

LINGUISTIC CHARACTERISTICS
OF THE STUTTERED WORD
IN A BILINGUAL SPANISH-ENGLISH
SPEAKING CHILD

by

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Submitted in partial fulfillment of the
requirements for Departmental Honors in
the Department of Communication Sciences and Disorders

Texas Christian University

Fort Worth, Texas

May 5, 2014

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ABSTRACT

The purpose of this study was to increase our understanding of the stuttering in bilingual children. Specifically, the linguistic features of the stuttered word in the spontaneous speech of a bilingual Spanish-English child (chronological age 2;7) were examined and compared to what is observed in monolingual Spanish and English speaking children who stutter. Digital video recordings of the participant's connected speech in both languages were collected. These samples included conversations with an English speaking clinician, bilingual Spanish-English speaking clinician, mother, and father while playing with toys. Results revealed both similarities and differences compared to monolingual English and Spanish speaking individuals who stutter. Differences were noted in word length, initial phoneme, grammatical clause, and position in clause. These differences may be due to interaction effects among linguistic factors as well as bilingual effects.

ACKNOWLEDGEMENTS

I would like to thank my thesis panel for their support and thoughtful input throughout this process. Thank you to Dr. Jennifer Watson for being my supervising professor and to Mrs. Irmgard Payne and Dr. Keith Whitworth for being on my panel; I truly enjoyed working with all of you this past year. Thank you for all your contributions and for making this endeavor possible; I could have never done this without you. I would also like to thank the graduate students who helped with transcription and coding.

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INTRODUCTION

Stuttering is a complex, universal disorder, occurring across languages and cultures, existent in both bilingual and monolingual populations (Van Riper, 1971; Finn & Cordes, 1997; Van Borsel, Maes, & Foulon, 2001). Many studies have been completed examining stuttering in other languages, but studies in Spanish are very few. According to Watson, Byrd and Carlo (2011), “cross-linguistic comparisons of stuttering may be helpful in identifying common characteristics across languages and clarifying underlying attributes of stuttering” (p.169). Investigations of stuttering in other languages would allow us to evaluate the appropriateness of English based models used to diagnose and treat stuttering in linguistically diverse individuals (Watson, Byrd & Carlo, 2011).

LITERATURE REVIEW

According to the 2013 U.S. Census, as of July 2012, 53 million individuals in the United States are Hispanic. “The Hispanic population is projected to triple in 2008-2050 with 1 of every 3 U.S. residents being Hispanic. One out of five individuals report speaking a language other than English at home more specifically, in Texas, 1 out of 3 residents speak another language at home. More than 4.6 million bilingual children attend school in the United States” (Watson & Hamilton, 2013). According to the U.S. Census, Texas, California and New Mexico are some of the states with the highest percentages of Spanish speakers. Texas has 2,369,036 (12.31%) individuals who only speak Spanish (Spanish Speaking State Statistics, 2012). However, the number of reports describing stuttering in Spanish speakers remains very low (Watson, Byrd & Carlo, 2011).

Presently, there are limited data regarding the manifestation of stuttering in Spanish-English bilinguals (Ardila, Ramos, & Barrocas, 2011; Bernstein Ratner &

Benitez, 1985; Carias & Ingram, 2006; Dale, 1977; Howell et al., 2004). According to the Demographic Profile of American Speech-Language-Hearing Association (ASHA), at the end of 2011 there were 150,241 audiologists, speech language pathologists, speech language and hearing scientist, and audiology and speech language pathology support personnel. Of the 150,241 individuals only 7,039 (5%) met the ASHA definition of bilingual service provider. Few clinical evidence related to the treatment of bilingual children who stutter is available (Shenker). However, monolingual clinicians are treating stuttering in languages other than English and bilingual speakers as well (Li, 2004; Bebout & Arthur, 1997; Cheng, 1987). Therefore, there is a need for clinical investigations so clinicians can provide the most effective treatment (Shenker).

The prevalence of stuttering in Spanish speakers is somewhat above the 1% rate reported for English speakers, with similar reported sex ratios of male to female ranging from 2.9:1 to 5:1 (Almonte *et al.*, 1987; Ardila *et al.*, 1994; Bloodstein & Ratner, 2008; Leavitt, 1974; Pelaz *et al.*, 1995; Pelaz *et al.*, 1997). Study of both monolingual and bilingual Spanish-speaking children is necessary to improve speech and language clinicians' abilities to establish linguistically and culturally appropriate assessment and treatment strategies for these two unique populations (Anderson, 2007).

