

Production and Accuracy of Grammatical Structures in Spanish-English Bilingual Children



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Introduction

Background

- There are approximately 39,769,281 Spanish-English bilinguals¹
- 3,790,949 are of these bilinguals are considered English Learners (ELs)²
- The majority of studies on bilingual children have compared their performance in English to the performance of monolingual English-speaking peers
- The assumption is that the Spanish of these children is equivalent to that of monolingual Spanish-speakers

Previous Literature

- Previous research by Baron et. al, (2018) explored the relation between grammatical morpheme production in Spanish of typically developing Spanish-English bilingual children and mean length of utterance in words (MLUw)³
- A major limitation of this work was that two different elicitation tasks were used with grammatical structures being elicited using the morphosyntax section of the Bilingual English Spanish Assessment (BESA), and MLU calculated by a narrative retell task³
- Recent work suggests that MLU might not adequately represent the difference of Spanish skills in monolingual and bilingual speakers⁴

Objectives

Oral language sample analysis was used to answer the following questions:

1. To determine whether narratives could be used to assess grammatical structures found to be indicators of language impairment in the Spanish of bilingual children
2. To determine accuracy of these structures in narratives
3. To determine the relation between accuracy and MLU

Methods

Parent Study

- Francis and colleagues (2005) investigated factors that might influence the development of literacy and language of skills of native Spanish-speaking ELs during the initial year of schooling⁵

Participants

- A sub-sample of 127 oral language narratives of Mercer & Meyer’s “Frog Where Are You” story were selected from the parent study
 - 42% of participants were female, and 58% were male.
 - Age was on average 91.3 months (7;6 years) of age
 - All participants were documented as being in the second grade

Procedure

- Each narrative was coded for nine target morphological forms:

[P] Preterite, [I] Imperfect, [SA] Single Article, [PA] Plural Article, [PN] Plural Noun, [S] Subjunctive, [PP] Prepositional Phrase, [C] Conjunction, [D] Direct Object Clitic

- The Systematic Analysis of Language Transcripts (SALT) was used to analyze coded transcripts⁶

Results

Figure 1: Use of the nine target grammatical forms demonstrated in percentage.

