

Interoception

Interoception, the sense of the internal physiological state of the body, theoretically underpins aspects of self-representation. Experimental studies link feelings of body ownership to interoceptive [perception](#), yet few studies have tested for association between the [sense of agency](#) and interoceptive processing.

Koreki et al. combined an intentional binding paradigm with cardiac measures of interoceptive processing (behavioural performance on a heartbeat discrimination task, and effects of timing within the cardiac cycle) in twenty-six non-clinical participants as an exploratory study. They found performance accuracy on the heartbeat discrimination task correlated positively with the intentional binding effect, an index of sense of agency ($\beta = 0.832$, $p = 0.005$), even after controlling for effects of age, sex, educational level, [heart rate](#), heart rate variability and time accuracy. The intentional binding effect was enhanced during cardiac systole (compared to diastole) in individuals with greater heartbeat discrimination accuracy ($\beta = 0.640$, $p = 0.047$). These findings support the proposal that interoception contributes to mechanisms underlying the emergence of sense of agency ¹⁾.

¹⁾

Koreki A, Goeta D, Ricciardi L, Eilon T, Chen J, Critchley HD, Garfinkel SN, Edwards M, Yogarajah M. The relationship between interoception and agency and its modulation by heartbeats: an exploratory study. Sci Rep. 2022 Aug 10;12(1):13624. doi: 10.1038/s41598-022-16569-6. PMID: 35948567.

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