

The depersonalized brain: Psychophysiological correlates of cortical hyperexcitability associated with signs of depersonalization, derealization and dissociation, in non-clinical samples

ABSTRACT:

Background

This study explored the role of cortical hyperexcitability underlying the aberrant perceptions reported by those predisposed to sub-clinical levels of dissociative, depersonalization/derealization experiences. The anomalous perceptions experienced in these conditions range for perceptual distortions in relation to one's own body, to an altered experience of ones surroundings - though their neurocognitive underpinnings remain unclear.

Method

Participants were all screened on a variety of questionnaire measures that sought to quantify predisposition to anomalous perceptions. A revised version of the pattern-glare task was devised to examine the degree of visual distortions experienced from viewing irritable gratings. Interactions between perceptual (associated visual distortions) and emotional (facial EMG reactions) factors were explored to provide an objective psychophysiological index of both perceptual and emotional suppression as concomitants of dissociative states in the non-clinical population.

Results

Those showing a predisposition to anomalous dissociative experiences reported significantly more perceptual distortions from viewing the gratings. There were no effects from psychophysiological recordings from emotional facial regions.

Conclusion

Cortical hyperexcitability may be one factor contributing to the anomalous perceptions reported by some experiencing dissociative conscious experiences. These effects may be more 'perceptual' than 'emotional'.

Keywords

Dissociation, Hallucination, Aberrant perceptions, Depersonalization, Cortical hyperexcitability

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Published Work:

Braithwaite, J. J., Marchant, R., Takahashi, C., Dewe, H., & Watson, D. (2015). The Cortical Hyperexcitability Index (CHi): a new measure for quantifying correlates of visually driven cortical hyperexcitability. *Cognitive Neuropsychiatry*, 20(4), 330-348. doi:10.1080/13546805.2015.1040152 doi:10.1080/13546805.2015.1040152

Braithwaite, J. J., Mevorach, C., & Takahashi, C. (2015). Stimulating the aberrant brain: Evidence for increased cortical hyperexcitability from a transcranial direct current stimulation (tDCS) study of individuals predisposed to anomalous perceptions. *Cortex*, 69, 1–13. doi:10.1016/j.cortex.2015.03.023

Researcher's Contacts:

Dr. Jason Braithwaite
Behavioural Brain Sciences Centre
School of Psychology
University of Birmingham
Edgbaston
B15, 2TT
E-mail: j.j.braithwaite@bham.ac.uk