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  Multi-technique approach to gaze processing

  Detecting whether someone is looking at you or away represents a fundamental aspect of social cognition. While direct gaze signifies the possibility of a social interaction, averted gaze signifies that the other is interested in something/someone else than you. Gaze seems fundamental to proper theory of mind processing, the understanding of what people are thinking, and abnormal processing of gaze or social cues derived from gaze has been noted in various disorders such as Autism Spectrum Disorders and Schizophrenia. However, the neural mechanisms underlying this important aspect of social cognition are not well understood. In this talk I will present data on gaze processing using three different approaches of the same two tasks. Subjects were involved in an explicit judgement of gaze direction (is the face looking at you or away) and in an explicit judgement of head orientation (is the face in _-view or front view) where gaze was irrelevant. Eye movement monitoring, ERPs and fMRI were used in different sessions, allowing for behavioural information as well as temporal and spatial aspects of the underlying neural activity. Together, these three techniques allow for a better understanding of this important social task. We will discuss the implications of the findings for current views of face processing and gaze orienting mechanism in normal controls and pathological populations.

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