The processing of interoceptive states in oneself and others
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Background

Interoceptive accuracy: The ability to perceive internal bodily signals (e.g., heartbeat, respiration, fatigue, and temperature) accurately.

Interoceptive attention: One’s tendency to pay attention to internal bodily signals (e.g., heartbeat, respiration, fatigue, and temperature).

The emotion recognition literature has demonstrated that difficulties recognising one’s own emotions (alexithymia) are closely associated with difficulties processing others’ emotions across a range of cognitive domains, including attention, memory, and appraisal (Luminet et al., 2021).

Very little research has investigated how we process non-emotional internal states in others (e.g., temperature, breathlessness, fatigue, nausea), and if this is related to the processing of our own interoceptive states.

This study investigated interpretation of others’ non-emotional state displays, assessing whether participants assigned interoceptive or action labels to images of others posing interoceptive states.

Hypothesis: Propensity to use interoceptive labels will be positively associated with self-reported interoceptive accuracy and self-reported interoceptive attention.

Method

330 participants (82% male, 28% female), ranging in age from 16.16 to 90.3 years (mean = 36.56, S.D. = 15.84).

Questionnaires measured self-reported interoceptive accuracy (IAS; Murphy et al., 2019), and interoceptive attention (IATS; Gabriele et al., 2021). Higher scores indicate greater accuracy and attention.

Interpretation of non-emotional state displays in others was assessed with a novel task. Participants viewed randomly presented stimuli, taken from the Interoceptive States Static Images (ISSI) database (Biotti et al., 2022), depicting six actors (3 male, 3 female) portraying eight interoceptive states (hot, cold, pain, nausea, fatigue, breathlessness, hunger, and satiety). Participants were presented with two labels, and required to select the label that best fits the image.

Each trial presented one internal state label (e.g., feeling cold) and one action label (e.g., rubbing arms). Both labels were valid descriptions of the image.

Procedure

![Image of the procedure]

Analysis

Responses on the propensity to label images task were coded as 1 when an internal state label was selected, and 0 when an action label was selected. These scores were summed across all trials and divided by the number of trials (64), yielding the propensity score. A score of 1 indicates exclusive selection of interoceptive labels, and scores of 0 indicate the exclusive selection of action labels.

Correlation analyses were used to investigate the relationship between one’s own self-reported interoceptive abilities and the propensity to assign interoceptive labels, rather than non-interoceptive action labels, to others.

Results

Age and self-reported interoceptive accuracy (IAS) were not related (r = 0.09, p = 0.13).

Significant negative correlation between propensity score and age. The older an individual, the less attention they reported paying to their own internal bodily signals.

Significant positive correlation between self-reported interoceptive accuracy and propensity score. The more accurate an individual believes they are at monitoring their own internal bodily signals, the more likely they were to assign an interoceptive label to others.

Significant negative correlation between age and self-reported interoceptive attention (IATS). The older an individual, the less attention they reported paying to their own internal bodily signals.

Trend towards a positive relationship between self-reported interoceptive attention and propensity score. The greater an individual’s attention to their own internal bodily signals, the more likely they were to assign an interoceptive label to others.

Linear regression analyses were conducted to assess whether there was an interaction effect whereby, age x IAS or age x IATS predicted a significant change in propensity score. The addition of the interaction terms did not significantly increase the variance in propensity score explained.

References


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