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Grammatical Error Types Using A Picture Description Task In English And Spanish With Young Children

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GRAMMATICAL ERROR TYPES USING A PICTURE DESCRIPTION TASK IN ENGLISH
AND SPANISH WITH YOUNG CHILDREN

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Lisa Valles

2019

DEDICATION

This thesis is dedicated to:

My parents whose endless support and overall confidence in me encouraged me to complete this
research.

My fiancé, whose patience, encouragement, and love allowed me to stay motivated till the end.

GRAMMATICAL ERROR TYPES USING A PICTURE DESCRIPTION TASK IN ENGLISH
AND SPANISH WITH YOUNG CHILDREN

by

LISA VALLES, B.S.

THESIS

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ABSTRACT

Purpose: The current study was part of a larger project examining diagnostic accuracy of various assessment tools for bilingual children living in a border community. The purpose of this project was to examine language sample measures in young children using a picture description task (Eisenberg & Guo, 2013) by answering the following questions:

1. What were the frequent types of errors exhibited by young children in English and Spanish?
2. Were there distinct types of grammatical errors across languages in bilingual children?

Methods: Participants were recruited from a large city on the US/Mexico border. There were 47 participants in the study. Parent and teacher questionnaires were completed to determine language history and current use in English and Spanish. Language samples were collected in Spanish and English using procedures adapted from Eisenberg and Guo (2013).

Results: Results showed that the participants exhibited more tense errors in English and more pronominal errors in Spanish which was consistent with previous literature, indicating validity for the Picture Description Task with bilingual children.

Discussion: The results from the current study were consistent with previous literature; participants produced more tense marker errors in English and more pronominal errors in Spanish. Additionally, there were more Code-switching occurrences in Spanish, which may have been due to the participants' greater English dominance as determined by the parent and teacher questionnaires. The picture description task showed promise in its use with bilingual children. Further research should examine error types in children with language impairment to identify potential markers.

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CHAPTER 1: LITERATURE REVIEW

1.1 Bilingual Language Development

Children who are bilingual are not two monolinguals in one, rather they have characteristics developed that are unique in both languages (Bedore & Pena, 2008). Children learning a second language are at risk for under and overidentification of language impairment in the school system due to the difficulty in determining whether problems are a result of a language difference or a true language impairment (Bedore & Pena, 2008). Children with undiagnosed or untreated language impairments persisting past age 3 will continue to fall further behind their peers as they get older (Eisenberg, Guo & Germezia, 2012). Therefore, early diagnosis of language impairment is greatly beneficial for early intervention.

Most standardized tests used in the diagnostic process have been developed based on English developmental norms. Testing a bilingual child using a standardized test that has been translated to Spanish is biased due to the differences in morphology between languages (Bedore & Pena, 2008). Standardized tests that have been translated to Spanish may not yield an accurate result for diagnosis since the test assumes that Spanish language development is the same as English language development. Additionally, the normative data of such a test does not fit the demographics of a bilingual child (Bedore & Pena, 2008).

Deciding if a child is developing language typically can be challenging for a speech language pathologist when the child has had exposure to more than one language. Since bilingual children are diverse in terms of language development, it is important to be informed about typical developmental patterns exhibited by bilingual children. For example, early morphological acquisitions in English include present progressive and prepositions but early morphemes in Spanish include articles, plurals and past tense (Baron et al., 2018). Therefore, speech language

pathologists must be aware of language developmental norms in both languages to effectively differentiate typical language development from language impairment. Research must be advanced in finding an index of the typical errors of bilingual children and how they compare to errors from their monolingual peers.

1.2 Language Samples

Language sampling is an efficient tool that can be used as an alternative to or in conjunction with standardized tests due to the fast transcription process (Miller, Iglesias, Andriacchi, & Nockerts, 2015). Language sampling has been incorporated as an alternative method to standardized assessment measures of language ability due to its ecological validity (Kapantzoglou, Fergadiotis & Restrepo, 2017). As a language transcriber becomes familiar with language sample analysis, they may prefer this measure due to its efficiency and ability to measure micro linguistic constructs. (Miller et al., 2015; Kapantzoglou et al., 2017). Language sample measures can also provide standardized scores to compare children to their age matched peers (Miller & Iglesias, 2015).

