Universität Basel

Research Project

Intuition in schizophrenia: Studying the neuro-cognitive underpinnings of judgment and decision processes in the course of the disease

Third-party funded project

Project title Intuition in schizophrenia: Studying the neuro-cognitive underpinnings of judgment and decision processes in the course of the disease
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Schizophrenia is a severe mental disorder that heavily affects daily-life functioning by distorting perception, cognition, emotion, and behavior. Previous research has observed certain cognitive characteristics in patients with schizophrenia, such as the tendency to arrive early at decisions without accumulating enough evidence beforehand. This has been called the jumping-to-conclusions bias. In a nutshell, this cognitive bias can be attributed to aberrant decisional and judgment processes in the context of information integration and evidence evaluation. Trait intuition research, which has observed that an intuitive thinking style is positively associated with schizotypal traits and delusional ideation in healthy adults, may raise the question of whether patients with schizophrenia are "too intuitive" in situations where enough information exists but is ignored, leading to the jumping-to-conclusions bias. Intuition is thereby defined as an unconscious, experience-based, and action-initiating decision strategy. Depending on the situation, it can lead to either biased or correct decision outcomes. However, the ability to use intuition is indispensable for preferential daily-life decision making in order to stay adaptive. Main aim: The planned study aims to examine the temporal relationship between intuitive judgment and decision making and the jumping-to-conclusions bias in daily life (naturalistic level) and with neuroimaging (neurocognitive level). To address this aim, intuition will be explored from a process perspective, which will make it possible to disentangle underlying neurocognitive mechanisms and circumvent the drawbacks of self-report measures that have been typically used when investigating intuition from a trait perspective. Method: There will be two groups of participants (patients, healthy controls), randomly allocated to one of two conditions (intuition first vs. jumping to conclusions first). To assess the relationship between intuition and the jumping-to-conclusions bias on a neurocognitive level, while being scanned with fMRI, participants will perform a classic intuition task that operationalizes intuition via semantic coherence judgments and a probabilistic reasoning task to assess the jumping-to-conclusions bias. The fMRI sessions will be followed by an ecological momentary assessment of intuitive decision making and the jumping-to-conclusions bias in daily life (naturalistic level). Expected outcomes: The jumping-to-conclusions bias is expected to be higher in the patients than in the control group, replicating previous work. A high use of intuition in daily life is expected to predict the jumping-to-conclusions bias in patients with schizophrenia. Neuronal activation patterns accompanying intuition are assumed to be deficient in the patients compared to the healthy group. Relevance of the planned work: The study has the potential for highly relevant scientific and ultimately also clinical implications. On the scientific level, the results will inform and augment (a) existing neuroscientific models on intuition, and (b) prevailing cognitive models on the formation and maintenance of key symptoms in schizophrenia. On the clinical level, in the long term,

results may have an impact on the development of nonpharmacological metacognitive training modules addressing daily life decision making.

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