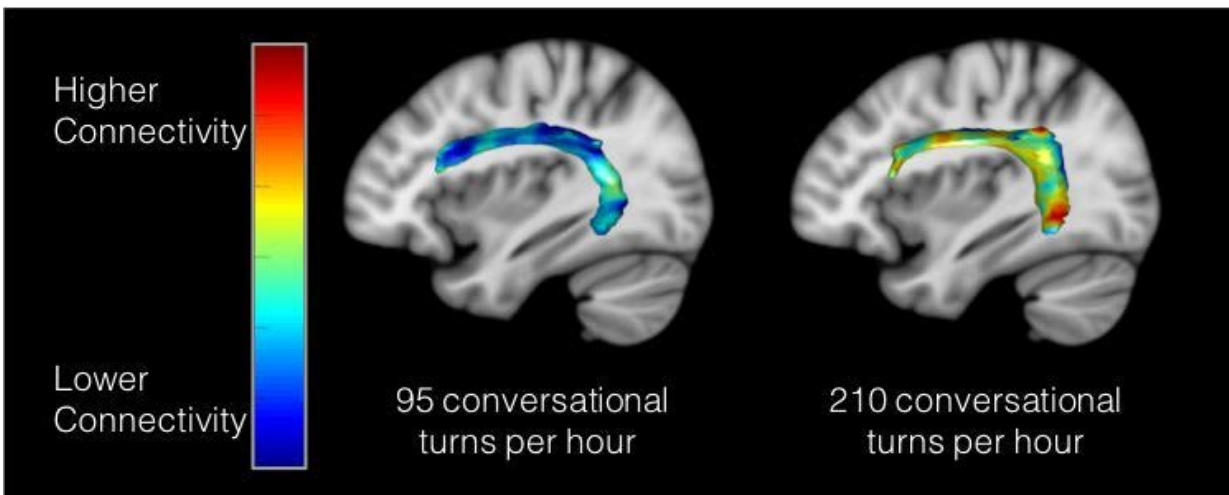


Adult-child conversations strengthen language regions of developing brain

August 13 2018



The amount of adult-child conversational turns that young children experience is related to the strength of white matter connections between two key language regions in the brain, as represented by the colored brain regions from two participants. Although both children are the same age and gender, and from the same socioeconomic background, they differ in the number of conversational turns experienced, which relates to the strength of white matter connectivity in these pathways. Credit: Romeo *et al.*, *JNeurosci* (2018)

Young children who are regularly engaged in conversation by adults may have stronger connections between two developing brain regions critical for language, according to a study of healthy young children that confirms a hypothesis registered with the Open Science Framework.

This finding, published in *JNeurosci*, was independent of parental income and education, suggesting that talking with children from an early age could promote their language skills regardless of their socioeconomic status.

Although decades of research have established a relationship between [socioeconomic status](#) and children's brain development, the specifics of this connection are not known. The so-called "word gap"—the influential finding from the early 1990s that school-age children who grew up in lower-SES households have heard 30 million fewer words than their more affluent classmates—and other evidence demonstrating an influence of early language exposure on later language ability suggests a potential influence of language experience on brain structure.

In their neuroimaging study of 40 four- to six-year-old children and their parents of diverse socioeconomic backgrounds, Rachel Romeo and colleagues found that greater conversational turn-taking (measured over a weekend with an in-home audio recording device) was related to stronger connections between Wernicke's area and Broca's area—[brain regions](#) critical for the comprehension and production of speech.

More information: Language Exposure Relates to Structural Neural Connectivity in Childhood, *JNeurosci* (2018). [DOI: 10.1523/JNEUROSCI.0484-18.2018](#)

Provided by Society for Neuroscience

Citation: Adult-child conversations strengthen language regions of developing brain (2018, August 13) retrieved 24 April 2024 from <https://medicalxpress.com/news/2018-08-adult-child-conversations-language-regions-brain.html>

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