Real-Time Social Interaction System (RETSIS)

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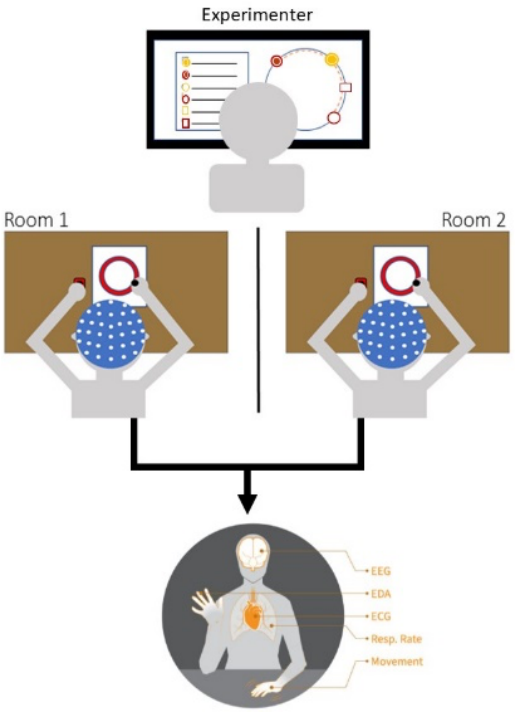
What is the problem?

Many psychiatric conditions are accompanied by impairments in social behaviour. Researchers have started studying social interaction dynamics in real-time interaction settings to identify these conditions based on subtle deviations in the patterns of interaction. However, until now, there have not been any reliable brain-based signatures that can inform the search for these deviations, specifically in the context of digitally mediated social interaction.

What is your solution?

We developed a computer interface – the Real-Time Social Interaction System (RETSIS) – based on the paradigm of the Perceptual Crossing Experiment (PCE). It records the dynamics of embodied social interaction of a pair of individuals in a minimal shared virtual space, while only being presented with binary tactile feedback about contact with virtual objects. In PCE research to date, only behavioural data and user experience have been measured, while RETSIS enables high-resolution PCE in a way that is integrated with EEG hyperscanning, a brain imaging method that allows simultaneous recording from more than one person. Additionally, heart and respiration rates, as well as skin conductivity can be measured.

RETSIS is expected to reveal brain signatures of two individuals interacting, specifically related to joint action and shared intersubjective experience, and to indicate their deviations in psychiatric conditions.



The PCE-EEG hyperscanning experimental setup.

Other resources

- RETSIS publication
- Unit publication list
- Unit website

Contribution to SDGs

Keywords: Embodied Cognition, Social Interaction, EEG Hyperscanning