

## **Interoceptive accuracy modulates the effect of social reputation on deceptive behaviour.**

**Theoretical Background** Corporeal awareness arises from the integration of exteroceptive (e.g. visual, tactile) and interoceptive signals (e.g. cardiac, respiratory, gastric) originating outside and inside the body, respectively. Various studies within the framework of *embodied cognition* have demonstrated that bodily signals not only build corporeal awareness but can influence high-order cognitive and emotional processes, including social decision making.

**Objectives** The aim of the present study was to test whether individual differences in the capacity to read interoceptive and exteroceptive bodily signals could differentially influence participants' deceptive behaviour when their reputation was at risk or not.

**Methods** A sample of 71 healthy participants (33 males, age [ $M = 24.69$ ,  $SD = 4.57$ ]) volunteered the study. As measures of interoceptive and exteroceptive accuracy, participants completed a heartbeat-counting task, in which they counted their perceived heartbeats in a series of blocks, and a variation of the body-scaled action task, in which they gave visual judgements about whether their body could fit through a series of projected doors varying in width and height. In order to measure participants' deceptive behaviour, they were asked to perform the 'Temptation to Lie Card Game', in which they were tempted to lie to another person for financial gain, when their reputation was at risk or not (i.e. their choices could be transparent to the other player or not). Mixed models were used to perform statistical analyses.

**Results** Overall participants told more egoistic lies (to increase their own payoff) than altruistic lies (to increase the other player's payoff). Moreover, when participants believed their reputation was at risk they told significantly less self-gain lies than when their choices were secret. This effect was significantly moderated by interoceptive, but not exteroceptive accuracy. Specifically, participants with low interoceptive accuracy reduced the number of egoistic lies (and enhanced the number of altruistic lies) when their reputation was at risk, whereas participants with high interoceptive accuracy did not. Finally, our results show a non-significant correlation between measures of interoceptive and exteroceptive accuracy.

**Discussion** Together, our findings suggest that although integrated, interoceptive and exteroceptive accuracy constitute distinct facets of corporal awareness that can differentially impact higher order processes such as morality. In particular, we found that the ability to read one's own internal signals makes people less concerned about their social reputation during honesty-related decision making.