THE CORRESPONDENT LINK BETWEEN ACTION PREDICTION AND MOTOR ABILITY IN EARLY INFANCY

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Using eye tracking technique, we investigated the link between action prediction and action execution in early infancy. Prediction of others' action goals is fundamental ability in social interaction. Such ability enables us to predict future actions of others and prepare appropriate responses for those. Indeed, it is assumed that human adults, and even infants, predict action goals of others through a mirror neuron system that maps an observed action onto motor counterpart of that action. However, the ontogenetic origins and functions of the matching process are not well elucidated. Here we show that there is a correspondent link between action prediction and motor ability in early infancy: the onset of action prediction is synchronized with the onset of infants' own motor ability that corresponds to observed actions and there is direct link between them. Our findings indicate that there is a direct correspondent link between perception and execution of action in early infancy, providing the strong ontogenetic evidence of the direct matching process in the mirror neuron system.

Keywords: infants, perception and action, direct matching hypothesis, mirror neuron system