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INTENTIONALITY OF MOVEMENT: MIRROR NEURON SYSTEM AND THEORY OF MIND

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The ability to understand intentions of actions performed by others is one of the prerequisites for social interaction. This ability has been attributed to our capacity to mentalize others' behaviour, by simulating or predicting their mental states that would cause that behaviour and make it comprehensible. Brain imaging studies revealed the so called "mentalizng network" including the pSTS/TPJ, the temporal poles and the medial prefrontal cortex. This network gets constantly activated anytime we try to take the perspective of others or try to simulate their state of mind. On the other hand the discovery of mirror neurons has provided an additional explanation for understanding of the content of actions. The functional properties of these neurons point out that action understanding is primarily based on a mechanism that directly matches the sensory representation of perceived actions with one's own motor representation of the same actions. We provide evidence that both systems interact closely during the processing of intentionality of actions. Thus mentalizing is not the only form of intentional understanding and motor and intentional components of action are closely interwoven. Both systems play an important role in the pathophysiology of schizophrenia.