Weill Medical College of Cornell University had illustrated that hypnosis could be used to reduce this conflict in highly hypnotizable individuals. In the new work, they used functional magnetic resonance imaging (fMRI) and readings from scalp electrodes to monitor brain activity while subjects completed the ink-naming task.



The researchers also gave the subjects a posthypnotic suggestion to interpret the colored words as gibberish, which presumably would allow them to focus more on the color of the ink instead of reading the word. Highly hypnotizable individuals had better accuracy and quicker reaction times compared to those previously identified as being less responsive to hypnosis. The imaging data indicated that the hypnotizable subjects showed reduced brain activity in both visual areas and the anterior cingulate cortex, which is involved in conflict monitoring. Thus, the authors conclude, the results "illuminate how suggestion affects cognitive control by modulating activity in specific brain areas."