Much of the research on Language Sample Analysis (LSA) has focused on narratives, which are not always successful in young children (Gutierrez-Clellen, Restrepo & Simon-Cerejido, 2006). Children typically begin to produce narratives at age five but do not produce narratives with complete story structure until nine years of age (Bedore & Pena, 2008). Eliciting language samples in younger children is usually done in a play context with toys or spontaneous conversations. While a play sample is naturalistic, the variability in topics produced by the children can make their utterances difficult to transcribe when the context is unknown (Eisenberg et al., 2012). To facilitate gathering language samples from young children, a picture description task was developed to elicit language samples from younger children by Eisenberg et al. (2012). The

picture description task provided a more standardized means of gathering a language sample by following a set protocol and prompts about a picture. The elicitation task allowed the transcriber to look at the picture the participant was describing, providing context about what the child said in the language sample.

1.3 Grammaticality Measures in Monolinguals

Language sampling provides a naturalistic context for grammatical analyses of children's productions. Grammatical markers in early language development have been identified for monolingual English-speaking children to obtain an accurate understanding of typical language development to identify when there is a language impairment present. Children with language impairment produce overall less grammatical utterances than typically developing children (Eisenberg et al., 2012). Grammaticality, which can be measured in different ways, has proven to be an accurate diagnostic marker for monolingual English speaking children (Eisenberg et al., 2012). One such measure is Percent of Grammatical Utterances (PGU), a broad measurement that calculates the total amount of grammatical utterances produced by a child in a language sample. Eisenberg and Guo (2013) compared PGU to Percentage Sentence Point (PSP), a measure of grammaticality excluding any utterance without a subject or main verb, and Percentage Verb Tense (PVT), a measure that looks only at verb tense errors. Although all three measures obtained 100% sensitivity, PGU had a higher specificity percentage at 88% compared to the other two measures. Overall, PGU was less likely than the other two measures to identify a child with a language impairment when they did not have one.

Another method used to measure grammaticality is analyzing the specific grammatical errors exhibited by children in a language sample. The current literature has found that monolingual English-speaking children exhibit a high number of tense marker errors. (Bedore &

Pena, 2008, Eisenberg & Guo, 2012, 2014; Jackson-Maldonado & Maldonado, 2017). Some of these studies have focused solely on errors involving tense marking. However, they have found that children exhibit a high number of argument structure errors, omissions of articles, omissions of plurals, and pronoun errors indicating that combining the broad and narrow measures of grammaticality would yield a more accurate diagnosis of a child's language ability.

For monolingual Spanish speaking children, Jackson-Maldonado and Maldonado (2017) revealed that the strongest diagnostic indicators were those that included more than one grammatical measurement. Verb tense errors were found to have no statistical difference between the typical developing group and the group with language impairment in Spanish. Both the broad measure of PGU and the distinct error types yielded accurate diagnosis for monolingual children's language impairment. Therefore, a combined measurement of the broad and narrow errors in a language would provide an accurate representation of the child's language (Eisenberg & Guo, 2016).

1.4 Grammaticality Measurements in Bilinguals

These broad and narrow measurements used for monolingual children also have potential in describing the grammatical skills of bilingual children. To expand the knowledge of language in bilingual children studies have focused on analyzing the language samples of bilingual children, that is, examining both languages, including the one that is less dominant. The rationale for including both languages is to gather an accurate representation of the child's language diversity. Therefore, a clinician analyzing the child's abilities in one language without taking into consideration a potentially greater vocabulary or word representation in another language is problematic.

Describing the use of language in bilingual children an ongoing area of research, Kapantzoglou et al. (2017) compared the diagnostic accuracy of lexical diversity and grammaticality. They also sought to find if the accuracy of these measures was affected by the type of elicitation protocol. Although grammaticality measures remained unchanged by elicitation type, they found that the story retelling with pictorial support had higher accuracy than story telling without support. Results supported the use of grammatical measurements in identifying if a bilingual child had typical language skills or language impairment. Furthermore, the use of the picture description task was supported as an effective elicitation task to obtain an appropriate language sample from children.

Other research has supported the use of grammaticality measures in the form of omission errors over lexical diversity in bilingual children (Jacobson & Walden 2013). Grammaticality measurements yielded higher diagnostic accuracy for bilingual children when only looking at omissions. Therefore, using a broader measurement such as PGU along with narrow measurements such as distinct error types should yield greater diagnostic accuracy. Furthermore, looking at the distinct types of different error exhibited by bilingual children should provide an index that may be used as a referent for future analysis of bilingual children's language development.