According to the American Speech-Language-Hearing Association 2004, bilingualism is the use of at least two languages by an individual. More than half of the world's population is bilingual and about 1% of the world's population stutters (Bloodstein & Bernstein Ratner, 2008; Van Borsel, Maes, & Foulon, 2001). Bilingualism is not simply the sum of two languages (e.g., Grosjean, 1989). Bilingual children learn multiple languages in diverse ways, including through: (a) consistent dual-language

(e.g., English and Spanish) exposure from birth, referred to as bilingualism as a first language (Centeno, 2007); and (b) exposure to a single language at home (e.g., Spanish) with the introduction of a second language (e.g., English) once preschool begins, referred to as preschool successive (Kayser, 2002) or early sequential bilinguals (Kohnert & Kan, 2007). Bilingual speaker's language knowledge is significantly different from the language knowledge of a monolingual speaker (Taliencich-Klinger, Byrd & Bedore, 2013). A bilingual child's language knowledge is shared between both languages and their language specific experiences may not be the same in both languages (Grosjean, 1998; Kohnert, 2010). A bilingual speaker may be more vulnerable to produce speech disfluencies than the monolingual speaker because of the distinct cognitive demand that is natural to bilingualism, and the potential for different motoric differences in the production of the two languages may also compromise the bilingual child's ability to establish or maintain fluency (Taliencich-Klinger, Byrd, & Bedore, 2013).

Attributes of the Stuttered Word

The location in which stuttering occurs in the speech sequence, i.e., the linguistic attributes of the stuttered word, has been examined extensively in English speakers who stutter. The following is a summary of the outcomes of these studies as well as the limited findings for Spanish speakers who stutter. Although there is an interaction between these factors, it is thought that each of these components may influence stuttering. These results support a link between language and stuttering.

Word Length

According to Brown (1935 as cited in Bloodstein & Ratner, 2008), "longer words have been found, other things being equal, to be stuttered on more than shorter ones in

the English language” (Brown & Moren 1942; Soderberg 1966; Schlesinger, Melkman & Levy 1966; Taylor 1966; Wingate 1967, Lanyon & Duprez 1970; Soderberg 1971; F.H. Silverman 1972; Danzger & Halpern 1973; Griggs & Still 1979). Spanish and English have linguistic differences, which may lead to different effects of utterance length and complexity on stuttering; for example, Spanish has an increased word length and highly inflected noun and verb systems (Watson, Byrd, & Carlo, 2011). Spanish words are also phonemically less complex than English (Goldstein & Iglesias, 2006), but they are often longer than English words (Watson, Byrd, & Carlo, 2011). Ninety percent of Spanish tokens are two- and three-syllable words (Vitevitch & Rodriguez, 2004), compared to one- and two-syllable words that represent around 80% of English tokens (Zipf, 1935). In addition, many of the single-syllable function words in English are multisyllabic in Spanish, including conjunctions (e.g., *pero* [but], *como* [how]), articles (e.g., *una* [a], *unos* [some]), and prepositions (e.g., *para* [for], *desde* [from]) (Watson, Byrd, & Carlo, 2011). Therefore, function words which are often stuttered in Spanish- and English-speaking children, may be longer in Spanish when compared to English (Watson, Byrd, & Carlo, 2011). However, in monolingual Spanish speaking children, stuttering occurred more often on one-syllable words (Watson 2002).

Vowel Versus Consonants

Johnson and Brown (1935 as cited in Bloodstein & Ratner, 2008) have seen that for many adults who stutter, the likelihood that they would block on a word was influenced by the sound it began. The sounds that are difficult vary from person to person. For stutterers as a whole, initial consonants have been shown to be more difficult than initial vowels although some individuals do stutter more on vowel initiated words

(Bloodstein & Ratner, 2008). Bernstein Ratner and Benitez (1985) found that for Spanish-English speaking adults who stutter, vowel-initiated words in Spanish were more difficult than in English, partially because vowels initiate verbs and other content words more frequently in Spanish. In monolingual Spanish speaking children, stuttering most often occurs on words beginning with consonants (Watson, 2002).

Grammatical Factor

According to Brown (1935 as cited in Bloodstein & Ratner, 2008), most stuttering in oral reading takes place in nouns, verbs, adjectives, and adverbs (content words) and far less difficulty is seen on articles, prepositions, pronouns, and conjunctions (function words) (Brown, 1937; Hahn, 1942; Eisenson & Horowitz, 1945; Quarrington, Conway & Siegel, 1962; Danzger & Halpern, 1973; Griggs & Still, 1979; Wingate, 1979; Soderberg, 1967; Koopmans, Slis & Rietveld, 1991). “Content words are the focal points in the stream of communication, where the meaning is most important, where the speaker’s emphasis is greatest, and where listener’s interest is concentrated and therefore, individuals who stutter may have more difficulty on these words” (Bloodstein & Ratner, 2008 p.254). On the other hand, in both English and Spanish, stuttering in young children has been observed to occur more on or around function words (Au-Yeung, Howell, & Pilgrim, 1998; Bloodstein & Gantwerk, 1967; Bloodstein & Grossman, 1981; Howell, Au-Yeung, & Sackin, 1999; Howell et al., 2004; Watson, 2002; Watson et al., 2007). Stuttering children, in the beginning phase of their stuttering, have more difficulty on function words, especially pronouns and conjunctions in English as well as in other languages (i.e., Spanish), and when they become adults, they stutter more on content words (Howell, Au-Yeung, & Sackin, 1999; Au- Yeung, Gomez, & Howell, 2003;

