

Neurocognitive correlates of the out-of-body experience and kindred hallucinations of embodiment and the self

Results:

New findings from this project have shown that specific neurocognitive biases do appear to underlie certain anomalous bodily experiences (e.g., the out-of-body experience: OBE). The OBE groups showed distinct profiles on measures of; (i) embodied and disembodied perspective-taking; (ii) measures of cortical hyperexcitability; (iii) measures of the rubber-hand illusion, and its psychophysical correlates; and (iv) instability in temporal-lobe processing. In addition, the current evidence suggests that previous tasks have not been sensitive enough to reveal such important differences. As a consequence, the tasks which have been developed as part of this project for measuring concepts like cortical hyperexcitability, perspective-taking, and the rubber-hand illusion have led to a significant contribution that will have a large impact on the field of research. As well as making important contributions to scientific theory, the present project will also lead to important methodological improvements in the assessment of the neurocognitive correlates of the out-of-body experience and guide future research in the field. Findings from the project have been published in major international peer-reviewed neuroscience journals and more publications are currently being reviewed.

Published works:

Scientific journals:

Braithwaite, J. J., James, K., Dewe, H., Medford, N., Takahashi, C., & Kessler, K. (2013). Fractionating the unitary notion of dissociation: disembodied but not embodied dissociative experiences are associated with exocentric perspective-taking. *Frontiers in Human Neuroscience*, 7: 719, 1-12. doi:10.3389/fnhum.2013.00719

Braithwaite, J. J., Brogna, E., Bagshaw, A. P., & Wilkins, A. J. (2013). Evidence for elevated cortical hyperexcitability and its association with out-of-body experiences in the non-clinical population: New findings from a Pattern-Glare Task. *Cortex*, 49(3), 793-805. doi: 10.1016/j.cortex.2011.11.013

Work currently under review (at scientific journals)

Braithwaite, J.J., & Brogna, E, & Watson, D.G. (accepted) Autonomic emotional responses to the induction of the rubber-hand Illusion in those that report anomalous bodily experiences of the 'self'. Evidence for specific psychophysiological components associated with illusory body representations. *The Journal of Experimental Psychology: Human Perception and Performance*.

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Area(s) of interest:

Cognitive neuroscience, Consciousness, Altered states of awareness, Anomalous cognition, Embodied cognition, Out-of-Body experiences, Perspective-taking.

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