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# The Effects of Language Proficiency on Narrative Macrostructure in Spanish-English Bilinguals

Jenny Magallon  
*Portland State University*

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The Effects of Language Proficiency on Narrative Macrostructure in Spanish-  
English Bilinguals

by

Jenny Magallon

A thesis submitted in partial fulfillment of the  
requirements for the degree of

Master of Science  
in  
Speech and Hearing Sciences

Thesis Committee:  
Maria Kapantzoglou,  
Chair Amy Donaldson  
Teresa Roberts

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2022

## Abstract

Bilingual children of the same age may have different narrative skills depending on the quantity and quality of their experiences in the two languages. Thus, children's storytelling skills can vary depending on children's oral proficiency in each language. The present study examined the effects of oral proficiency on story structure in forty 5- to 7-year-old Spanish-English speaking children using Spanish and English samples from story retelling tasks. Language proficiency was measured as continuum of performance using the Spanish-English Language Proficiency Scale (SELPS; Smyk et al., 2013). To estimate the effects of Spanish and English proficiency on story structure, linear regressions were conducted across the two languages on five dependent variables: total number of elements, number of complete episodes, initiating events, actions, and outcomes. In Spanish, results indicated that language proficiency accounted for the variability in all story structure measures except initiating events and actions. In English, language proficiency accounted for the variability in all dependent variables except story outcomes. Findings indicate language proficiency effects on story structure when working with bilingual children. Therefore, story structure scores should be interpreted with caution, taking into account children's proficiency level in each language.

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## Introduction

Narratives are a valuable tool for evaluating bilingual<sup>1</sup> children's language skills. Studies on bilingual children have focused at two levels of narrative analysis: the microstructure, which includes analyses at the sentence level, and the macrostructure. Macrostructure refers to the overall story organization or else story structure (Bitetti et al., 2020; Cleave et al., 2010; Hipfner-Boucher et al., 2014) and it includes elements such as setting, characters, initiating events, plans, actions, internal responses, and outcomes (Fichman et al., 2017; Fiestas & Peña, 2018; Hipfner-Boucher et al., 2014; Muñoz et al., 2003). How children organize their stories is of particular interest given that children's ability to tell stories is associated with socialization skills and academic abilities (Botting, 2002; Schick & Melzi, 2010). Research shows that studying narratives can tell us about later reading and writing skills (Paris & Paris, 2003; Snow & Dickinson, 1990). In monolingual children, these skills develop gradually with age. In bilinguals, besides age, language experiences with each of the two languages might also affect narrative development (Fiestas & Peña, 2004). Children of the same age may have very different narrative skills depending on the quantity and the quality of experiences in the two languages.

Specifically, language proficiency in each language is a main factor that could be affecting storytelling skills. Language proficiency in a language is typically conceptualized as a continuum of performance in lexical diversity, grammaticality, syntactic complexity and verbal fluency (Iwashita et al., 2008; Norris & Ortega, 2009).

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<sup>1</sup> We adopted a functional approach to bilingualism. according to which bilingual children are those children who use two languages to succeed in the environment (Kohnert, 2010, 2013).



There are several studies that have explored how proficiency might affect story structure (Bitetti et al., 2020; Fichman et al., 2017; Hipfner-Boucher et al., 2015). Findings are mixed, with some studies suggesting proficiency affects story structure (Dosi & Douka, 2021; Bitetti et al., 2020; Lucero, 2016) while others not indicating any remarkable relationship (Kupersmitt & Armon-Lotem, 2019). It is important to better understand how language proficiency is associated with story structure, because this study can contribute to a better understanding of typical language development in bilinguals, children's academic performance, and whether supports are needed.

One of the challenges when evaluating the relationship between children's proficiency in each language and story structure is how language proficiency is measured. Indirect measures, such as teacher and parent report have been frequently used to obtain information about children's proficiency in each language or language dominance (Bedore et al., 2011; Kupersmitt & Armon-Lotem, 2019; Simon-Cereijido & Gutiérrez-Clellen, 2009). However, indirect measures may not reflect proficiency well in different linguistic contexts, because the relative strength of each language might change across contexts (Rojas et al., 2016). Also, parents and teachers may focus on only some language characteristics and not all relevant language domains (Bedore et al., 2011). Alternatively, direct measures, such as scores on standardized subtests have also been used to determine a child's language proficiency (Bitetti et al., 2020; Kupersmitt & Armon-Lotem, 2019; Lucero, 2016). Yet, standardized tests may not measure language proficiency effectively as bilingual students might underperform due to lack of exposure to academic language included in such tests (Pray, 2005). Language sample analysis is currently one of the most useful tools for evaluating proficiency (Klee et al., 2004;

Simon-Cerejido & Gutierrez-Clellen, 2007) and it allows for proficiency to be assessed in the same context as story structure. The purpose of this study is to examine the relationship between proficiency and story structure in 5- to 7-year-old Spanish-English speaking children using oral language samples elicited through story retelling tasks.

