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Information Signatures in Children's Language Environment

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Abstract: In auditory statistical learning, children are sensitive to the transitional structure of their language environment. Variability and stability of utterances in the language environment are important properties of statistical learning but are currently understudied across laboratory and naturalistic research contexts. In this study, we quantify variability and stability in the language environment of children as measured by amount of information within the temporal structure of caregivers' utterances. In this work we present a new method for understanding information signatures in the temporal structure of parent-child free play contexts and document information signatures of caregiver utterances at multiple timescales. Our results suggest information signatures of parental utterances increase across development (9-24 months), but decrease within individual play sessions (5-6 minutes). We speculate that the dynamics of information signatures varies across multiple timescales. Possible implications of the observed information signatures inherent in caregivers' naming of objects to their young children are explored.