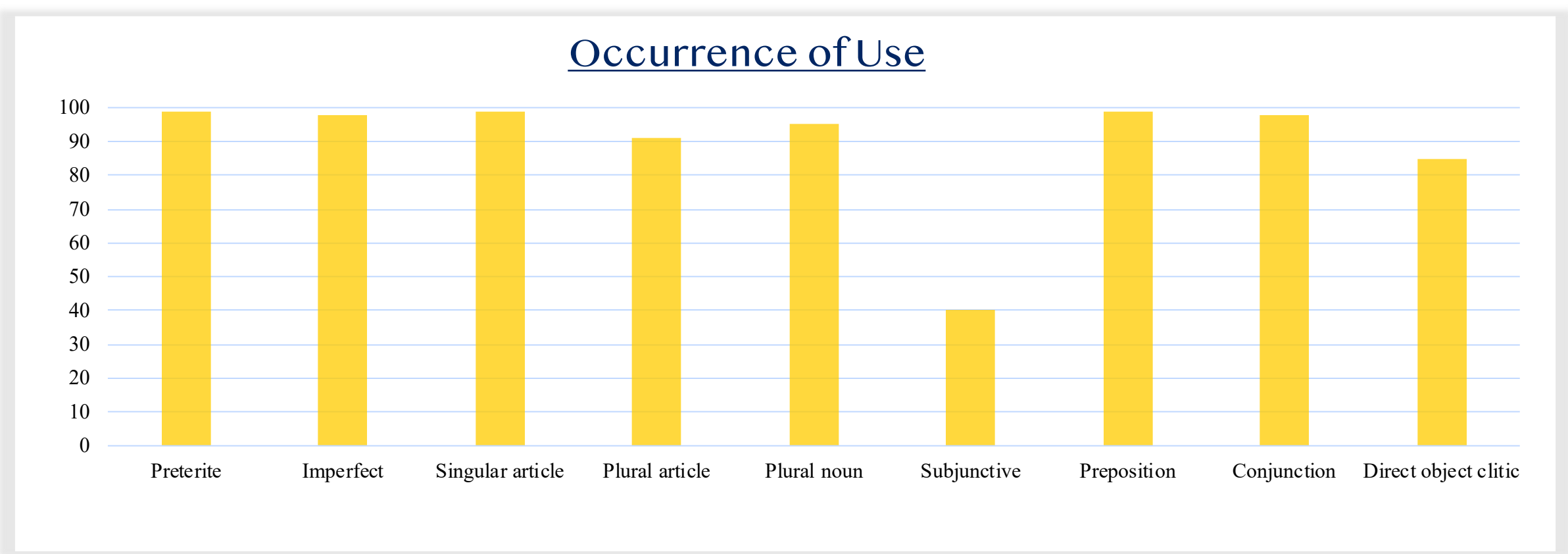


Figure 2: Overall accuracy of each of the nine target grammatical forms demonstrated in percentage.

