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From Action Goals to Social Interactions: Neural Dynamics of Intentionality Processing

Friday, September 12, 2025 12:30 PM (1h 45m)

Understanding others'mental states is a fundamental human ability, essential for navigating a complex and dynamic social world. Identifying the brain areas involved in this capacity is crucial, given the clinical and social consequences that difficulties in social understanding can entail. To better delineate the roles of the mentalizing and mirror systems, we performed a functional MRI study with healthy individuals. Specifically, 50 healthy young adults participated in a task requiring to view images and videos portraying different types of intentionality: immediate goal-directed actions, long-term goal-oriented intentions, and socially-directed intentions toward another agent. Our results reveal a progressive increase in brain activity within social cognition areas, from decoding immediate goals to understanding social intentions, involving the mentalizing network (dorsolateral prefrontal cortex and cingulate cortex), mirror areas (inferior frontal gyrus), as well as regions implicated in emotional recognition and salience processing, such as the amygdala. These findings not only clarify the functional roles of social brain areas but also offer insights for future research on clinical populations, potentially guiding the development of rehabilitation treatments using neurostimulation.

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No

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