1.5 Purpose of the Study

A shifting focus on bilingual children to acquire an accurate diagnostic measure will help reliably identify children in need for services as well as reduce misidentification. Grammaticality is a potential measure that may increase the diagnostic accuracy for bilingual child's language abilities. An index of common grammatical error types as seen in Eisenberg and Guo (2012) would aid in obtaining an accurate diagnosis of a bilingual child's language. Therefore, this

study focused on using a previously recognized reliable measures such as PGU and distinct errors. Grammatical errors are common in preschool aged children, so this study examined errors in two age groups, younger (3- to 4-year-olds) and older (5- to 6-year-olds) preschool children. Procedures from Eisenberg & Guo, 2012 were adapted for this study. The current study was part of a larger project examining diagnostic accuracy of various assessment tools for bilingual children living in a border community (Curtis, Summers, Stubberman & Smith, 2017). The purpose of this project was to examine language sample measures in young children using a picture description task (Eisenberg & Guo, 2013) by answering the following questions.

1. What error types are exhibited by younger and older preschool children in English and Spanish?
2. Were there distinct types of grammatical errors across languages in bilingual children?

It was predicted that there would be different error types across languages for bilingual children due to the differences in the morphology of each language. Gathering an index of specific error types in each language produced by young bilingual children can be an informative resource for clinicians and future research. PGU has been an accurate measure to identify children with a language impairment; previous research states children with a language impairment have a lower percentage of grammatical utterances. Providing a percentage of PGU in each language and examining if there are differences across language and age can be informative for diagnostic purposes.

CHAPTER 2: METHODS

2.1 Participants

2.1.1 Recruitment. Approval from the Institutional Review Board for human subjects was received for this project. Flyers were distributed to these sites containing information about the study including the purpose, description of what participant would involve, and the length of time required for participation. Participants were recruited from different sites in the city of El Paso located on the US/Mexico border. The sites of recruitment included daycare centers, head start programs, and the Speech Language and Hearing clinic at the University of Texas at El Paso. As a further incentive to attract participants, a \$40 gift card was offered to Albertsons funded by a University of Texas at El Paso Graduate School Award.

2.1.2 Consent. A consent form approved by the Institutional Review Board was provided to parents who chose to participate in the study. The consent form included the purpose for the study, a description of the study, and risks for participation such as loss of confidentiality and discomforts (i.e., fatigue). The consent form also included a disclosure statement indicating that the participant could chose to withdraw from the study at any time without consequences. Lastly, the form included an authorization statement followed by the parents' printed name and signature.

2.1.3 Participants. Inclusionary criteria for the study was that participants had to be 3- to 6-years-old and had to pass a hearing screening. Hearing screenings followed ASHA standards at 25 dB for frequencies of 1000, 2000, and 4,000 Hz. Twenty-three male and 24 female participants enrolled in the study within the age range of 3;6-6;0 for a total of 47 participants. Two participants were excluded from the study due to comorbidities of microcephaly and Autism Spectrum Disorder and one participant was excluded due to attrition. The remaining 44 were placed into two groups by age; 3 and 4-year olds and 5 and 6-year olds.

2.2 Measures

2.2.1 The Bilingual Output Input Survey. A parent and teacher questionnaire was used to gather information about the participants' language history and current exposure in English and Spanish (Pena, Gutierrez-Clellen, Iglesias, Goldstein & Bedore, 2014). The BIOS also asks about the different registers used for each language at school, home, and with extended family. Questionnaires were collected over the phone and in person from parents and teachers of the participants. Parents and teachers rated the input, output, and proficiency of each participant in English and Spanish. Other information obtained included activities and communication partners in the participants' weekday and weekend schedule. Lastly, the questionnaire gave each participant an overall input and output of the English and Spanish language produced by the child. Overall, the participants BIOS scores yielded a greater English language dominance (see Table 1).