### **Measurement of Story Structure in Narratives**

Studies have used a variety of methods to measure story structure in language samples. Some studies measured macrostructure by using a published tool, for example the narrative scoring scheme (NSS) and the Multilingual Assessment Instrument for Narratives (MAIN; Bitetti et al., 2020; Boerma et al., 2016; Gagarina et al., 2012) whereas other studies identified and rated main elements of story structure in language samples (Duinmeijer et al., 2012; Fichman et al., 2017; Kupersmitt & Armon-Lotem, 2019; Muñoz et al., 2003). Measures that are based on language sample analyses have the advantage of having high ecological validity, and therefore, they have been used to analyze narratives and assess the language abilities of children from various cultures (Muñoz et al., 2003).

Studies that used language samples vary in the way in which they elicit narratives. For example, in some cases narratives are elicited through storytelling and story retelling tasks (Bitetti et al., 2020; Epstein & Phillips, 2009; Fichman et al., 2017; Hipfner-Boucher et al., 2014; Muñoz et al., 2003), and in other cases the authors use personal narratives (Pfaff, 2001). Story retelling tasks have several advantages for assessment purposes, including the structure they provide facilitating standard procedures and the presence of a model. The presence of a model during the assessment is particularly important for children from culturally diverse backgrounds, considering differences in

experiences, and therefore in understanding of task expectations. Finally, the story retelling procedures help scaffold children's retellings, which can improve the length, structure, and content of the child's narrative, and thus, better understand the child's abilities compared to storytelling elicitation tasks (Méndez et al., 2018).

Another important element in the type of language sample elicitation is the presence or lack of pictorial support. Lack of pictorial support in personal narratives or story retelling tasks increases the task demands for memory and imagination skills (Coelho et al., 1990). Thus, story retelling tasks with pictorial support help reduce related bias when assessing narrative structure, increase the length of narratives, and therefore, might allow for more accurate measurement of the children's linguistic abilities. The present study used story retelling tasks with pictorial support to evaluate the relationship between language proficiency and story structure skills.

### **Story Structure in Typically Developing Bilingual Children**

There are several studies that indicate that bilinguals use a similar story structure to English monolinguals (Boerma et al., 2016; Hipfner-Boucher et al., 2014; Kupersmitt & Armon-Lotem, 2019), but they might demonstrate different level of performance compared to monolingual peers. For instance, a study by Hipfner-Boucher and colleagues (2014) suggested that English language learners, who were exposed to another language at home besides English (e.g., Arabic, Bengali, Cantonese, Dari, Hebrew, Hindi, Korean, Mandarin, Nepali, Portuguese, Russian, Spanish, Telugu, Turkish, Twi, Vietnamese) included fewer elements of story structure in their narratives; nevertheless, there was no significant difference in the story structure of bilingual subgroups and English monolinguals. In addition, Kupersmitt and Armon-Lotem, (2019) found that English-

Hebrew bilingual children and Russian-Hebrew bilingual children – simultaneous or early sequential bilinguals – who were less exposed to literacy used less aspectual markers and temporal connectors in their narratives compared to English monolinguals, but nonetheless results indicated similar development of story structure.

Performance on story structure can be different in bilinguals than in monolingual peers due to a variety of factors. For example, some cultural differences might affect narrative abilities, such as different expectations for narrative use, variability in the level of familiarity with different types of narratives (e.g., accounts, retellings, event casts) and focus on structure and organization versus on conversational features of narratives (Beaumont, 1992; Kayser & Restrepo, 1995; McCabe, 1997; Melzi, 2000). Children develop narrative abilities through exposure to story models and scaffolding from adults (Hudson, 1993), thus bilinguals' performance is dependent on their experiences with stories in their culture. As a result, typically developing bilingual children might perform differently in narrative tasks compared to monolingual peers due to different cultural experiences.

The amount of previous experiences with linguistic structures may also affect story structure (Berman & Slobin, 2013). For example, the home literacy environment has been found to affect children's narrative abilities (Leseman et al., 2007). Book reading is found to affect cognitive skills that are important when making inferences, problem solving, and anticipating events in a narrative (Hammett et al., 2003; Pelletier & Wilde Astington, 2004; Sigel et al., 1993). Bitetti and Scheffner Hammer (2016) found that children that were read to at a greater frequency scored higher on story structure than those children to whom caregivers read rarely. Many bilinguals might have low home

literacy due infrequent storybook reading which may be affected by available time and resources within families (Fry & Gonzales, 2008), thus, low amount of previous experiences with linguistic structures might affect their performance on measures of narrative structure.

Vocabulary knowledge is another important factor that affects story structure, considering that narrators need specific vocabulary to describe story structure elements (Orizaba et al., 2020). Bilingual children are often simultaneously learning vocabulary and linguistic structures when they start attending school (August et al., 2016), and/or they might be undergoing language loss for their first language depending on the degree to which the two languages are supported. During such changes in bilingual language development, variability in vocabulary knowledge in a language might affect narrative structure scores in that language.

