

UNDERSTANDING ATYPICAL METACOGNITION AND TIME PERCEPTION IN HIGH HYPNOTIC SUGGESTIBILITY

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Background: A subset of the population is capable of experienced pronounced changes in behaviour and perception in response to suggestions. The neurocognitive and psychiatric profiles of these individuals are poorly understood.

Aims: This project sought to strengthen current understanding of the cognitive, neurophysiological, and psychiatric characteristics of highly suggestible individuals and clarify the extent to which hypnosis parallels other seemingly germane phenomena.

Method: Highly suggestible (or dissociative) individuals underwent resting state magnetoencephalography and completed psychophysical measures of intention awareness, interval timing, and metacognition of interval timing. A systematic review was undertaken to identify similarities and differences in timing in hypnosis, meditation, psychedelics, and state dissociation. A psychometric-behavioural study aimed to discriminate between models of dissociation and a meta-analysis was undertaken to estimate suggestibility in dissociative and functional neurological disorders.

Results: Highly suggestible were characterized by reduced functional connectivity between a medial prefrontal and a right frontal-parietal network, suggesting reduced frontal communication. Hypnotic suggestibility was negatively associated with precision of intention awareness signifying aberrant metacognition in highly suggestible individuals. Hypnosis, psychedelics, and dissociative states were characterized by similar timing distortions with a dissimilar pattern to meditation. Suggestibility was associated with dissociation in individuals exposed to trauma, thereby corroborating the diathesis-stress model that suggestibility predisposes individuals to psychopathology. This hypothesis was further corroborated by meta-analyses showing that dissociative and functional neurological disorder patients exhibit high hypnotic suggestibility.

Conclusions: These results expand upon previous research and suggest that highly suggestible individuals are characterized by impaired intention awareness, reduced medial-lateral prefrontal communication, and a stress-mediated predisposition to dissociative psychopathology.

Keywords: Default mode network, Dissociation, Functional neurological disorder, Hypnosis, Metacognition

Publications:

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