# The influence of prior record on moral fudgment: Inferring mental states to justify blame

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Theory of Mind, a high-level mechanism of Social Cognition, is the ability to represent the contents of other people's mental states – such as beliefs, expectations and thoughts – and therefore to reason about other minds (Saxe & Powell, 2006; Leslie 1987). This mechanism has a profound impact on our social lives. Based on our experiences with other people and our resulting beliefs about their minds or characters, we form predictions about their future behavior and attempt to explain their intentions (Gallagher & Frith, 2003). The assumed neural basis for this cognitive mechanism (Leslie, 1987) includes, selectively, the right temporo-parietal junction and more generally, the precuneus, the left temporo-parietal junction and the medial prefrontal cortex (Saxe & Wexler; 2005, Saxe & Powell, 2003).
The proposed experiment aims to manipulate participant's beliefs about other people through direct social experience. Prior studies experiments provided direct evidence about the belief of a character either by stating the belief in words or by describing a behavior (Saxe & Kanwisher, 2003; Saxe & Wexler, 2005; Gallagher et al., 2000; Gallagher & Frith, 2003; Saxe & Powell, 2003; Wimmer & Perner, 1983). In these cases participants were merely observers and were not personally involved. However, real life does not always provide the obvious intentions behind a behavior. Instead, people often have to spontaneously infer other people's beliefs; and these spontaneous inferences may be biased by their prior interactions with others.

The whole experiment will consist of two basic parts: a behavioral economic game and a MRI scanner session.
In the first part, participants will play a repeated sequential economic investment game (Singer et al., 2004; Singer et al., 2006; Berg et al., 1995; Haselhuhn et al., 2005; Rabin, 1993) against ten 'competitors'. In actuality, participants will play against a computer program rather than real competitors. Half of the competitors will act fairly and the other half will act unfairly. Based on these interactions with the competitors, participants are expected to form an impression of the competitors' characters. After the economic game participants will read short stories in the MRI-scanner in which the competitor's action either lead to good/neutral or bad outcomes. In an additional task, participants will be asked to judge - depending on the outcome - how blameworthy or praiseworthy they consider the

actions of each competitor's short stories. Therefore, a modulation of the participants' inclination to exonerate each competitor for the bad consequences of their actions is expected. These inferences should be reflected in brain regions specifically involved in Theory of Mind: the right- and left-temporo parietal junction, the precuneus and the medial prefrontal cortex (Saxe & Wexler, 2005; Saxe & Powell, 2003).

## References


Berg, J., Dickhaut, J., McCabe, K. (1995). Trust, reciprocity and social history. *Games and Economic Behavior*, 10, 122-142.

Gallagher, H. L., Frith, C. D. (2003). Functional imaging of 'theory of mind'. *Trends in Cognitive Sciences*, 7(2), 77-83.

Gallagher, H.L., et al.(2000). Reading the mind in cartoons and stories: an fMRI study of 'theory of mind' in verbal and nonverbal tasks. *Neuropsychologia*, 38(1), 11-21.

Haselhuhn, M. P., Mellers, B. A. (2005). Emotions and cooperation in economic games. *Cognitive Brain Research*, 23, 24-33.

Leslie, A.M. (1987). Pretense and Representation: The Origins of "Theory of Mind". *Psychological Review*, 94 (4), 412-426.

Rabin, M. (1993). Incorporating Fairness into Game Theory and Economics. *The American Economic Review*, 83(5), 1281-1302.

Saxe, R. , Kanwisher, N. (2003). People thinking about thinking people. The role of the temporo-parietal junction in "theory of mind". *Neuroimage*, 19(4), 1835-42.

Saxe, R., Powell, L.J. (2006). It's the thought that counts: specific brain regions for one component of theory of mind. *Psychological Science*,17(8), 692-9.

Saxe, R., Wexler, A. (2005). Making sense of another mind: the role of the right temporo-parietal junction. *Neuropsychologia*, 43(10), 1391-9.

Singer, T., et al. (2004). Empathy for pain involves the affective but not sensory components of pain. *Science*, 303(5661), 1157-62.

Singer, T., et al. (2006). Empathic neural responses are modulated by the perceived fairness of others. *Nature*, 439(7075), 466-9.

Wimmer, H., Perner, J. (1983). Beliefs about beliefs: Representation and constraining of wrong beliefs in young children's understanding of deception. *Cognition*, 13, 103-128.