Finally, different levels of comprehension skills in bilinguals may also affect narrative skills (Cain & Oakhill, 1996). Therefore, in bilinguals, different proficiency levels will be associate with different language comprehension skills, and thus with different levels of story comprehension and storytelling (Lesaux et al., 2010). Also, comprehension is highly associated with oral vocabulary as individuals need to understand vocabulary to comprehend written and spoken stories (Kim, 2012). Children from low socio-economic backgrounds, as many bilinguals are (Shrider et al., 2021), might have different vocabulary compared to what is used in the academic context and it has been found that they usually perform lower in reading comprehension tasks (Spencer & Wagner, 2018). Overall, characteristics such as the amount of experiences with stories, vocabulary knowledge, and comprehension skills, which are related to language

proficiency, might affect the story structure performance of bilingual children differently compared to monolingual peers.

### **Language Proficiency and Story Structure**

The relationship between a child's proficiency in each language and story structure has been primarily studied by examining differences in story structure between groups of children as determined by the relative strength of each of their languages, such as balanced Spanish–English bilinguals, first language–dominant and second language–dominant groups. Language proficiency is typically conceptualized as a continuum of performance versus a categorical characteristic, and there are no studies to our knowledge that have examined story structure and treated language proficiency as a continuum. Therefore, the review that follows discusses the general findings of this body of work.

Some studies show that there is a relationship between language proficiency and macrostructure (Bitetti et al., 2020; Dosi & Douka, 2021; Lucero, 2016). Bitetti and colleagues (2020) investigated the cross-language and within-language microstructure relations in narratives of Spanish-English bilingual children. Two hundred 3- to 5-year-old children of Latino heritage participated in the study and were classified into two groups: balanced bilinguals and Spanish dominant, based on a standardized language test given in English and in Spanish. Macrostructure skills were assessed using the narrative scoring scheme (NSS) based on wordless picture books. Results indicated that children with higher scores on vocabulary measures produced greater macrostructure elements. Diverse vocabulary can support more detailed description of story elements such as characters, setting, as well as internal responses (e.g., emotions and thought processes). In addition, Dosi & Douka (2021) studied narrative productions of second language learners

(L2) of Greek. Ninety-one children aged 8-18 years narrated a written story based on wordless pictures. Macrostructure was assessed by examining three episodes and calculating a story structure score. Results indicated that children with higher language proficiency in their second language, based on a standardized test, demonstrated better story structure abilities. Finally, Lucero (2016) studied narrative retelling abilities in English and Spanish of Spanish-speaking emergent bilinguals. Sixty-five children, in kindergarten, Grade 1 and Grade 2, participated in the study. Macrostructure narrative abilities were assessed using the narrative scoring scheme (NSS) based on story retelling tasks using wordless picture books. Results indicated that performance on story retelling was better in children's first language of Spanish-speaking emergent bilinguals.

On the other hand, Kupersmitt & Armon-Lotem (2019) found no remarkable relationship between proficiency and macrostructure. The authors studied the story structure in Hebrew monolinguals, a mix of sequential and simultaneous English-Hebrew bilinguals, and Russian-Hebrew bilinguals. One hundred fifty children aged 5-7 years old participated in the study and were classified into groups by their linguistic skills via a parent questionnaire and a proficiency test. Macrostructure was assessed using picture-based narratives and evaluating causal relations between the episodic components: initiating event, goal, attempt, internal reaction, and outcome. Typically developing bilingual children performed similarly to their monolingual peers. Results suggested that language proficiency did not yield differences for narrative performance.

### **Measurement of Language Proficiency**

How language proficiency is measured is one of the main challenges when studying the relationship between children's proficiency in each language and story

structure (Bedore et al., 2012). Various measures have been used in studies to gain information about language proficiency such as teacher or parent reports, standardized tests, and language samples (Bedore et al., 2011; Gutierrez-Clellen et al., 2000; MacSwan & Rolstad, 2006). Indirect measures such as teacher and parent reports might not reflect well children's abilities across various contexts and the different language domains targeted during the evaluation (Gutiérrez-Clellen & Kreiter, 2003; Marchman & Martínez-Sussmann, 2002). Additionally, direct measures such as standardized tests may be heavily focused on academic language. This might lead to underperformance when bilinguals are tested due to limited academic experiences in the mainstream system (Bitetti et al., 2020; Kupersmitt & Armon-Lotem, 2019). Language sample analyses have been shown to be a valuable measure that assess language skills in bilinguals (Dollaghan & Horner, 2011; Restrepo, 1998). They have high ecological validity and allow clinicians to study the microstructure, macrostructure, and language proficiency in the same context. Previous studies that examined story structure in bilinguals using language samples examined groups of children as determined by the relative strength of each of their languages. Nevertheless, placing participants into such groups does not account for within-group variability in proficiency levels. For instance, in the literature, balanced groups might differ in the level of proficiency across languages, and dominant groups might differ in the range of imbalance between the two languages. To account for the variability in proficiency levels, the present study will evaluate the effects of proficiency on story structure measuring proficiency as a continuum of performance. This relationship will be examined based on Spanish and English oral language samples, in 5- to 7-year-old Spanish-English speaking children.



