VIRTUAL LESIONS OF THE INFERIOR PARIETAL CORTEX INDUCE FAST CHANGES OF IMPLICIT RELIGIOUSNESS/SPirituality

Cristiano Crescentini\textsuperscript{1,2*}, Salvatore M. Aglioti\textsuperscript{2,3}, Franco Fabbro\textsuperscript{1}, and Cosimo Urgesi\textsuperscript{1}

\textsuperscript{1} Department of Human Sciences, University of Udine, Italy; \textsuperscript{2} Department of Psychology, University of Rome “La Sapienza”, Rome, Italy; \textsuperscript{3} Scientific Institute IRCCS Santa Lucia Foundation, Rome, Italy

Objectives: Religiousness and spirituality (RS) are two ubiquitous aspects of human experience typically considered impervious to scientific investigation. Nevertheless, associations between RS and frontoparietal neural activity have been recently reported. However, much less is known about whether such activity is causally involved in modulating RS or just epiphenomenal to them.

Methods: Here we combined two-pulse (10Hz) transcranial magnetic stimulation (TMS) with a novel, ad-hoc developed RS-related, Implicit Association Test (IAT) to investigate whether implicit RS representations, although supposedly rather stable, can be rapidly modified by a virtual lesion of inferior parietal lobe (IPL) and dorsolateral prefrontal cortex (DLPFC). A self-esteem (SE) IAT, focused on self-concepts nonrelated to RS representations, was developed as control.

Results and conclusions: A specific increase of RS followed inhibition of IPL demonstrating its causative role in inducing fast plastic changes of religiousness/spirituality. In contrast, DLPFC inhibition had more widespread effects probably reflecting a general role in the acquisition or maintenance of task-rules or in controlling the expression of self-related representations not specific to RS. Furthermore, converging evidence on the importance of the parietal cortex in RS come also from a sample of 12 patients with lesion to either parietal or frontal brain regions.

Publications:
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