Dworzynski & Howell, 2004; Natke, Sandrieser, van Ark, Pietrowsky, & Kalveram, 2004; Natke, Sandrieser, Pietrowsky, & Kalveram, 2006).

Position in the Word/Utterance

According to Johnson and Brown (1935 as cited in Bloodstein & Ratner, 2008), more than 90 percent of stuttering has been found to take place on the initial sound or syllable of words. Also, stuttering is sometimes heard within the word (Brown 1938b; Hejna 1972; Sheehan, 1974). In English, there is evidence that more stuttering occurs on the first word and, in varying degrees, on other early words of the sentences than on words in other positions (Bloodstein & Ratner, 2008). In monolingual Spanish speaking children, “stuttering is found on or immediately prior to the initiation of a sentence or a clause and on the initial phoneme of the word” (Watson, 2002 p. 179).

In summary, previous research of linguistic features of the stuttered word in both Spanish and English suggests that Spanish stuttered words will be on monosyllabic words in children and longer in length in adults. English stuttered words will most likely be consonant-initiated whereas; Spanish stuttered words may be vowel- or consonant-initiated. Spanish and English stuttered words typically are characterized as function words in young children. In both Spanish and English, the stuttering loci most often is at the beginning of the word. In English, the stuttering loci has been predominantly at the onset of the clause. However, in Spanish, the stuttering loci has been observed at the onset and within the clause in young children.

RESEARCH QUESTIONS

The purpose of this study is to increase our understanding of the stuttered word in languages other than English. Specifically, we will be comparing the linguistic characteristics of stuttered words in Spanish and English in a bilingual child who stutters. It was hypothesized that characteristics of the stuttered word will demonstrate both similarities and differences between Spanish and English due to the language differences and the relationship between stuttering and the linguistic features. Specifically, the following features of the stuttered word in English and Spanish in a bilingual child were examined, and, based on previous research in English and Spanish, it was hypothesized that:

1. Word length: In both English and Spanish monosyllabic words will be stuttered on the most.
2. Initial phoneme: In English, consonants will be stuttered on more than vowels, but in Spanish, vowels will be stuttered on more frequently. English and Spanish stuttered words will begin with similar initial consonants.
3. Grammatical class: Stuttering in both English and Spanish will occur more on or around function words. English stuttered words will more likely be conjunctions, pronouns, and prepositions. Spanish and English content words that are stuttered, will more likely be verbs.
4. Location in the word and clause: In both English and Spanish, stuttering will occur more often on the initial sound of the word or syllable. In English, stuttering will occur more at the onset of the clause. In Spanish, however, stuttering will occur both at the onset and within the clause.

METHODOLOGY

Participant

The participant (who will now be referred to as XX) was a 2 year, 7 month old male bilingual Spanish-English speaking child who was seen at the Miller Speech and Hearing Clinic for a speech and language evaluation. According to completed parent questionnaires, XX is bilingual and uses English at home approximately 60% of the time, and Spanish 40% of the time. XX attends a pre-school program where only Spanish is spoken. XX's preferred language when playing with his older sister is Spanish. XX's mother reported that his skill level is equal in both Spanish and English. The mother predominantly speaks to XX in English, while his father speaks to him in Spanish.

XX's mother reported that XX began exhibiting stuttering behaviors (i.e., sound repetitions, multiple word repetitions, and prolongations) when he was 2 years, 4 months. Stuttering behaviors were noted equally in both Spanish and English. His mother also stated that at initial onset, XX stuttered for approximately 1 week. XX's stuttering was noted to subside until the time of this evaluation when his stuttering behaviors re-emerged with greater severity. On a scale of 1-10 with "1" being no stuttering and "10" being the worst stuttering imaginable, she rated XX's stuttering as a "9." According to XX's mother, at his peak of stuttering, XX demonstrated the secondary behaviors of squeezing his eyes shut and opening his mouth wide when trying to initiate speech. Additionally, she said that XX typically stuttered at the beginning of a phrase or sentence, and it was characterized by multiple repetitions (sound or word).

