

PhD project of Ellen Joos: "EEG correlates of normal and altered processing strategies to solve the perceptual inference problem"

The information available through our senses is noisy, incomplete, and to varying degrees ambiguous. The perceptual system has to reconstruct the exogenous world by integrating the limited sensory information with endogenous factors such as memory [1]. This construction process causes the perceptual inference problem, i.e. one single sensory information can be interpreted in multiple ways. In a probabilistic manner, the brain decides for one of those interpretations in order to provide a stable and reliable percept. The present dissertation investigates different aspects of this probabilistic decision in neurotypical participants but also in patients with Schizophrenia Spectrum Disorder (SSD) by comparing visual processing of ambiguous/low-visibility with disambiguated/high-visibility stimuli.

Ambiguous figures are paradigmatic when studying the perceptual inference problem, because in those figures one sensory information allows for two possible interpretations.

