

Os textos são da exclusiva responsabilidade dos autores
All texts are of the exclusive responsibility of the authors

NEUROBIOLOGY OF HYPNOTIC SUGGESTIBILITY AND RESPONSE TO HYPNOSIS

William J. McGeown¹, Gerard Campbell¹, Nii Nikolova², Iris Ionita¹, Irving Kirsch³, Giuliana Mazzoni⁴, Rothwelle J. Tate⁵, Annalena Venneri⁶

¹School of Psychological Sciences and Health, University of Strathclyde, UK

²Center for Functionally Integrative Neuroscience, Aarhus University, Denmark

³Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, USA

⁴Department of Dynamic and Clinical Psychology, Sapienza University of Rome, Italy

⁵Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, UK

⁶Department of Life Sciences, Brunel University, London, UK

Grant 269/18

Background: Hypnosis and suggestion are used in the treatment of conditions such as irritable bowel syndrome, chronic pain and depression, and there is evidence that they can alter cognitive and perceptual processes. Despite these uses, little is known about how neurobiological factors differ across the suggestibility spectrum. The funding provided by the BIAL Foundation supplements a research project grant from The Leverhulme Trust to enable an investigation of the neurophysiological, neuroanatomical, genetic, and cognitive factors that are associated with response to suggestion. The effects of hypnosis on brain connectivity are also being investigated.

Aims: The primary aim of the study is to investigate the cognitive and neurobiological factors (structural, functional and genetic) that are associated with hypnotic suggestibility and the experience of hypnotic phenomena. A secondary aim is to examine the effects of hypnosis on resting state brain connectivity patterns (as measured with electroencephalography [EEG] and with functional magnetic resonance imaging). A further aim is to investigate the EEG activity patterns that are associated with the experience of decreased agency.

Method: The target number of participants for the project is 72 (24 High in suggestibility, 24 Medium, 24 Low). To date, >500 people have been screened with questionnaires to assess personality characteristics, >200 people have been screened for suggestibility, 25 people have been tested on the full behavioural protocol, 12 people with EEG, 12 assessed with the genetic protocol, and 7 people with functional and structural MRI. Participants are screened for suggestibility using two standardised scales and are scored on a wide range of behavioural assessments (e.g., questionnaires to assess aspects of personality, and computerised tests of attention, working memory, and mental rotation). It will be possible to treat suggestibility as a continuous variable (or to categorise it as is traditional, into high, medium and low suggestibility). Hypnotic phenomenology is also being assessed, so that predictors of this may be identified. To investigate the effects of hypnotic suggestion on agency, post-hypnotic suggestion for involuntariness of a finger movement forms part of the study design.

Preliminary results: Data collection for the project was previously halted from March 2020 – Dec 2021 due to COVID, but resumed in Jan 2022. The creation of this complex dataset is expected to shed light on the questions posed above, and furthermore should provide a valuable resource for other researchers who are interested in suggestibility and those who study states of consciousness.

Keywords: Hypnosis; Suggestibility; Electroencephalography; Genetics; Magnetic Resonance Imaging

E-mail contact: william.mcgeown@strath.ac.uk