## Method

### Participants

Forty typically developing Spanish-English speaking children, 5-7 years of age participated in this study ( $M_{age} = 74.62$ ;  $SD = 8.04$ ). There were 21 males and 19 females. All children were recruited from kindergarten and first grade Spanish dual immersion programs in public schools in a metropolitan area in the northwestern United States. Investigators sent permission forms and information about the research in Spanish and English to parents/guardians. These materials were given to teachers to be distributed to all parents/guardians of Spanish-English speaking children in the target age ranges. The school programs followed a 90/10 model for dual immersion. Instruction in kindergarten was delivered 90% in Spanish and 10% in English. For each subsequent year, the percentage of Spanish was decreased by 10% and increased in English. By fourth grade, instruction in the two languages is a balanced 50 - 50%. In this model literacy was taught in Spanish first. Regarding participants' language dominance, as measured by SELPS (Smyk et al., 2013) based on language samples, 12 children had stronger Spanish (a difference of .5 points or greater on the 5-point scale of SELPs), 18 were balanced, and 10 had stronger English. All children were exposed to Spanish from birth and came from Spanish-speaking or bilingual Spanish-English homes with at least one of their parents speaking Spanish. The great majority of children spoke Mexican Spanish and were from lower socioeconomic backgrounds determined on the basis of eligibility for free or reduced-price lunch from parent report.

All child participants met the following criteria:

1. No history of hearing loss, sensorimotor or neurological problems, severe psychological disorders, or health problems, according to parent report.
2. Passed a hearing screening at 500 Hz at 25 dB and at 1000 Hz, 2000 Hz, and 4000 Hz at 20 dB in both ears (ASHA Panel on Audiologic Assessment, 1997).

All children were classified as having typical language development and also met three of the following four criteria for at least one of their two languages: a) parent report indicated no concern of language impairment (Pratt et al., 2020; Restrepo, 1998); b) the number of grammatical errors per C-unit in the language sample was below 20% (Restrepo, 1998); c) the mean length of utterance in words was age appropriate (Simon-Cereijido & Gutierrez-Clellen, 2007); and, d) 5- and 6-year-old children scored at or above the cut score on the Morphosyntax subtests of BESA, and 7-year-old children within the average range (cut score = 1 *SD* below the mean) on two grammatical subtests of the CELF-4 Spanish (Word Structure and Recalling Sentences; Wiig et al., 2006) and CELF-5 in English (Word Structure and Recalling Sentences; Wiig et al., 2006).

### **General Procedures**

Parent questionnaires and consent forms were distributed and collected by teachers. Parents completed the questionnaires at home and returned them to the teachers. Children whose parents agreed to participate in the study and returned the parent questionnaires were further evaluated. The remaining qualification measures were administered in two separate sessions of 40–60 minutes each within a two-week interval. Trained bilingual examiners blind to the children’s language status assessed the children during the school day in a quiet area in the school. To maintain the same spoken language

throughout each session, in the first session children completed the hearing screening and the Spanish diagnostic measures. In the second session, children completed the English diagnostic measures. Because children's assignment to examiners was random in each session, many children were tested by different examiners in each language while others had the same examiner in both sessions. Examiners were female, bilingual Spanish–English research assistants and, considering the school and broader social context, examiners presented themselves to children as bilinguals as well. They established rapport with the children in the beginning of the session in the target language, and explicitly shared with them the plan to focus on one language in each of the two sessions. The examiners gave occasional reminders to use the target language during each task if children switched to using only the non-target language.

## **Measures**

### ***Parent Report***

All parents filled out an experimenter created questionnaire requesting demographic information, parents' and child's education, child's language development, child's medical history, family history related to language and learning skills, and child's exposure to and use of each language.

### ***BESA***

The BESA is a standardized, norm-referenced test designed as a diagnostic tool for children with potential developmental language disorder who speak Spanish. The Morphosyntax subtest was used because it is considered to be accurate between the ages of 5 years and 6 years 11 months in bilingual children. According to the technical

manual, for Spanish-English speaking children between 5 years and 6 years 11 months, the sensitivity of the morphosyntactic subtest is 88.6-88.9 and the specificity is 81.6-88.2.

### ***CELF-4 Spanish***

Seven-year-old children were evaluated for potential developmental language disorder in Spanish using CELF-4 Spanish according to the manual and considering dialectal variations. The test manual reports sensitivity of 96% and specificity of 87% for the core language score at 1 *SD* below the mean.

### ***CELF-5***

Seven-year-old children were evaluated for DLD in English using CELF-5 according to the manual and considering dialectal variations. The test manual reports sensitivity of 100% and specificity of 91% for the core language score at 1 *SD* below the mean.