Table 1

<i>BIOS scores</i>		
Age Groups	Combined Input	Combined Output
3 & 4-year-olds		
English	59.15%	69.53%
Spanish	40.85%	30.47%
5 & 6-year-olds		
English	68.92%	80.82%
Spanish	31.08%	19.18%

2.2.2 Bilingual English Spanish Oral Screener. The BESOS screener was used in both English and Spanish for Semantics and Morphosyntax. The morphosyntax subtest included cloze tasks and sentence repetition items. The morphosyntax subtest for three and four-year-old's targeted 3rd person singular, Auxiliary + negation, Passives, and Sentence repetition items. For participants who were five and six-years-old, the morphosyntax subtest targeted six grammatical forms including 3rd person singular, Auxiliary + negation, passives, past tense, Auxiliary + progressive -ing, Copula, and Sentence Repetition. The semantic subtest measured vocabulary knowledge in both English and Spanish. Receptive vocabulary knowledge was assessed by showing the participant a picture and asking him/her a question (i.e. what shape is this present?). Expressive vocabulary knowledge was assessed by asking the participant to name all items in a category (i.e. tell me all the farm animals you can think of).

2.2.3 Language Samples. Language samples were elicited following a protocol adapted for this study by Eisenberg & Guo, 2012. Seven pictures were gathered from children's books and testing manuals; all pictures were either line drawings or photographs. Each picture contained at least three characters, half of the pictures illustrated a problem and the other half contained characters taking part in different actions.

2.3 Procedures

All testing was administered at the site of recruitment and at the UTEP speech language and hearing clinic. Tests were administered by trained graduate student clinicians from the Speech Language Pathology program at UTEP. A randomized block design was utilized to administer screeners in different orders and avoid testing bias. The blocks included a monolingual and bilingual sequence depending on the participants bilingual proficiency as determined by the parent and teacher questionnaires.

2.3.1 Bilingual English Spanish Oral Screener. Subtests for Morphosyntax and Semantics were administered to participants in English and Spanish. The start point for the administration of the BESOS subtests was determined by age. The examination was discontinued if the child did not respond to five consecutive items. Before any task, the examiner would present demonstrative items to ensure that the child understood the task. If the participant did not respond correctly to the demonstrative items, the examiner would provide the correct response as a model for the participant. For example, to elicit third person singular the examiner said, “Every day these dogs drink water. And here this dog does it too. What does he do every day? Every day the dog drinks...” The semantics subtest elicited vocabulary knowledge through categorical responses from the participant. For example, to elicit vocabulary knowledge the examiner said, “Tell me all the clothes you can think of”. Children in the bilingual sequence were administered the subtests in English and in Spanish via an iPad. Examiners wrote down word for word responses from the participants. Participants’ responses were scored as 1= correct, 0= incorrect, or NR= no response. The semantics subtest was scored with a 1= correct, 0= incorrect, or OL = other language if produced in the non-target language. Additionally, the scoring was double checked by a speech language pathologist.

2.3.2 Language Samples. A language sample was administered to all participants through a picture description task as reported by, Eisenberg & Guo 2012. Trained graduate and undergraduate students elicited a language sample from the child by showing them seven pictures. The pictures were gathered from children's books following the description from Eisenberg & Guo, 2012. The examiner let the participant pick the order of pictures he/she wanted to talk about and then provided a series of four prompts. Once a picture was selected, to elicit a response the examiner would ask the child, "What is happening in this picture?" After the children's response, the examiner said, "What else is happening in the picture?" The examiner would then begin with a story starter, such as "The boy is sick, and then..." Lastly, the examiner asked, "Tell me something else about the picture". If the child chose to not respond at any moment in the elicitation process, there were follow-up prompts that could be used to elicit the language sample.

The language sample was also elicited in Spanish for those in the bilingual sequence, following the same protocol and using the same seven pictures. To ensure that the child would not answer in English, the administrator would say "Ahora vamos a hablar en Español". The test administrator reminded the children that they had to speak in the target language when needed. A discontinuation criterion was set for language samples indicating that if the participant did not respond in the target language for one of the seven pictures the language sample in that language was discontinued. If the child did not verbally respond at all to any of the attempts to elicit a language sample and/or during prompts for the first picture in that language test administration would be terminated in that language. Due to this criterion, children produced 27 language samples in English only, seven in Spanish only and nine participants produced a sample in both languages.

Table 2

Number of participants who produced language samples for each language

Participants	n	English Language Samples only	Spanish Language Samples only	English and Spanish Language Samples
3 & 4-year-olds	29	19	6	4
5 & 6-year-olds	15	9	1	5
Total Number of Participants:	44	28	7	9

Note. n = number of participants

2.3.2.1 Transcription. All language samples were transcribed by trained Speech Language Pathology students at the University of Texas at El Paso. Transcription followed the protocol set by the Systematic Analysis of Language Samples software. Research assistants transcribed word for word from the audio recorded picture description task completed by each participant in English and in Spanish. Utterances were marked as unintelligible (i.e. X) by the transcriber if by the third listening attempt the message could not be deciphered.

