

Decision-making using methods of artificial intelligence Neuroeconomics of AI in businesses

„Neuroeconomics of AI in business“ specifically deals with the cognitive processes taking place during the interaction with artificial intelligence and its results.

Problem specifications

In addition to the pure performance of AI-based forecasts, for example measured through the probability of correct prognoses, there is an additional factor for the acceptance of AI: trust

Trust on the operational decision makers in AI and the AI-based forecasts

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Key questions

- What influence does the degree of anthropomorphism of a AI recommendation have on the trust in this recommendation?
- Which neural mechanisms are connected to perceptual-, processing- and decision-making-processes?

Goal definition

It is examined, which explanations and arguments applicants of AI expect and how the appearance of AI in diverse, also anthropomorphic forms, influences the reception of the supplied information or recommendation.

- I. Analysis of the **underlying mechanisms of action** on neuropsychological basis of **trust in AI** and its prognosis, decisions and classifications
- II. „**Parasocial preferences**“ towards a **AI perceived as human** will be recorded with the help of neuroscientific methods.

Methodology

As trust decisions are often implicit, the recording of the trust effect requires methods from the field of neuroscience.

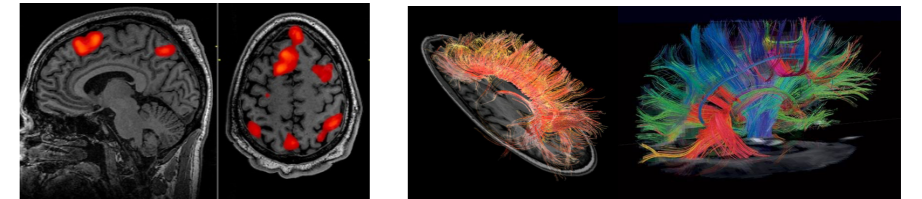


Figure 1: Examples of neural measures. Functional activity and connectivity (left), structural and morphometric measurements (diffusion-weighted MRI, right)

The trust of AI-recommendations could be influenced by a human-like design. To measure these underlying neural processes a trust-game-experiment with humanized AI could be used and the supposed neural effects could be examined and analyzed with the help of different measurements using magnetic resonance imaging (MRI)

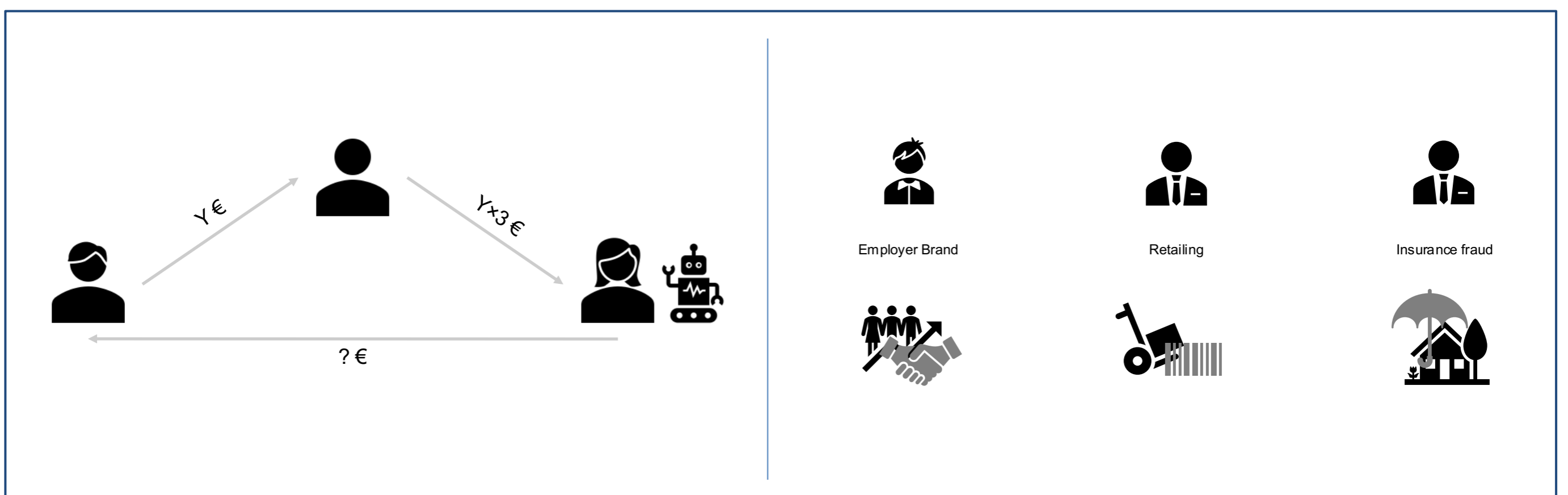


Figure 2: Possible implementation for the experimental paradigm.

The trust game (left) is a two-person-game, in which a subject A trusts or does not trust a subject B.

If the subject A decides to trust the subject B, the subject B in return can decide to either a) abuse or b) honor this trust.

A modified form of this could be implemented. Possible applications (right) could be employer brand decisions, listing decisions in food retail, insurance fraud decisions.

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