

Using hypnosis to understand symptoms of disorders of thought

29 October 2014, by Dr Claire Hastings



Automatic writing is a phenomenon observed across different cultures throughout human history, often attributed to gods, spirits, angels and demons. The idea of automatic writing is illustrated by this pair of paintings by the Italian artist Caravaggio (1571-1610), that show Saint Matthew writing the Gospel under the guidance of an angel. In one painting, an angel guides the movements of St. Matthew's hand across the page. The second depicts the angel descending from on-high to guide the saint's thoughts.

Researchers from the Forensic and Neurodevelopmental Science Department at King's College London's Institute of Psychiatry, Psychology & Neuroscience (IoPPN) have identified a key region of the brain that gives us the sense that we control our own thoughts and movements.

Published in the journal *Cortex*, this is the first study to show that the [supplementary motor area](#) in the front of our brain has an important role in two common symptoms of mental health disorders – "thought insertion" and "alien control of movement" – in which thoughts and movements are felt to be under the remote control of someone else. The researchers wanted to find out what happens in

the brain during these experiences so that one day they may be able to offer new treatments to prevent them.

In order to study both thought insertion and alien control of movement, the researchers at King's, in collaboration with experts at Cardiff University and University College London, replicated a historical phenomenon known as "automatic writing" – where writing is produced by an individual without them being aware of producing it. Writing involves two separate processes – expressing thoughts in words and using hand movements to write the words down. Consistent with this, automatic writers often feel that someone is either placing thoughts in their minds or controlling their arm movement.

To replicate automatic writing, 18 healthy adult volunteers were given a writing exercise to complete under hypnosis, and told that an engineer was either "inserting thoughts into your mind" or "controlling your hand movements as you write". Their brains were monitored during hypnosis using the brain-scanning technique called fMRI, in order to find out what physiological changes occurred in the participants' brains whilst control of their thoughts and movements was taken away from them.

Dr Eamonn Walsh, Psychologist at the IoPPN at King's and lead author of the study, says: "Studying human thought has always been a real challenge for neuroscience. The brain's control of motion is relatively straightforward to study because you can see movement. You cannot, however, see thoughts and therefore very little is known about what physically happens in our brains when we think. Replicating automatic writing using hypnotic suggestion offers us a glimpse at the thought processes of the brain. These findings cast a small beam of light into the darkness surrounding our knowledge of the neurobiology of thought."

Dr Quinton Deeley, Consultant Psychiatrist and

Senior Lecturer in Social Behaviour and Neurodevelopment at IoPPN, King's College London, adds: "Hypnosis allows us to mimic symptoms experienced in many [mental health disorders](#) in healthy human volunteers, in a safe and controlled environment. Thanks to this research, we are now in a far better position to try to understand and help people who suffer from disorders of thought, such as occur in schizophrenia."

Dr Mitul Mehta, Reader in Imaging and Psychopharmacology at IoPPN, King's College London, says: "Activity in the front of the brain, in the supplementary motor area, was consistently reduced during both types of automatic writing, suggesting this area plays a major role in the sense that our [thoughts](#) and movements are ours and are under our control.

More information: Eamonn Walsh, David A. Oakley, Peter W. Halligan, Mitul A. Mehta and Quinton Deeley "The functional anatomy and connectivity of thought insertion and alien control of movement" published in *Cortex* : www.sciencedirect.com/science/.../S0010945214003037

Provided by King's College London

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