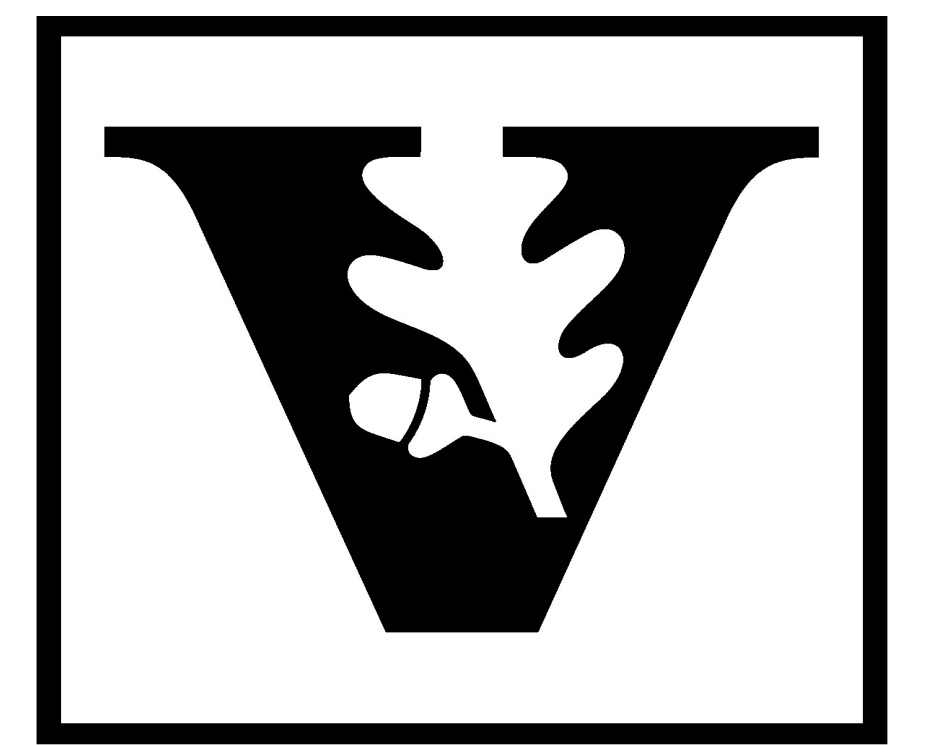


Exploration of a Novel Measure of Young Dual Language Learners' Grammatical Development



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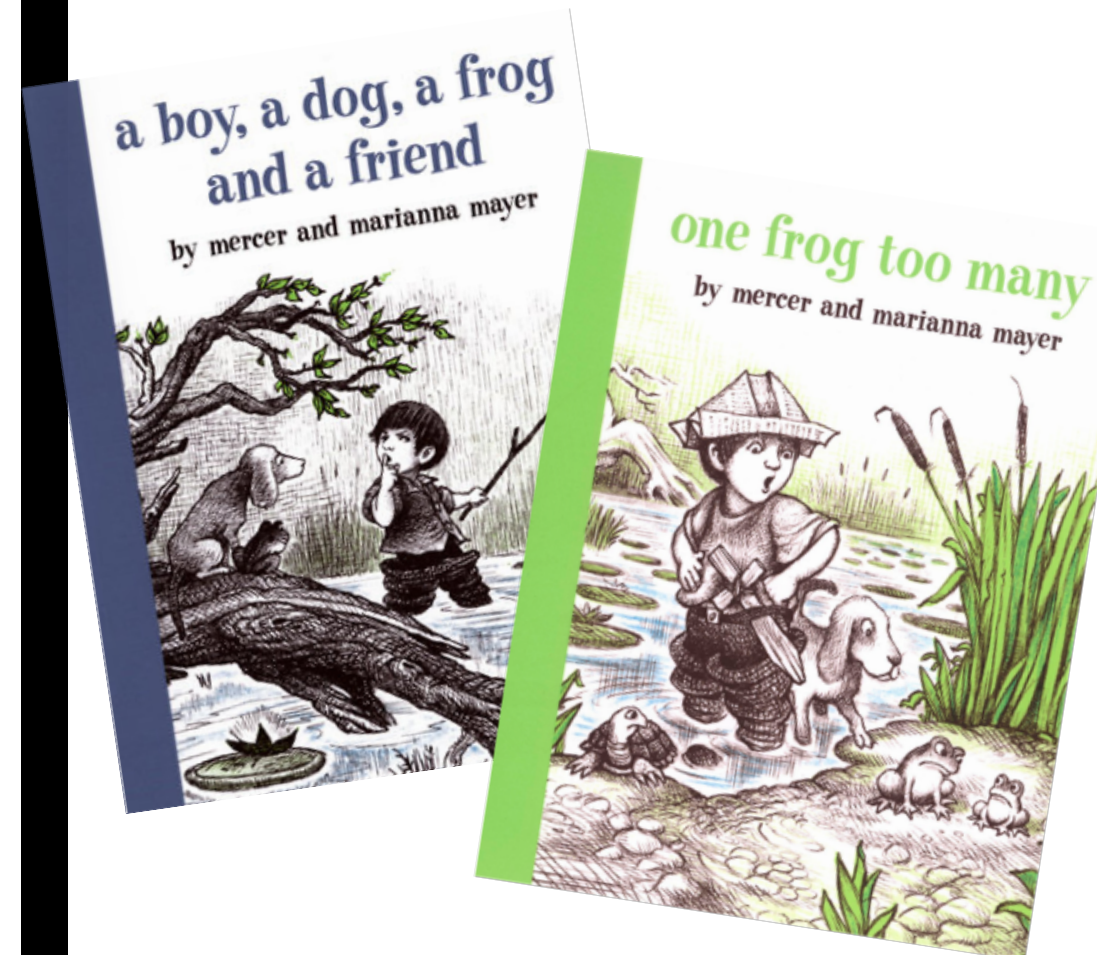
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Background

