Me, myself and I: temporal dysfunctions during self-evaluation in patients with schizophrenia

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Self-concept is deeply affected in schizophrenia. Positive symptoms in particular are related to disturbed self/other distinctions. The neural networks underlying self-evaluation in schizophrenia have barely been investigated. The study reported here involved 13 patients with schizophrenia and 13 matched controls. During functional MRI, participants decided in three conditions whether the presented positive and negative personality traits characterized themselves, an intimate person, or included a certain letter. Based on the responses, each experimental condition was designed using a flexible factorial model. Controls and patients showed a similar behavioral pattern during self-evaluation, with group comparison revealing decreased activation in patients in the left inferior temporal gyrus and both temporal poles during self-ascription of traits, and in the anterior medial prefrontal cortex during evaluation of an intimate person. In patients, positive symptoms correlated positively with brain activation in the left parahippocampus during trait self-ascription. Hence, while evaluating themselves, schizophrenia patients revealed decreased activation in areas related to self-awareness overlapping with networks involved in theory of mind, empathy and social knowledge. Moreover, patients’ brain activation during self-reflection was affected by the current positive symptomatology. The close interaction between self and other highlights the clinical and social relevance of self-processing deficits in schizophrenia.