### ***Language Sample Analyses***

A language sample in the form of a story retell was collected from each child in each language to assess their language abilities based on the number of grammatical errors in the language sample (Restrepo, 1998). The examiner read the script of two different wordless picture books, “A Boy a Dog a Frog and a Friend” (Mayer & Mayer, 1967) and “Frog on His Own” (Mayer, 1973) in the target language, and then asked the child to retell the story to the examiner (Systemic Analysis of Language Transcripts/SALT; Miller & Iglesias, 2012). The two stories were randomly assigned to the two languages for each student. Narratives were transcribed and coded using the SALT (Miller & Iglesias, 2012) computer program. Each story included five episodes

and the following narrative structure elements were identified in the children's retell: characters, setting, initiating event, internal response, plan, action, and outcome.

**Reliability for language samples analyses.** Two trained fluent bilingual examiners scored 32% of the samples independently for C-units and story elements. Interrater reliability was 95% for 1-point-off agreement for number of C-units, and 96% for story elements. Any discrepancies were resolved by consensus with a third research assistant.

### ***SELPS***

Children's Spanish and English language samples, based on the Frog Stories, were used to assess each child's language proficiency using SELPS. SELPS measures sentence length and complexity, grammaticality, vocabulary, and fluency. An overall proficiency level was determined ranging from 1 to 5 (1 = silent/observer, 2 = a few words or formulaic phrases, 3 = short sentences and phrases with multiple grammatical errors, 4 = full sentences with a few grammatical errors, 5 = native-like productions). The weighted  $k$  estimate for the scale is .81 indicating high interrater reliability. Language samples were rated after they were transcribed, having as a reference both the language sample transcription and the audio file. For the present study, raters focused on utterances in the target language and did not penalize for codeswitching. Raters were bilingual Spanish–English research assistants who underwent training for using the scale.

**Reliability for SELPS.** Two trained fluent bilingual examiners scored all language samples independently. There was 91% .5-point off agreement. For differences of .5 point or smaller the two scores were averaged. For differences greater than .5 a third fluent bilingual examiner scored the language samples independently. The two scores

with a difference of .5 points or smaller were averaged. Larger differences were solved by consensus among the three examiners.

## **Analyses**

Data were prepared for statistical analysis following Kline (2010) and Tabachnick and Fidell (2007). After importing data in SPSS (Version 23, IBM Corp.), data were screened for missing values and univariate outliers defined as data points 4 SDs from the mean (Kline, 2010; Stevens, 2002). The percentage of missing data ranged from 0% to 9.23% across individual variables, with a total of 12 missing values out of 520 data points (2.30%). The reasons for missing scores included inability to test a child at a given time, recording equipment failures, and data entry concerns. These reasons are unrelated to the target ability; therefore, data were assumed to be missing completely at random (Little & Rubin, 1989; Rubin, 1976). Distributions were visually inspected, and Kolmogorov–Smirnov tests of normality were conducted to assess the normality assumption (Table 1). For each language, five multiple regressions were conducted to estimate the effects of Spanish and English language proficiency on story structure on the following five dependent variables: total number of elements, number of complete episodes, initiating events, actions and outcomes, based on the Spanish and English language samples.

## **Results**

### **Descriptive Statistics**

Correlations, means, medians, standard deviations, variance, skewness, and kurtosis for the study variables are included in Table 1.

**Table 1**

Summary of correlations, means, standard deviations, variances, medians, skewness, and kurtosis for each variable.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Proficiency SPA	-											
2. Proficiency ENG	.05	-										
3. Total Elements SPA	.50**	.05	-									
4. Complete Episodes SPA	.37*	.27	.69**	-								
5. Initiating Events SPA	.37*	.00	.84**	.60**	-							
6. Actions SPA	.24	.00	.77**	.61**	.68**	-						
7. Outcomes SPA	.33*	.26	.70**	.79**	.51**	.51**	-					
8. Total Elements ENG	-.05	.50**	.40*	.44**	.40*	.39*	.41**	-				
9. Complete Episodes ENG	.11	.44**	.32*	.35*	.19	.15	.33*	.75**	-			
10. Initiating Events ENG	-.04	.40*	.29	.43**	.32	.38*	.44**	.71**	.53**	-		
11. Actions ENG	.16	.46**	.49**	.52**	.39*	.43**	.48**	.74**	.54**	.43**	-	
12. Outcomes ENG	-.02	.34*	.15	.19	.15	.17	.08	.76**	.72**	.38*	.49**	-
Mean	3.64	3.62	13.40	1.12	3.12	2.98	2.10	13.9	.95	2.97	3.23	1.82
SD	.87	0.69	5.17	1.11	1.20	1.48	1.41	5.46	.97	1.42	1.29	1.12
Variance	.76	.48	26.71	1.24	1.45	2.18	1.99	29.78	.95	2.03	1.66	1.26
Median	3.75	3.75	13	1	3	3	2	14	1	3	3	2
Skewness	.76	0.48	26.71	1.24	1.45	2.18	1.99	-.10	.95	2.03	1.66	1.26
Kurtosis	-1.63	-.24	-.15	.80	-.25	-.56	-.07	-.01	.83	-.53	-.69	.14

Note. SPA = Spanish sample. ENG = English sample.

