

Susceptibility to the Rubber Hand Illusion is modulated by individuals' sensory suggestibility



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Introduction

Simultaneously stroking a visible rubber hand with a person's unseen hand cause the feeling that the fake hand is part of one's own body. This phenomenon, termed **Rubber Hand Illusion (RHI)**, is widely used for studying the sense of body ownership. The subjective experience of the RHI, however, largely varies between participants. Little is known about the factors influencing individuals' differential susceptibility to the RHI. The illusion involves multisensory integration of visual, tactile and proprioceptive information, as well as cognitive processes (e.g., incorporating the rubber hand into one's own body representation). These processes can be influenced by the **individuals' sensory suggestibility**. Thus, this personality trait would be crucial in determining sensitivity to the RHI. **Aim.** The present study investigates whether the degree of sensory suggestibility determines the extent to which the individuals experience the RHI.

Method

74 healthy participants

Sensory suggestibility scale

HIGH

24 participants

Age ± SD

33.75±15.50

MID

22 participants

Age ± SD

34.91±15.97

LOW

28 participants

Age ± SD

40.89±17.81

RHI

Rubber hand Participants' hand

SYNCHRONOUS Mine!

ASYNCHRONOUS Not mine!

QUESTIONNAIRE

S3 It seemed as if the rubber hand were my hand. *Feeling of ownership*

0 1 2 3 4 5 6 7 8 9 10

Completely DISAGREE Completely AGREE

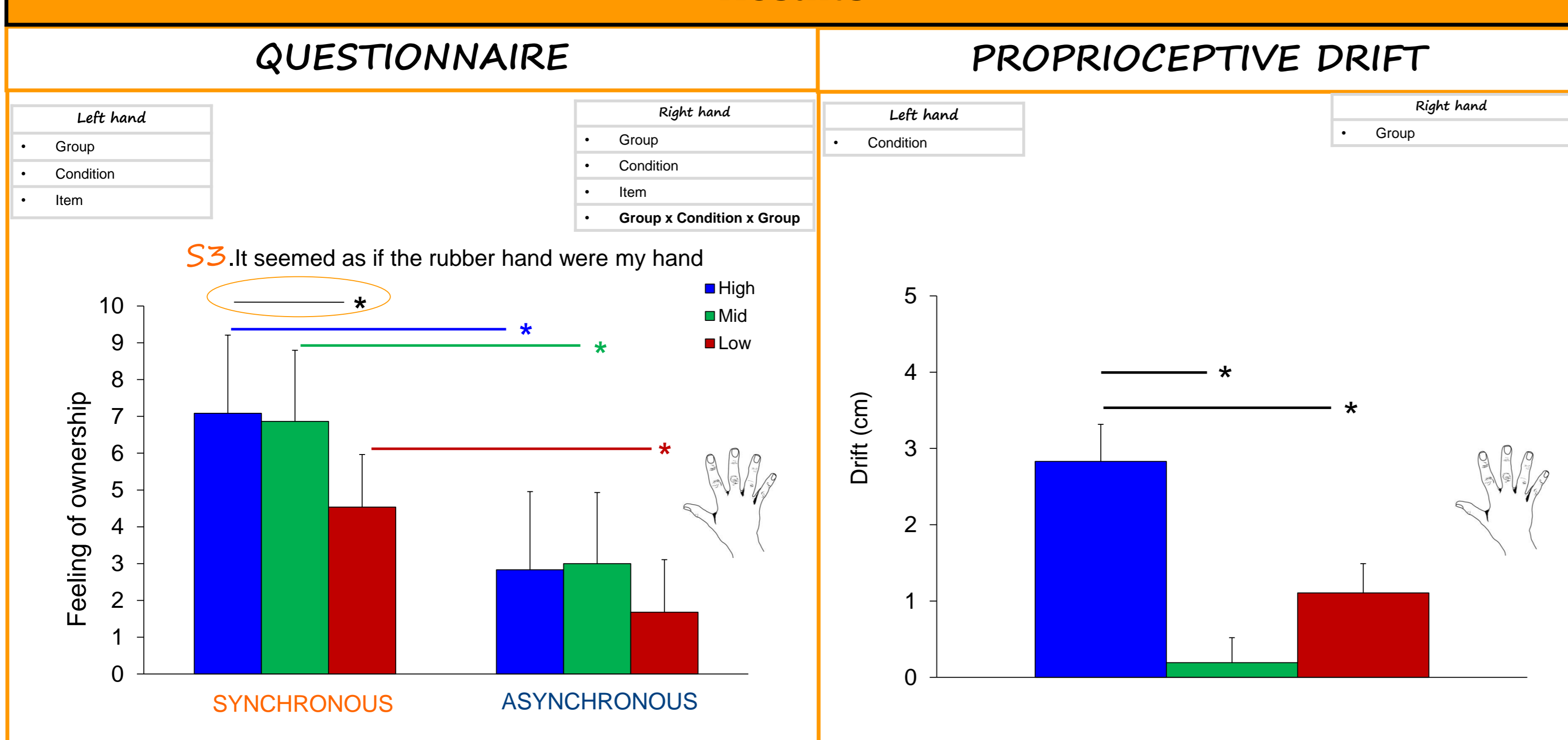
Asynchronous Synchronous

PROPRIOCEPTIVE DRIFT

Ruler 1 2 3 4 5 6 7 8 9 10 11 12 13 14

Where is your index finger?

Results



Main points..

High Suggestibility Group...

- Is more susceptible to the RHI compared to low suggestibility group
- Shows stronger feeling of ownership (statement 3) specifically after the synchronous stimulation of the right hand
- Has generally more proprioceptive drift than both mid and low suggestibility groups, specifically on the right hand

Conclusions

This study clearly demonstrates that sensory suggestibility strongly contributes to participants' experience of the illusion. The role of individuals' sensory suggestibility should be considered more carefully in future studies adopting the RHI paradigm.

References

Botvinick and Cohen, 1998; Haans et al., 2012; Lundh et al., 1998; De Pascalis et al., 2002; Gheorghiu et al., 1975.