2.3.2.2 Coding. All complete intelligible utterances were coded as grammatical or ungrammatical. Ungrammatical utterances were additionally coded for the type of error. There were seven error codes used in the English and Spanish samples. These codes are included in Table 3 with example of each error type. Utterances that lacked a verb were coded as Fragment errors. The Argument structure error code was used when obligatory constituents before or after a verb (unless grammatically appropriate) were omitted. Prenominal Form errors included incorrect substitutions for subject, object, reflexive and possessive determiners. Tense Marker errors consisted of the omission of the copula, auxiliaries, auxiliary do, bound tense markers, and irregular past and third person forms. Omissions or substitutions of bound or free nominal morphemes other than pronouns (plural -s, articles), aspect markers (present participle -ing), and prepositions (on, in) were coded as Grammatical Morpheme errors. Errors labeled as Other included any other syntactic error or semantic irregularity lexical errors on content words.

To establish inter-rater reliability for coding, two transcribers independently coded 27% of the English samples (37/10) a total of 10 English transcripts and 37% of Spanish samples (16/6) for a total of six Spanish transcripts. The inter-rater reliability percentage for English samples was 95.3% and 91.3% for Spanish language samples. Percent of grammatical Utterances (PGU) was obtained by dividing the participant's grammatical utterances by all grammatical and

ungrammatical utterances (Eisenberg & Guo, 2012). The error codes were measured by the total number of occurrences in a sample.

Table 3

Grammatical Codes

Primary Code		Definition	Examples
Grammatical	[G]	Utterances that were grammatical	
Ungrammatical	[U]	Utterances that were ungrammatical	
Secondary Code			
Fragments	[F]	Utterances that lack a verb	The cake En el fútbol
Argument structure errors	[A]	Omissions of obligatory constituents before or after a verb (unless pragmatically appropriate)	And giving him medicine. Agarrando pastel.
Pronominal form errors	[P]	Substitution errors for subject, object, reflexive, and possessive pronouns and possessive determiners	Her is drinking. Y le salio la niña y la mamá.
Tense marker errors	[T]	Omissions and usage errors for copular, auxiliaries, auxiliary <i>do</i> , bound tense markers, and irregular past and third person verb forms, conjugation errors in Spanish	He didn't got an apple. Está lluvia*viendo.
Grammatical morpheme errors	[M]	Omissions or substitutions of <ol style="list-style-type: none"> 1. Bound or free nominal morpheme other than pronouns (i.e. plural-s, articles) 2. Aspect markers (i.e. present participle-ing) 3. Prepositions 	He's drive*ing the car. Está quitando la agua.
Other errors	[O]	Any other syntactic error or semantic irregularity (ie. lexical errors on content words	The doctor is taking him fever. Y luego hacía

Code-Switching	[CS]	like nouns, verbs, and adjectives, and word order) The mixed use of two or more languages within the same discourse	aquí hace ocho. Están drinking.
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CHAPTER 3: RESULTS

3.1 Analysis of Younger and Older Groups

To answer the first research question about error types in younger and older children, descriptive statistics were first examined following 2 one-way ANOVAS, one for English and one for Spanish. The means and standard deviations for PGU and each error type in the language samples are found in Tables 4 and 5 for English and Spanish respectively. In English (Table 4) the most frequent errors types for the younger group included Fragment errors (younger = 05.36; older = 02.21) and Pronominal errors (younger = 02.55; older = 00.29). The older group produced more Other errors than the younger age group in English (younger = 05.82; older = 08.07). The one-way ANOVA for the English language samples (see Table 6) yielded a statistically significant difference in Fragment errors between the younger and older children, $F(1,27) = 4.781, p = .036$ with the younger group producing more Fragment errors. There were no statistically significant differences in the other error types in English ($p > .05$).

Descriptive statistics for the Spanish only samples (see Table 5) indicated that the younger group produced more Fragment errors (younger = 3.40; older = 0.83) and Argument errors (younger = 3.50; older = 2.17) than the older group. The older age group produced more Pronominal errors (younger = 1.90; older = 2.67) errors than the younger age group in Spanish. However, the results for the one-way ANOVA for the Spanish language samples yielded no statistically significant differences for any of the error types ($p > .05$; see Table 6).

