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INHIBITORY AND MONITORING CORTICAL NETWORKS DURING CONVERSION AND HYPNOTIC PARALYSIS IN FMRI

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Hypnosis may induce striking changes in consciousness and volition under the effect of particular suggestions. Popular theories often consider hypnosis as a state of consciousness where volition is abolished, while cognitive theories postulate that it involves inhibitory control processes mediated by frontal lobe areas. Moreover, since the time of Freud and Charcot, hypnotic effects have often been likened to the abnormal behaviour seen in some psychiatric disorders such as hysteria. However, the neural mechanisms of these different conditions and their putative relationships still remain unclear. By using functional neuroimaging methods in volunteers and patients, we can now identify specific changes in brain activity that underlie the behavioural and perceptual alterations observed during hypnosis and directly compare the latter with findings in hysteria conversion. Our recent results suggest both commonalities between these two conditions, as suggested by Freud and Charcot, but also clear differences that are consistent with modern views on hysteria and brain functions. Moreover, hypnosis appears to reflect a state of heightened self-control and monitoring, in agreement with some cognitive theories. This research does not only provide novel insights on how the human mind can regulate itself, but also help better understand the neural underpinning of hysteria, a condition standing at the frontiers of psychiatry and neurology since more than a century.