

NAME: Natalie Pak, natalie.s.pak@vanderbilt.edu
PI: Kaiser, Ann
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Exploration of a Novel Measure of Young Dual Language Learners' Grammatical Development

Authors: Natalie S. Pak, Carol Scheffner Hammer, Monica Galindo, Pamela Hadley, Ann P. Kaiser

Introduction: Narrative language samples are often recommended in addition to or instead of standardized test scores for evaluating the expressive language development of children from culturally and linguistically diverse backgrounds (Castilla-Earls et al., 2020). Sentence diversity is a novel measure of language development for young children that has previously only been studied with monolingual English-speaking toddlers (Hadley, 2020). The purpose of the current study was to explore the measure of sentence diversity in narratives of young Spanish-English dual language learners (DLLs).

Methods: We analyzed a selected subset of an extant data set (Hammer, 2009-2013). Data included language assessment standard scores and narrative transcripts in Spanish and English from 36 preschool-aged children. Children were selected who were balanced bilinguals or Spanish-dominant and who had relatively low expressive vocabulary scores in both languages. The mean length of utterance in words (MLUw) and number of different words (NDW) in narratives were calculated using SALT Software (Miller & Iglesias, 2020). To calculate sentence diversity, bilingual coders identified the subject and verb of each active declarative sentence and counted the unique subject-verb combinations in each narrative (Hadley et al., 2018). We performed bivariate correlational analyses among variables in each language. We also divided the narratives in each language into quartiles based on MLUw and examined the average sentence diversity within each quartile.

Results: The average sentence diversity in narratives was 17.6 (SD=9.0) in Spanish and 18.1 (SD=8.3) in English. NDW was highly correlated with sentence diversity in both Spanish ($r=.853$, $p<.01$) and English ($r=.923$, $p<.01$). MLUw was moderately correlated with sentence diversity in Spanish ($r=.381$, $p<.05$) and English ($r=.387$, $p<.05$). Of the language assessment scores, only Spanish sentence comprehension was correlated with sentence diversity ($r=.392$, $p<.05$). Sentence diversity was low in the lowest MLUw quartile (approximately less than 4.0) in both languages, but there were no discernible patterns for the three higher MLUw quartiles.

Discussion: Sentence diversity measures how a child can use diverse words in specific positions and combinations in sentences, a marker of grammatical development not captured by NDW and MLUw (Hadley, 2020). This study was the first to explore the sentence diversity measure in narratives of 5-year-old Spanish-English DLLs. Sentence diversity was related to NDW and MLUw in both Spanish and English, consistent with previous studies with monolingual English-speaking toddlers (Hadley et al., 2018). Based on differences in sentence diversity across MLUw quartiles, sentence diversity may be most sensitive as a developmental language measure for children with low MLUw. Longitudinal data are needed to determine if sentence diversity measures improve predictions of long-term bilingual language development in DLLs.

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