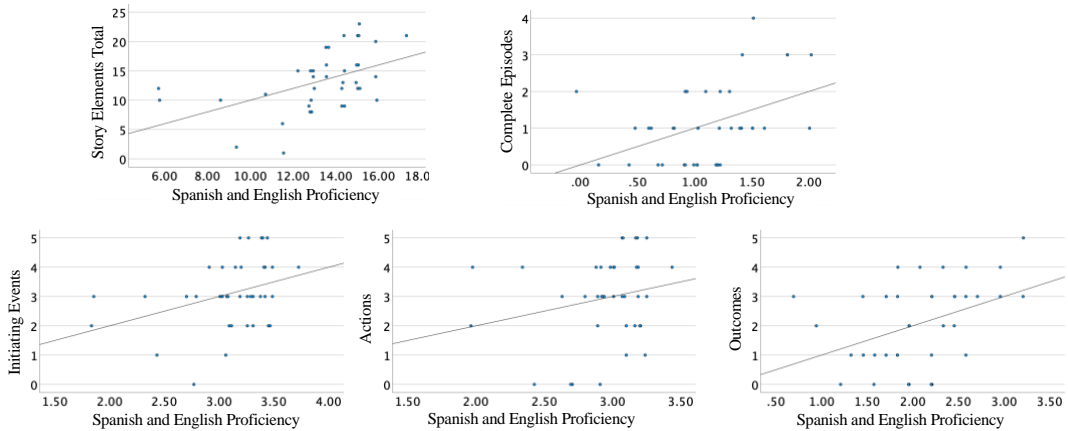
\*\*  $p < 0.01$ . \*  $p < 0.05$ .

The total number of words per language sample across the two languages was estimated and compared. No significant differences were noted at  $\alpha = .05$  between the Spanish samples and the English samples (Spanish:  $M = 194.58$ ,  $SD = 74.15$ ; English:  $M = 215.58$ ,  $SD = 89.79$ ). Children's scores on total number of story elements, number of complete episodes, initiating events, and outcomes in the Spanish samples were associated with their respective scores in the English samples. There was not a statistically significant relationship between children scores on actions in the two languages. Regarding within-language correlations, for both languages there was a statistically significant relationship between the two global measures and each of the three main episode elements. So, children who scored high in total number of elements and complete episodes, also scored high in number of initiating events, actions, and outcomes. As anticipated, there were not Spanish and English proficiency associations. For children with typical language development, variability in language proficiency patterns across languages is expected.

Figures 1 and 2 include a graphical representation of the effects of language proficiency on the five dependent variables based on the Spanish and English language samples respectively.

**Figure 1**

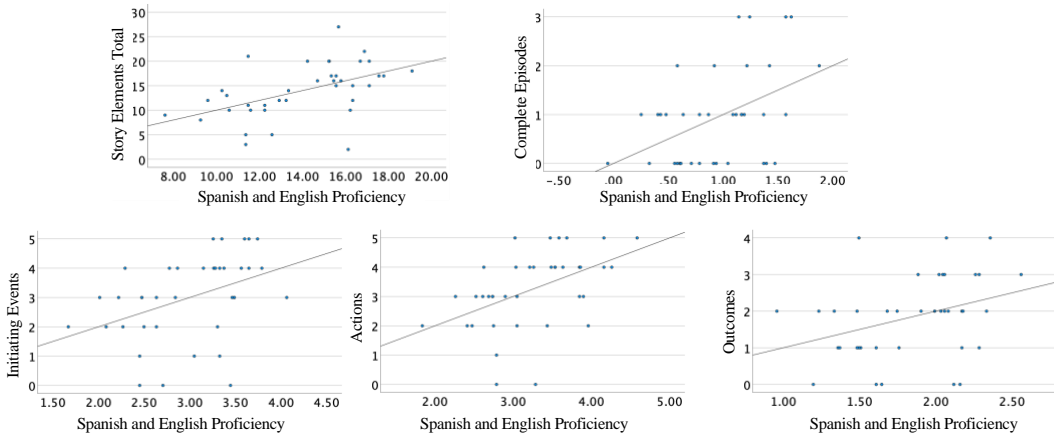
*The Effects of Spanish and English proficiency on the Five Story Structure Measures Based on Spanish Samples.*



*Note.* The unstandardized predicted values of the regression model were used to represent the effects of Spanish and English proficiency on each of the five story structure measures. In the Spanish samples, the regression model accounted for the variability in all story structure measures except initiating events and actions.

**Figure 2**

*The Effects of Spanish and English proficiency on the Five Story Structure Measures Based on the English Samples.*



*Note.* The unstandardized predicted values of the regression model were used to represent the effects of Spanish and English proficiency on each of the five story structure measures. In the English samples, the regression model accounted for the variability in all story structure measures except outcomes.