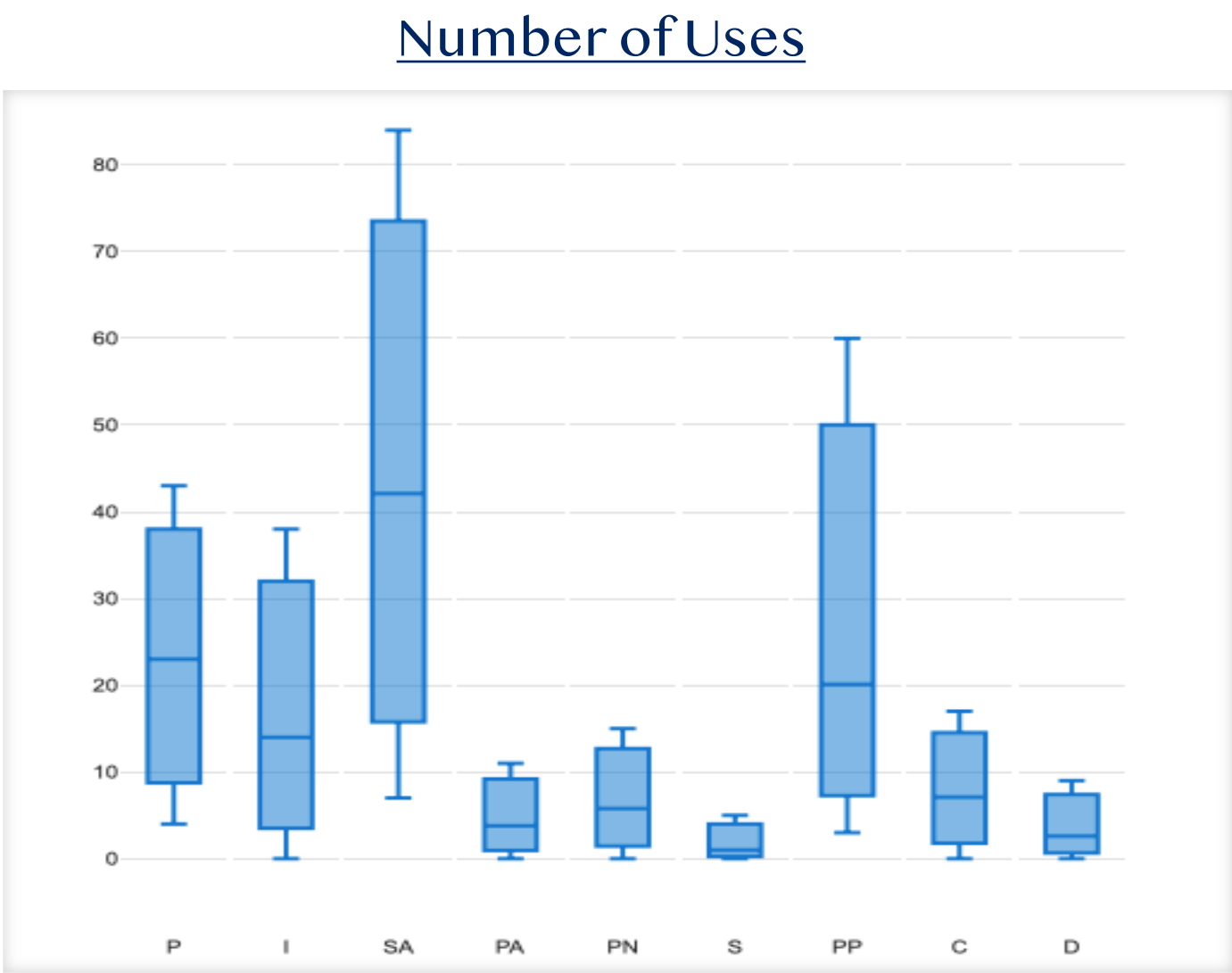
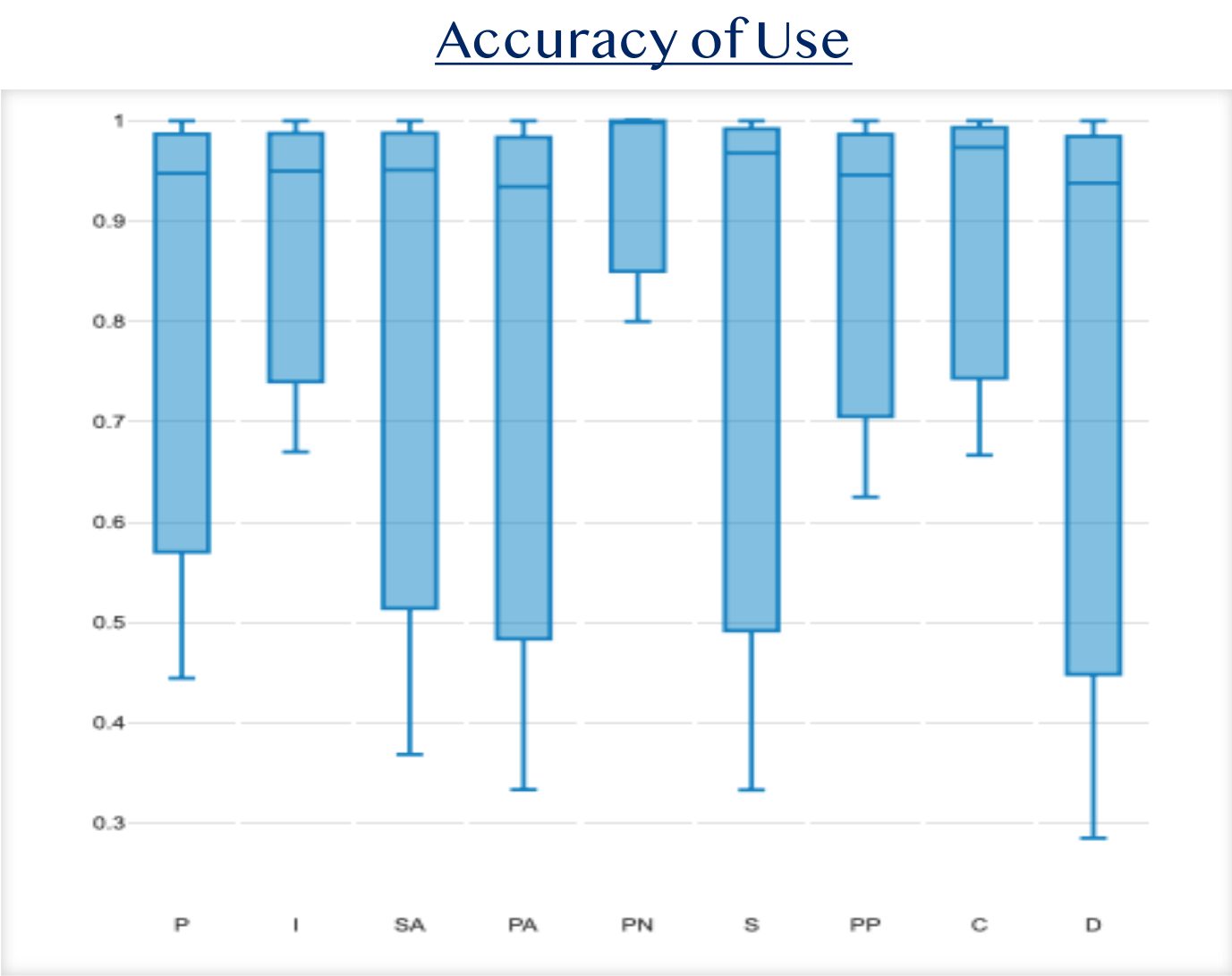


Figure 3: Accuracy of each grammatical morpheme.