- Narrative language samples are helpful for evaluating the expressive language development of children from culturally and linguistically diverse backgrounds (Castilla-Earls et al., 2020).
- Sentence diversity, or the number of unique subject-verb combinations**, is a novel measure of language development for young children that has previously only been studied with monolingual English-speaking toddlers (Hadley, 2020).
- The current study explored the measure of sentence diversity in narratives of young Spanish-English dual language learners (DLLs).

Data

We analyzed a selected subset of an extant data set (Hammer, 2009–2013). We selected data from 36 children who were balanced bilinguals or Spanish-dominant and had relatively low expressive vocabulary scores in both languages.



Children's average age was 5.3 years ($SD=0.2$) for Spanish narratives and 5.2 years ($SD=0.2$) for English narratives.

The data included narrative transcripts and standard scores from Sentence Structure and Expressive Vocabulary subtests of the Clinical Evaluation of Language Fundamentals—Preschool-2 (CELF-P2; Wiig et al., 2004) and CELF-P2 Spanish (Wiig et al., 2009).

References

- Castilla-Earls, A., Bedore, L., Rojas, R., Fabiano-Smith, L., Pruitt-Lord, S., Restrepo, M. A., & Peña, E. (2020). Beyond scores: Using converging evidence to determine speech and language services eligibility for dual language learners. *American Journal of Speech-Language Pathology*, 29, 1116–1132.
- Hadley, P. A. (2020). Exploring sentence diversity at the boundary of typical and impaired language abilities. *Journal of Speech, Language, and Hearing Research*, 63(10), 3236–3251.