### **Total Number of Story Elements**

Regarding the *Spanish* language samples, language proficiency accounted for 19.6% of the variability in total number of story elements in Spanish,  $F(2, 35) = 5.52$ ,  $p < .01$ , adjusted  $R^2 = .20$  (Figure 1). Based on the regression coefficients, Spanish proficiency had statistically significant effect on total number of story elements in Spanish ( $p < .01$ ), but English proficiency did not account for the variability in total number of story elements in Spanish ( $p = .89$ ).

Regarding the *English* language samples, language proficiency accounted for 21.8% of the variability in total number of story elements in English,  $F(2, 35) = 6.15$ ,  $p < .01$ , adjusted  $R^2 = .22$  (Figure 2). Based on the regression coefficients, English proficiency had statistically significant effect on total number of story elements in English ( $p < .01$ ), but Spanish proficiency did not account for the variability in total number of story elements in English ( $p = .63$ ).

### **Number of Complete Episodes**

Regarding the *Spanish* language samples, language proficiency accounted for 13.7% of the variability in number of complete episodes in Spanish,  $F(2, 35) = 3.95$ ,  $p = .03$ , adjusted  $R^2 = .14$  (Figure 1). Spanish proficiency had statistically significant effect on total number of complete episodes in Spanish ( $p = .04$ ), but English proficiency did not account for the variability in number of complete episodes in Spanish ( $p = .11$ ).

Regarding the *English* language samples, language proficiency accounted for 15.5% of the variability in number of complete episodes in English,  $F(2, 35) = 4.39$ ,  $p = .02$ , adjusted  $R^2 = .16$  (Figure 2). Based on the regression coefficients, English proficiency had a statistically significant effect on complete episodes in English ( $p < .01$ ),

but Spanish proficiency did not account for the variability in complete episodes in English ( $p = .56$ ).

### **Initiating Events**

Regarding the *Spanish* language samples, language proficiency did not account for the variability in number of initiating events in Spanish,  $F(2, 35) = 2.50, p = .10$ , adjusted  $R^2 = .08$  (Figure 1).

Regarding the *English* language samples, language proficiency accounted for 11.8% of the variability in number of initiating events in English,  $F(2, 35) = 3.50, p = .04$ , adjusted  $R^2 = .12$  (Figure 2). Based on the regression coefficients, English proficiency had statistically significant effect on initiating events in English ( $p = .01$ ), but Spanish proficiency did not account for the variability in initiating events in English ( $p = .71$ ).

### **Actions**

Regarding the *Spanish* language samples, language proficiency did not account for the variability in number of actions in Spanish,  $F(2, 35) = 9.00, p = .42$ , adjusted  $R^2 < .01$  (Figure 1).

Regarding the *English* language samples, language proficiency accounted for 18.9% of the variability in number of actions in English,  $F(2, 35) = 5.31, p = .01$ , adjusted  $R^2 = .19$  (Figure 2). Based on the regression coefficients, English proficiency had statistically significant effect on actions in English ( $p < .01$ ), but Spanish proficiency did not account for the variability in actions in English ( $p = .37$ ).

### **Outcomes**

Regarding the *Spanish* language samples, language proficiency accounted for 11.2% of the variability in number of outcomes in Spanish,  $F(2, 35) = 3.35, p = .05$ ,

adjusted  $R^2 = .11$  (Figure 1). None of the predictors alone had statistically significant effect on outcomes in Spanish (Spanish proficiency,  $p = .06$ ; English proficiency,  $p = .13$ ).

Regarding the *English* language samples, language proficiency did not account for the variability in number of outcomes in Spanish,  $F(2, 35) = 2.32$ ,  $p = .11$ , adjusted  $R^2 = .08$  (Figure 2).

### Discussion

The purpose of this study was to determine the effects of language proficiency on story structure in 5- to 7-year-old Spanish-English speaking children using Spanish and English language samples from story retelling tasks. Spanish and English proficiency were estimated as a continuum characteristic using SELPS based on oral language samples, which were elicited through story retelling tasks with visual support. In Spanish, language proficiency accounted for the variability in all outcome measures except initiating events and actions. In English, proficiency accounted for the variability in all outcome measures except, outcomes. Specifically, results indicated that in the *Spanish* samples, Spanish proficiency affected the global measures of total number of story elements and complete episodes. Also, English proficiency did not account for variability in the Spanish samples with the exception of outcomes, which were affected by children's English and Spanish proficiency, but none of the proficiency scores alone, had a statistically significant effect on this measure. In the *English* samples, English proficiency affected total number of story elements, complete episodes, initiating events, and actions, and it did not affect the number of outcomes. Meanwhile, Spanish proficiency did not affect any of the story structure elements in the English samples.

Additionally, children's scores on total number of story elements, number of complete episodes, initiating events, and outcomes in Spanish were correlated with their respective scores in the English samples. There was no statistically significant relationship between children scores on actions in two languages.

