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## **Out of body and in the body experience: Psychophysiology of bodily self-consciousness**

### **Results:**

The present research investigated the psychophysiology of “out of body” and “in the body experiences”. There are four main results of the research:

1. To investigate “out of body” experience, we provided a psychometric decomposition of the structure underlying bodily self-consciousness in the context of the so-called *rubber hand illusion*, and demonstrated selective links between individual components of self-consciousness and mental body representations (Longo et al., 2008).

2. We found that transcranial magnetic stimulation (TMS) to the temporo-parietal junction of the right – but not the left – hemisphere reduced the magnitude of interactions between visual and tactile body representations. This suggests that the TPJ is involved in detection of cross-modal conflict, and that this function is lateralised to the right hemisphere.

3. To investigate “in the body experiences”, we developed a simple behavioural method for measuring the implicit representation of the structure of the body, and documented systematic distortions in this structure. We have, furthermore, collected normative data from a large and diverse sample, which can potentially be used to analyse abnormalities of bodily experience.

4. We found that vision of bodies in intrinsic (1<sup>st</sup> person) and perspectival (3<sup>rd</sup> person) perspectives had distinct effect on touch. TMS to the EBA, furthermore, had opposite effects on these two perspectives, suggesting that this region is involved in distinguishing bodily reference frames.

### **Published work resulting from the project supported with the present grant:**

Longo, M. R., Schüür, F., Kammers, M. P. M., Tsakiris, M., & Haggard, P. (2008). What is embodiment? A psychometric approach. *Cognition*, 107, 978-998.

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