Enhancement of the Rubber Hand Illusion (RHI) by the touch-proprioceptive coupling: a self-initiated procedure of the RHI

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As defined by de Vignemont et al. (2005), body awareness is the sense that the body we live in is ours (sense of ownership) and that we are responsible of our actions (sense of agency). It can be investigated by the Rubber Hand Illusion (RHI) where the participants are under the illusion that a false hand become their own (Botvinick et Cohen, 1998) because an experimenter strokes synchronously the false and the participant’s real hand. In the classical RHI the participant remains completely passive.

Gapenne (2014) postulated that proprioception through action is a fundamental factor in the construction of body awareness. Moreover, Varela et al. (1983) states that it is through action that human beings distinguish themselves from their environment both physically and psychically. In this optic, we created a new version of the RHI where participants self-initiated the strokes on the false hand.

Hypothesis: We hypothesized that self-initiated strokes on the false hand will create a touch-proprioceptive coupling which will create a sense of ownership but also a sense of agency towards the false static hand.

There is indeed a creation of a stronger sense of ownership in the active condition. Remarkably enough in the active condition there is a creation of a sense of agency toward a false inert hand. This latter result would mean that acting on this false hand would give it life. We could name it the Frankenstein effect.

It would therefore be trough action (sense of agency) that we would come to life and define our self as an entity distinct from the environment (sense of ownership).

What do you think of the frankenstein effect and its possible applications?