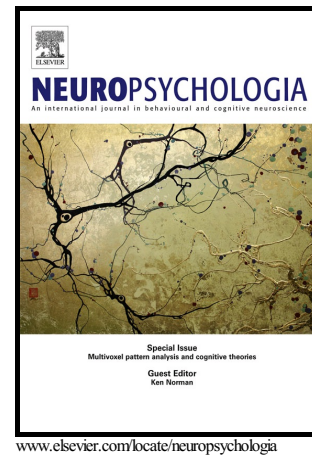


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# Modulation of sensorimotor circuits during retrieval of negative autobiographical memories: exploring the impact of personality dimensions

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## Abstract

Autobiographical Memory (AM) retrieval refers to recollection of experienced past events. Previous Transcranial Magnetic Stimulation (TMS) studies have shown that presentation of emotional negative stimuli affects human motor cortex excitability resulting in larger motor evoked potentials (MEPs). Up to date no TMS studies have been carried out in order to investigate the effect of personal memories with negative emotional value on corticospinal excitability. In this study we hypothesized that negative AM retrieval will modulate corticomotor excitability and sensorimotor integration as determined by TMS neurophysiological parameters. Furthermore, we investigated whether TMS responses during retrieval of negative AM are associated with specific personality traits.

Twelve healthy subjects were asked to recall either a negative or a neutral AM across two different days in a randomized order. During this memory retrieval, the following TMS parameters were recorded: MEPs; Short- interval intracortical inhibition (SICI) and

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<sup>1</sup> Ludovico Mineo and Carmen Concerto contributed equally to this work

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