THE DEPERSONALIZED BRAIN: CORTICAL HYPEREXCITABILITY IS ASSOCIATED WITH SIGNS OF DEPERSONALIZATION, DEREALIZATION, AND DISSOCIATION, IN NON-CLINICAL SAMPLES

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Objectives: Striped patterns (i.e., gratings) with a spatial frequency of 3 cycles-per-degree of visual angle are known to produce visual discomfort, induce phantom visual distortions and somatic sensations in susceptible observers. These phenomena have been termed 'pattern-glare' and are thought to reflect increased degrees of cortical hyperexcitability and be associated with visual distortions and hallucinations. This study explored the role of cortical hyperexcitability underlying the aberrant perceptions reported by those predisposed to sub-clinical levels of dissociation, depersonalization and derealization experiences. The anomalous perceptions experienced in these conditions range from perceptual distortions in relation to one's own body, to an altered experience of one's surroundings. The neurocognitive underpinnings of these distortions in conscious experience remain unclear.

Method: Participants were screened on a variety of questionnaire measures that sought to quantify predisposition to anomalous visual and multi-sensory perceptions. A revised version of the pattern-glare task was devised to examine the degree of visual distortions experienced from viewing irritable visual gratings presented on a computer screen. Baseline gratings (non-irritable) were also presented. Interactions between perceptual (associated visual distortions from viewing the gratings) and emotional (facial EMG reactions from the corrugator supercilii muscle group) factors were explored to provide as indicative perceptual / emotional concomitants of dissociative states in the non-clinical population.

Results: Those showing an increased predisposition to anomalous dissociative experiences reported significantly more perceptual distortions from viewing the irritable gratings relative to those scoring low on such measures. There were no reliable differences between the groups for baseline gratings. There were no effects from psychophysiological recordings from emotional facial regions.

Conclusion: Cortical hyperexcitability is reliably associated with the presence of anomalous perceptions reported by some experiencing distorted and dissociative conscious experiences of the self. These effects may be mediated more in 'perceptual' rather than 'emotional' brain processes.

Keywords: Dissociation, Depersonalization, Aberrant perceptions, Cortical hyperexcitability
**Publications:**


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**Work in preparation:**