Table 4

Descriptive Statistics in English for the Younger and Older Groups

Grammatical Marker	Younger		Older	
	Mean	SD	Mean	SD
Total Utterances	87.91	36.65	72.57	35.98
Grammatical	30.59	13.11	37.14	21.22
Ungrammatical	22.23	13.99	20.79	20.59
PGU	00.59	00.19	00.67	00.24
Errors Types				
Fragments	05.36	04.61	02.21	03.47
Arguments	02.18	01.62	02.71	00.83
Pronominal	02.55	07.24	00.29	00.83
Tense Marker	06.23	06.33	06.14	06.91
Morpheme	02.96	03.02	03.07	03.60
Other	05.82	04.46	08.07	10.60
Code-Switching	00.05	00.21	00.14	00.53

Note. Younger = 3& 4-year old's, Older = 5& 6-year old's, SD = Standard Deviation

Table 5

Descriptive Statistics in Spanish for the Younger and Older Group

Grammatical Marker	Younger		Older	
	Mean	SD	Mean	SD
Total Utterances	72.40	27.46	56.83	17.70
Grammatical	19.10	10.36	28.00	08.44
Ungrammatical	17.50	14.89	15.33	10.23
PGU	0.52	.23	0.66	00.17
Errors Types				
Fragments	3.40	3.71	0.83	01.33
Arguments	3.50	3.75	2.17	02.04
Pronominal	1.90	2.08	2.67	03.20
Tense Marker	1.00	.94	1.00	01.55
Morpheme	1.80	1.81	2.00	02.53
Other	7.60	9.83	7.00	07.32
Code-Switching	2.30	3.80	3.00	05.02

Note. Younger = 3& 4-year old's, Older = 5& 6-year old's, SD = Standard Deviation

Table 6

One-way ANOVAs for older and younger groups

	English		Spanish	
	<i>F</i> value	<i>p</i> values	<i>F</i> value	<i>P</i> values
Grammatical Markers				
Percent Grammatical Utterances	1.009	.322	1.593	.228
Fragments	4.781	.036*	2.596	.129
Arguments	.385	.539	.633	.439
Prenominal	1.338	.255	.342	.568
Tense Errors	.001	.970	0.00	1.000
Morpheme Errors	.011	.917	.034	.856
Other Errors	.786	.318	.017	.899
Code-Switching	.591	.447	.100	.756

Note. *F* =, **p* < .05

3.2 Within Subject Analysis of Language Samples

To answer the second research question about the distinct types of grammatical errors across languages within participants, paired *t*-tests were conducted. The *t*-tests compared the English and Spanish measures exhibited by the 9 participants who provided samples in both languages (see Table 7). Results revealed that participants produced significantly more Fragment errors, $t(8) = 1.946$, $p = .008$, and Tense marker errors in English than in Spanish, $t(8) = 2.718$, $p = .026$. The participants had significantly more instances of code-switching in Spanish than in

English, $t(8) = -2.891, p = .020$. Although not statistically significant, there was also a statistical trend for Pronominal errors with more produced in Spanish [$t(8) = -2.287, p = .051$].

Table 7

Paired t-test analysis for the 9 participants who produced samples in both languages

Grammatical Marker	English		Spanish		p-value
	Mean	SD	Mean	SD	
Total Utterances	70.89	36.25	58.22	13.99	.262
PGU	.58	.26	.61	.16	.165
Errors Types					
Fragments	3.89	3.9	1.33	1.4	.008*
Arguments	2.22	2.4	2.11	1.8	.905
Pronominal	.56	1.0	3.0	2.9	.051 [†]
Tense Marker	6.0	5.8	1.11	1.4	.026*
Morpheme	3.56	4.1	1.89	2.1	.342
Other	7.11	6.1	5.67	6.3	.358
Code-Switching	.22	.67	4.44	4.8	.020*

Note. SD = Standard Deviation, * $p < .05$, [†] $p < .06$

CHAPTER 4: DISCUSSION

The purpose of this study was to examine language sample measures in young children using a picture description task developed by Eisenberg and Guo (2013). This study sought to determine the frequent error types exhibited by young children in English and in Spanish which could serve as potential diagnostic markers for children. PGU, the broader measure, yielded no statistical difference between age or language comparison groups. Previous studies have found that PGU is a good diagnostic indicator for children with typical language or language impairment (Eisenberg & Guo (2013). However, it may be that PGU is more sensitive to the presence of a language impairment instead of detecting differences between languages. Also, the children tested in this study were not more grammatical in English or Spanish.

