Sophisticated parent language is linked to high-frequency neural activity in preschoolers

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Abstract

High-quality parent language may support preschoolers' language development by shaping underlying neurodevelopment. Indeed, more interactive language relates to higher frontal brain activity (Romeo et al., 2018). However, it remains to be explored whether other features of parent language may also be related to brain activity. This study examined whether parental linguistic sophistication is related to children's spontaneous high-frequency neural activity, as indexed by EEG gamma power. Transcripts of parent-child dyads (N=36, children M=4.1 years old) completing a puzzle task were analyzed for mean length of utterance (measure of grammatical complexity) and number of different words (measure of vocabulary sophistication). We found that higher parental mean length of utterance was related to higher regional EEG gamma power ($F(2.61,80.78)=2.92$, $p=.046$), suggesting that more grammatically complex parent language is linked with higher child neural maturity. Future studies should explore the directionality of this finding and further measures of parent language quality.

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