Dr Chie Takahashi PhD, MSc, BSc

Research Fellow

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About

Dr Chie Takahashi is a postdoctoral research fellow in Cognitive Psychology and Brain Science at the Behavioural Brain Sciences Centre, and a member of the **Selective Attention & Awareness Laboratory (SAAL) (/schools/psychology/labs/saal/index.aspx)** directed by Dr Jason Braithwaite. Her current research is to investigate the brain mechanisms of cortical hyperexcitability and the out-of-body experiences in non-clinical populations, supported by the Leverhulme Trust. The project employs diverse techniques, including psychophysiological measurements (electrodermal activity/skin conductance responses, body temperature, facial EMG activities) and brain stimulation (transcranial direct-current stimulation: tDCS).

Qualifications

PhD, MSc (Distinction), BSc (First) in Psychology, Bangor University, Wales

MSc (Distinction), BSc (First) in Physics, Ritsumeikan University, Japan

Biography

Dr Chie Takahashi has a multi-disciplinary background (in psychology, physics and engineering) and considerable research experience in both academic and industrial environments. After she graduated Ritsumeikan University with MSc in Physics, she joined Mitsubishi Electric Corporation and worked on the development and design of televisions and computer monitors employing electromagnetic field simulation and ergonomics approaches (1990-1995), and then worked on the development of power electric distribution systems and the protection devices (1995-2002). Through her engineering career, her research interests gradually developed towards human behaviour and brain mechanisms to improve quality of life by combining neuroscience and new technologies; therefore she learned cognitive neuroscience at Bangor University (2003-2012), mainly focusing on human tool use mechanisms employing multisensory integration paradigm and computational (probabilistic) approaches in her PhD. She started her postdoctoral research career at the University of Birmingham in October 2012.

Research

Research interests

Chie is fascinated with brain mechanisms and the computational modelling from both spatial and temporal aspects. Her main research interests encompass various perspectives of vision science and motor control, in particular, understanding how humans perceive the 3D world and respond to the world. Her current research focuses on understanding the mechanism of anomalous perceptions such as hallucinations and anomalous bodily experiences, where some of the phenomena can be considered as dysfunction of sensory integration. Her interests have also expanded to applied scientific fields such as virtual reality and brain-machine interface in collaboration with her multidisciplinary background.

- mechanisms of multi-sensory integration and motor control
- computational neuroscience
- psychophysics approaches
- psychophysiological measurements and techniques
- the virtual reality and brain-machine interface

Publications

Takahashi, C. & Watt, S. (2014). Visual-haptic integration with pliers and tongs: signal 'weights' take account of changes in haptic sensitivity caused by different tools. *Frontiers in Psychology, in press*. doi: 10.3389/fpsyg.2014.00109.

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Takahashi, C., Diedrichsen, J., & Watt, S. (2009). Integration of vision and haptics during tool use. *Journal of Vision, 9* (6):3, 1-13. doi: 10.1167/9.6.3.

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