The findings of Spanish proficiency effects on overall story structure performance as measured by two global measures (i.e., the total number of story structure elements, and total number of complete episodes) in the Spanish samples, and English proficiency effects on overall story structure in the English samples, is in line with previous studies that also found a positive relationship between language proficiency and story structure. For example, Lucero (2016) also found a relationship between proficiency, as measured by a standardized test, and story structure in Spanish-speaking emergent bilinguals in kindergarten, Grade 1 and Grade 2. Similarly, Dosi & Douka's (2021) findings indicated a positive relationship between language proficiency and story structure in the written narrative productions of second language learners of Greek. Findings were also consistent with Bitetti and colleagues (2020) that studied 3- to 5-year-old balanced bilinguals and Spanish dominant children. When children's proficiency in a particular language is high, strong comprehension and vocabulary skills can better support the development of story structure in the respective language compared to children with lower proficiency in the target language (Cain & Oakhill, 1996; Orizaba et al., 2020).

The findings of the current study that language proficiency affects story structure are in contrast with previous findings of no relationship between language proficiency and story structure (Kupersmitt & Armon-Lotem, 2019). For example, Kupersmitt & Armon-Lotem (2019) evaluated causal relations between the episodic components:

initiating event, goal, attempt, internal reaction, outcome of English-Hebrew, Russian-Hebrew bilinguals and compared the bilingual group to Hebrew monolinguals. This study found that language proficiency did not affect narrative performance, as typically developing bilingual children performed similarly to their monolingual peers. The authors reported that the home language was highly supported at home and in the after-school activities in these communities. It might be that home language in this case was supported enough that there was not significant variability in proficiency levels across the two languages.

Regarding each of the three required elements of a complete episode, the finding of Spanish and English proficiency affecting only some elements in the respective language is in line with Dosi and Douka's (2021) results of language proficiency also affecting only some aspects of story structure. Specifically, in the current study, results suggested that, in the Spanish samples, Spanish proficiency affected only story outcomes and not initiating events, or actions. This is likely because in Spanish, children might be more familiar and have more experience with sharing information about solutions to a problem than describing the actual problem (Slobin & Bocaz, 1988). Therefore, higher proficiency in Spanish might be associated with more frequent use of outcomes in Spanish stories. With respect to the English samples, English proficiency affected the scores on initiating events and actions, which is more in line with characteristics of story structure in cultures with a low-context communication style, as the mainstream culture, in which they might provide more details about the setting and the actions as opposed to focusing primarily on the outcomes (Stein & Glenn, 1975).

Regarding between-language associations, correlational analyses revealed that story structure elements were associated based on children's scores on global measures (i.e., total number of story elements and complete episodes) and for two out of the three elements of a complete episode – initiating event and outcomes. In other words, if children's total number of elements was high in one language, then a similar pattern was apparent in the other language. These findings are consistent with positive transfer of children's storytelling skills (Paradis & Kirova, 2014) and indicate that storytelling experiences in children's first language are expected to positively affect storytelling skills in the second language.

### **Clinical Implications**

The findings of the present study indicated language proficiency effects on story structure when working with bilingual children. At the same time, participants' Spanish and English proficiency varied ranging from low to high levels based on SELPs – this scale was used to measure proficiency as a continuum of performance based on Spanish and English oral language samples elicited through story retelling tasks. In addition, the relative strength of the two languages varied with some children being Spanish dominant, other English dominant and other balanced. This variability in language characteristics across bilingual children is typical, and it is also expected to change over time. Each child's Spanish and English proficiency are expected to change based on children's exposure, support, instruction, and experiences in each language over time. Given evidence that proficiency affects story structure, story structure scores should be interpreted with caution, taking into account children's proficiency level in each language. For example, as proficiency increases in a language, children are expected to

have better support for story structure development, and thus, they are likely to obtain higher story structure scores compared to children that might be experiencing language loss or are in the process of developing their proficiency in the target language.

Therefore, for accurate interpretation of story structure scores, it is critical to take into account the children's experiences with each language.

Further, findings of this study support positive transfer of storytelling skills – children's scores in Spanish were associated with children's scores in English. This suggests that children can use the strengths in their first language to tell similar narratives in their second language. Therefore, children who have not developed their English as second language enough yet, are likely to benefit from maintaining their storytelling and reading activities in their first language. As the story structure skills in the first language become stronger, story structure in the second language is also being supported. So, when children's proficiency in their second language is developed enough, story structure abilities will transfer from the first language and facilitate age-appropriate performance in the second language as well.

### **Limitations and Future Directions**

Story structure performance can vary across typically developing bilingual children due to a variety of factors. The current study focused on language proficiency effects on story structure, but it did not account for cultural differences within the bilingual group. This study did not account for children's experiences with storytelling in the two languages either. Such factors may play a role on story structure skills. Future studies can examine how these characteristics might affect story structure performance over and above language proficiency.

In addition, story structure performance might vary across different types of narratives. The present study evaluated stories elicited through Spanish and English story retelling tasks, which provide helpful structure and support for assessment purposes. It would be informative to examine the relationship between proficiency and story structure skills in more naturalistic contexts as well, using, for example, personal narratives. Many children, particularly from Latino backgrounds, might be better at producing personal versus fictional narratives (Allen et al., 1994; McCabe et al., 2008), and personal narratives are critical for effective communication and healthy socialization.



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