Results

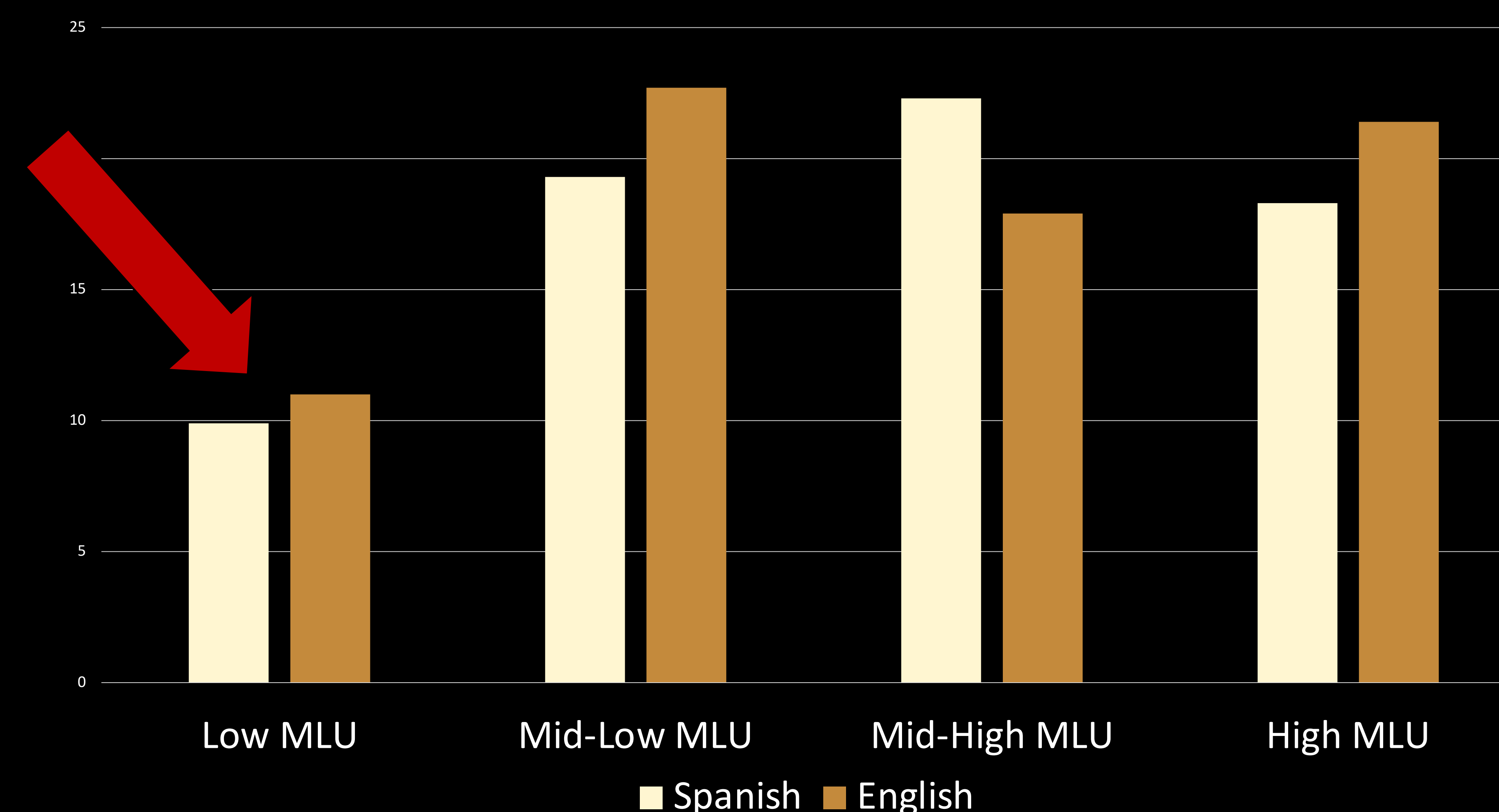
Spanish

	1	2	3	4	5	6	7	8
1. CELF-P2 Spanish Expressive Vocabulary	1							
2. CELF-P2 Spanish Sentence Structure	.128	1						
3. Complete, Intelligible Utterances	.101	.188	1					
4. Mean Length of Utterance in Words	.320	.281	.142	1				
5. Number of Different Words	.211	.273	.896**	.396*	1			
6. Subject Diversity	.190	.277	.605**	.207	.584**	1		
7. Verb Diversity	.196	.400*	.737**	.407*	.806**	.648**	1	
8. Sentence Diversity	.171	.392*	.850**	.381*	.853**	.790**	.927**	1

English

	1	2	3	4	5	6	7	8
1. CELF-P2 Expressive Vocabulary	1							
2. CELF-P2 Sentence Structure	.377*	1						
3. Complete, Intelligible Utterances	-.041	.027	1					
4. Mean Length of Utterance in Words	.298	.269	.144	1				
5. Number of Different Words	.342*	.292	.800**	.398*	1			
6. Subject Diversity	.271	.142	.590**	.463*	.640**	1		
7. Verb Diversity	.259	.122	.741**	.191	.870**	.539**	1	
8. Sentence Diversity	.271	.186	.853**	.387*	.923**	.778**	.896**	1

Sentence Diversity by Mean Length of Utterance (MLU) Quartile



Sentence diversity is an indicator of language skill level in both Spanish and English for young dual language learners who are early in grammatical development.

Method

The mean length of utterance in words (MLU) and number of different words (NDW) in narratives were calculated using SALT Software (Miller & Iglesias, 2020). Bilingual coders identified the subject and verb of each active declarative sentence and counted the unique subject-verb combinations (i.e., sentence diversity) 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 in each quartile. Example:

Utterance	Subject	Verb
The frog jumped out.	frog	jump
The frog swam away.	frog	swim
He swam fast.	he	swim

Subject Diversity = 2 (frog, he)
 Verb Diversity = 2 (jump, swim)
 Sentence Diversity = 3

Significance and Next Steps

- This study was the first to explore the sentence diversity measure in narratives of 5-year-old Spanish-English DLLs.
- Sentence diversity captures children's ability to grammatically encode, which is not captured by other measures (e.g., MLUw).
- Sentence diversity may be most sensitive at early stages of grammatical development.
- Future research should examine sentence diversity in younger Spanish-English DLLs (e.g., toddlers) and in different language contexts (e.g., during play).

References

- Hadley, P. A., McKenna, M. M., & Rispoli, M. (2018). Sentence diversity in early language development: Recommendations for target selection and progress monitoring. *American Journal of Speech-Language Pathology*, 27(2), 553–565.
- Hammer, C. S. (Principal Investigator). (2009–2013). *Tools of the mind: Promoting ELLs' language, self-regulation & school-readiness* (Project No. 3U01HD060296-05S1) [Grant]. Eunice Kennedy Shriver National Institute of Child Health & Human Development. <https://reporter.nih.gov/search/YtuMcvhkHUKn3Chdal1kNA/project-details/8651757>