4.1 Error Type occurrences by participant age

There were significant findings for the different types of errors across languages. Children produced different error types for each language which was consistent with previous studies (Gutierrez-Clellen et al., 2006, Eisenberg & Guo, 2012 and Jackson-Maldonado & Maldonado, 2016). The younger group produced significantly more Fragment errors (utterances lacking a verb) in English, possibly due to their shorter utterances which were more likely to lack a verb. The older group's fewer Fragment errors demonstrated a developmental trend. The younger group also produced more Pronominal errors including Articles, clitic pronouns, gender agreements than the older group. In fact, the older group hardly produced any Pronominal errors showing a developmental trend and indicating that this error is not typically difficult for children in English (Baron et al., 2018). The older group produced more Other errors which included any other syntactic error or semantic irregularity than the younger group. This measure accounted for

any other type of error that could have been made. As the older group naturally produced longer utterances with more lexical diversity, the probability of committing an error was increased.

For Spanish only samples, there was no statistical differences in error types between the younger and older children. However, the younger group had more errors overall with elements omitted in their sentences produced. Although not significant, they produced more Fragment and Argument errors which included omissions of obligatory constituents before or after a verb. They also had shorter utterances overall and therefore more utterances without a verb (Fragment errors). In the Spanish language, subject pronouns may be dropped when the verb forms are appropriate. It may be that younger children are still figuring out what elements this rule applies to in the Spanish language and, therefore, it may not be an easy form for them. It is unlikely that the increased Pronominal errors in older children in Spanish were due to age. Rather, a common language difficulty in Spanish for children includes pronominal errors (Baron et al., 2018).

4.2 Grammatical Error Types Across Languages

When analyzing between languages, the participants produced significantly more Tense Marker errors in English than in Spanish, supporting previous evidence that children exhibit more difficulty with Tense Markers in English (Eisenberg et al., 2012). An influence might be the difference in languages; the Spanish language is rich in morphology and children begin producing third person singular as well as tense markers as young as 2;6 years of age and achieve accuracy by 3 or 4 years of age. (Baron et al., 2018)

There was a significant difference in the production of utterances with Code-Switching in Spanish than in English which may have been due to the participants having more exposure to the English language overall. Participants may have had increased English exposure because of siblings, the educational language, and friends. This study also included bilinguals with a wide

variety of language experiences. There was overall more English dominance as determined by the parent teacher questionnaire. Therefore, the greater English dominance may have contributed to the high occurrence of Code-switching in Spanish.

It is important to note the statistical trend for participants producing more Pronominal errors in Spanish than in English, supporting previous literature that children have difficulties with Article, Clitic Pronoun, and Gender agreement (Jackson-Maldonado & Maldonado, 2016; Barron et al., 2018). The results from this study and previous literature indicate that Pronominal errors could potentially be used as a diagnostic marker for language impairment in Spanish (Jackson-Maldonado & Maldonado, 2016).

4.3 Limitations, Future Directions, and Clinical Implications

This study had limitations including the participants' overall higher dominance in English, which may have led to an uneven distribution of bilinguals. Most participants were not able to produce language samples in both languages, which was surprising given the input and output reported by parents and teachers. The low number of participants (n=9) with samples in both languages reduced the statistical power overall of the within subject's analysis. The study did not have a large sample size overall with just 44 participants. Future research should replicate this study using a larger sample size as well as incorporating a sample of more balanced bilinguals. Additionally, incorporating children with and without a language impairment for these measures would allow an examination of the accuracy of PGU in determining language impairment in bilingual children.

Based on the results of this study, clinicians should expect different patterns of errors for bilingual children than for their monolingual peers. This study can serve as a guide of the type of errors that can be made by bilingual children. When gathering a language sample from young

children, clinicians should consider the use of the Picture Description Task (Eisenberg & Guo, 2012) with monolingual and bilingual children since it has proven to be an effective elicitation task for children who do not yet have well developed narrative story telling skills. Incorporating grammatical measures when assessing children's language skills might facilitate accurate clinical diagnosis and aid in intervention planning when needed.

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VITA

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