

Study sheds light on social brain development

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Children develop social skills by learning how to understand others' thoughts and feelings, or their theory of mind. A new study of EEGs of 4-year-olds shows that theory of mind changes are related to the functional development of two parts of the brain -- the dorsal medial prefrontal cortex and the temporal-parietal juncture. These findings are the first to show that these specialized neural circuits may be there as early as the preschool years.

The capacity to figure out what others are thinking and what they mean is an ability unique to people that's central to our lives. A new study on the [neural mechanisms](#) that govern these abilities sheds light on the relation between how people and groups interact, on the one hand, and how the brain develops and functions, on the other.

The study, in the July/August 2009 issue of the journal *Child Development*, was conducted by researchers at Queen's University at Kingston in Ontario, Canada.

In the preschool years, children develop social skills by learning how to understand others' thoughts and feelings, or their theory of mind. In most children, theory of mind changes over time so they come to understand that others' thoughts are representations of the world that may or may not match the way the world actually is. In their study of EEGs of 29 4-year-olds, the researchers found that these changes are related to the functional development of two parts of the brain—the dorsal medial [prefrontal cortex](#) and the temporal-parietal juncture—that govern similar understanding in adults.

"For a while now, we have known that specific brain areas are used when adults think about others' thoughts," according to Mark A. Sabbagh, associate professor of psychology at Queen's University at Kingston and the study's lead author. "Our findings are the first to show that these specialized neural circuits may be there as early as the preschool years, and that maturational changes in these areas are associated with preschoolers' abilities to think about their social world in increasingly sophisticated ways.

"In helping us understand how the typical social brain develops, the findings also provide clues as to what happens when social reasoning is impaired, as occurs in autism," Sabbagh added.

More information: *Child Development*, Vol. 80, Issue 4, Neurodevelopmental Correlates of Theory of [Mind](#) in Preschool Children by Sabbagh, MA, Bowman, LC, Evraire, LE, and Ito, JMB (Queen's University at Kingston).

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