Key: [P] Preterite, [I] Imperfect, [SA] Single Article, [PA] Plural Article, [PN] Plural Noun, [S] Subjunctive, [PP] Prepositional Phrase, [C] Conjunction, [D] Direct Object Clitic

Table 1: Children’s percent accuracy of grammatical morphemes by MLUw group as compared to Baron et al.’s 2018 study

Grammatical Morpheme	4.0-4.99		5.0-5.99		6.0-6.99		7.0-7.99		8.0-8.99	
	Present study	Baron study	Present study	Baron study	Present study	Baron study	Present study	Baron study	Present study	Baron study
Preterite	91.17	59.20	95.79	70.73	94.77	74.40	95.90	80.00	99.19	40.00
Imperfect	93.83	72.84	96.01	75.85	95.21	78.93	94.34	92.00	97.29	84.00
Singular article	82.60	74.25	96.28	78.66	98.12	85.27	98.90	87.50	99.60	75.00
Plural article	83.03	63.18	94.38	68.29	96.07	75.60	91.66	83.33	100	60.00
Plural noun	100	75.37	99.54	80.49	99.19	86.61	98.95	95.00	100	70.00
Subjunctive	100	47.27	100	52.93	100	59.29	91.66	38.00	75.00	60.00
Preposition	93.69	51.99	95.24	56.30	93.26	62.50	96.43	60.00	98.21	63.33
Conjunction	95.27	70.15	96.86	73.98	99.26	79.46	98.64	80.00	100	86.67
Direct object clitic	96.59	51.34	94.08	51.95	89.81	64.29	100	58.00	100	56.00

Discussion

Use of Structures

- All structures were evident in the narratives of all 2nd graders; except for the subjunctive form
- Seven of the nine grammatical forms were used by >85% of participants, while subjunctive only used by about 40% of participants
- Similar findings to Baron et al³, some correlations between percentage of accuracy and MLU were considered to be significant, the patterns tend to vary with this sample

Accuracy of structures in narratives

- Accuracy level of participants increased over time with significant improvements noted in the single and plural article forms
- No significant changes noted with participants’ development in the subjunctive

Correlation between accuracy of grammatical forms and MLU

- Some correlations between percentage of accuracy and MLU were considered significant (P<0.05). However, they differed from those of Baron et al and some appeared suspicious (subjunctive being negatively correlated with MLU)
- Results reinforce work completed by Knowlton and Iglesias (2019) stated that correlations to MLU, even if significant might not be representative of syntactic complexity in this age group⁴

Clinical Implications

- Narratives can be used to assess grammatical structures typically used to identify Language Impairment in Spanish-speaking ELs.
- Language interference often seen as proficiency in the second language becomes higher⁷
- In order to adequately diagnose language delay and disorder in Spanish-English bilingual children, we must consider not only age and MLU, but other general measures of language development such as the subordination index and moving average type-token ration (MATTR)
- Narratives do not penalize child for not using form while traditional standardized tests do
- Imitation tasks needed to test structures that are low frequency/that the child may not know to prevent penalizing them

References

1 United States Census Bureau (2018). 2017 American Community Survey (ACS) Data. Retrieved from: <https://www.census.gov>.

2 National Center for Education Statistics {NCES}, (2019). English Language Learners in Public Schools. Retrieved from: https://nces.ed.gov/ipeds/data/ipeds_datacenter/ipeds_datacenter.asp

3 Baron, A., Bedore, L. M., Peña, E. D., Lovgren-Urbe, S. D., López, A. A., & Villagran, E. (2018). Production of Spanish grammatical forms in U.S. bilingual children. *American Journal of Speech-Language Pathology*, 27(3), 975-987.

4 Knowlton, H., & Iglesias, A. (2019). *Spanish Skills of Monolingual and Bilingual School-Age Students*. Poster presented at the American Speech-Language-Hearing Association Convention, Orlando, FL.

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6 Miller, J., & Iglesias, A. (2008). Systematic Analysis of Language Transcripts (Research Version 2008) [Computer Software]. Madison, WI: SALT Software.

7 Anderson, R. (2012). First language loss in Spanish-speaking children: patterns of loss and implications for clinical practice. In Goldstein, B (Ed.) *Bilingual Language Development and Disorders in Spanish-English Speakers*, 2, (pp. 193-212). Baltimore, MD: Brookes Publishing.