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Cap could unlock hidden talents

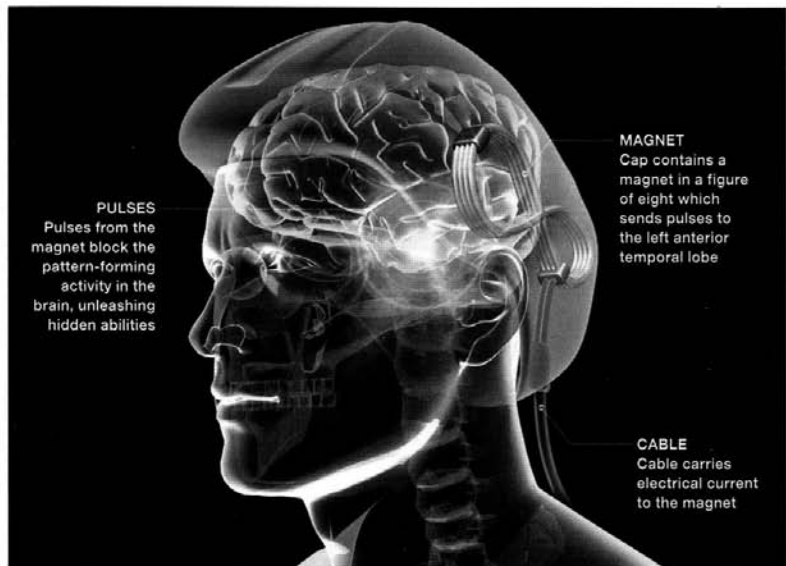
A 'thinking cap' that uses magnetic pulses to shut down part of your brain could unlock hidden talents. The cap, which is only in the early stages of development, has already proved to be successful at increasing volunteers' mathematical ability as well as improving their artistic skills.

Professor Allan Snyder, who developed the cap, says it works by blocking the area in the brain that lets people form patterns in the world around them, patterns that mean they can simplify their environment and act quickly. By preventing this pattern formation, which is usually helpful, it allows other abilities to be revealed. "It should work on everyone," says Snyder, director of the Centre for the Mind at the University of Sydney.

The idea for the cap was inspired by autistic savants, like Dustin Hoffmann's character Raymond Babbitt in the film *Rain Man*, who has extraordinary abilities. "Autistic savants have privileged access to raw sensory information before it's packaged into holistic concepts and meaningful labels," Snyder tells *Focus*. "Our brains make hypotheses about what is to be expected so that we can manoeuvre rapidly in a world with only partial information."

"There's lots of evidence that autistic savant-like behaviour can come from inhibition of the left anterior temporal lobes," says Snyder. "So we directed magnetic pulses, at one pulse per second for between 10 and 15 minutes, into the left anterior temporal lobe."

The results so far have been impressive – and more are expected to be published soon. "When the toothpicks were dropped [in the film *Rain Man*], Dustin Hoffman guesses the number that fall on the floor," says Snyder. When volunteers were briefly shown 100-150 dots on a screen,



PULSES
Pulses from the magnet block the pattern-forming activity in the brain, unleashing hidden abilities

MAGNET
Cap contains a magnet in a figure of eight which sends pulses to the left anterior temporal lobe

CABLE
Cable carries electrical current to the magnet

their ability to estimate the number rose rapidly after being zapped with the cap. "Before transcranial magnetic stimulation (TMS), they do poorly," says Snyder. "After TMS, eight out of 12 people did considerably better."

The cap's affects aren't permanent – the biggest hike in abilities is seen in the first 15 minutes after it has been worn. But is it dangerous? "It's a safe procedure," says Snyder. And it's not just mathematical abilities that improve, experiments have shown that volunteers' drawing also becomes more realistic.

Snyder is a co-founder of the electronics company Emotiv Systems, which is developing

mind-reading technology (*Focus*, August 2008). He believes that today's intelligence is less about knowing facts, and more about being able to see links between seemingly unrelated pieces of information. "Google has eradicated any need to worry about knowledge," says Snyder. "The sought-after person is someone who can look at a problem and see a new way of combining knowledge. What the 21st century calls for, and what [this] should be called in many ways, is a creativity cap."

The cap is still a work in progress, but its potential is enormous – especially for people making key decisions in the workplace.