

---

# Trust all, love a few: Neural correlates of social interactions with personally familiar others

Berna Güroğlu\*<sup>†1</sup> and Eduard Klapwijk<sup>2</sup>

<sup>1</sup>Leiden University, Leiden Institute for Brain and Cognition – Netherlands

<sup>2</sup>Child and Adolescent Psychiatry, Curium, Leiden University Medical Center, Leiden Institute for Brain and Cognition – Netherlands

## Abstract

When people interact with other people they have all sorts of expectations about others' intentions guiding their social decisions in everyday life. In this study we investigated the neural correlates of trust related social decision-making in which participants interacted with personally familiar peers from their classroom. In this fMRI study participants (current N=11, mean age = 20.5 years) played a repetitive Trust Game as the first player with three interaction partners: a friend (i.e., a liked peer), an antagonist (i.e., a disliked peer), and an anonymous peer they met on the day of the experiment (a confederate). Although amounts of trust displayed by the participants towards the three different interaction partners were similar on average, there were differences in mentalizing and reward-related brain regions activated during the interactions. Preliminary findings show higher activation in posterior superior temporal sulcus, tempoparietal junction and the dorsolateral prefrontal cortex for the antagonist compared to the anonymous peer, suggesting increased mentalizing and attention to coupling one's decision with the expected behavior of the antagonist. Further, interactions with the friend were associated with higher activation in caudate nucleus and the orbitofrontal cortex, possibly reflecting the rewarding nature of interacting with friends. We also found higher activation in the right temporal pole and the dorsal anterior cingulate cortex when not trusting compared to trusting the antagonist which might reflect the coupling of negative emotions with perceptions about the antagonist. The findings highlight the moderating role of interaction partners in activating various 'social brain' regions.

---

\*Speaker

<sup>†</sup>Corresponding author: bguroglu@fsw.leidenuniv.nl