Using the same 10-point scale used above, she rated XX's stuttering as a "3" at the time of the evaluation. She indicated that speech behaviors seen in the clinic were

representative of XX's speech on a typical day. XX's teacher reports that she has no concerns in class regarding his behavior, developmental level, or academic skills. He reportedly interacts well with peers, and he is able to identify letters, shapes, and colors. According to XX's mother, the teacher has noted variability in XX's speech difficulties, with stuttering behaviors being very noticeable some days and minimal at other times. XX has family history of stuttering. His father and a male maternal relative also stutter.

At the time of the evaluation, XX stuttered in both languages and his articulation, language, and hearing were within normal limits. Specifically, receptive and expressive language skills in Spanish were assessed through the Preschool Language Scales 5th edition (PLS-5) Spanish edition. Questions he answered incorrectly were re-administered in English to ensure that his error was not due to a lack of vocabulary in either language. XX's standard scores were 147, 146 and 150 for auditory comprehension, expressive communication and total language score, respectively. He was in the 99th percentile rank for all three areas. According to the Stuttering Severity Instrument - Fourth Edition (SSI-4), XX received a behavioral severity score in English of moderate. XX's mother reported that XX is aware of the problem by telling his parents "I can't talk" when he is experiencing a higher level of disfluency and becomes frustrated.

Procedures

During the speech and language evaluation, connected speech samples of XX speaking Spanish and English were obtained using digital video recordings. These digital video recordings were stored on a secured drive of the supervising professor. The recorded samples included conversations in Spanish and English during play with both

the clinician and the parent. Table 1 presents the conversational partner, language used, number of intended syllables, number of words, and MLU for each sample.

TABLE 1: Video Sample Description

<u>Conversational Partner</u>	<u>Language Used</u>	<u>Number of Intended Syllables</u>	<u>Number of Words</u>	<u>Number of minutes</u>	<u>MLU</u>
Mother	English	406	381	11:24	2.57
English-speaking clinician	English	848	781	33:22	3.83
Father	Spanish	440	267	14:38	1.6
Bilingual (SE) clinician	Spanish	182	136	11:43	2.19

Transcription

The connected speech samples in both Spanish and English were transcribed by the primary investigator using the Systematic Analysis of Language Transcripts (SALT) conversions. Syllable counts for each utterance were also identified. An utterance was identified as multiple words that make a sentence or phrase. When the phrase was identified as an utterance, it was then further classified as a fragment or an elliptical response. A fragment is a grammatical incomplete phrase and an elliptical response is both grammatically incomplete and in response to a question. When an utterance begins with a conjunction it was coded either as a fragment [FRAGUT] or elliptical response [ELIPUT] e.g. (“And this one go in there,” “Y yo no se”) depending if the child is answering a direct question or not. Also, when the subject “yo” is missing, but is understood to be there e.g. (“No se,” “Don’t know”) the utterance was considered as a complete utterance. English and Spanish samples were typed verbatim onto Microsoft Word and imported into SALT.

In order to assure transcription accuracy in both Spanish and English, inter-reliability checks were completed. All Spanish and English samples were independently transcribed by the primary investigator (a bilingual Spanish – English speaker) and by a bilingual speech-language pathology graduate student. These transcriptions were compared and inconsistencies were identified. When there were discrepancies, the two researchers met and reviewed the video until both researchers agreed. When the researchers could not agree on a word, it was discarded and the utterance was not included in the analysis. Out of the four language samples, five disagreements resulted in discarding five utterances in further analysis.

Disfluency Identification and Coding

All disfluencies were identified in utterances that met the criteria for being an utterance and coded in the four samples. Specifically, disfluent moments were coded as stuttering like disfluencies (SLDs) and other disfluencies (ODs) using common guidelines as defined by Campbell and Hill (1987) and Yairi and Ambrose (2005). The utterance was first identified and if a disfluency was observed the investigators decided if it was an SLD or an OD. SLDs are sound repetitions, syllable repetitions, monosyllabic word repetitions, polysyllabic word repetitions, prolongations, and blocks (Campbell & Hill, 1987; Yairi & Ambrose, 2005; Watson et al., 2011). ODs are pauses, revisions, unfinished words, phrase repetitions, interjections, and broken words (Campbell & Hill, 1987; Yairi & Ambrose, 2005). For the purpose of this study and based on previous research examining stuttering in Spanish-speaking children, the primary investigator included polysyllabic whole word repetitions as stuttering like disfluencies (Watson et

al., 2011). If the utterance contained an SLD, the characteristics of the stuttered word were then examined.

Words that contained stuttering-like disfluencies (SLDs) were identified and then coded using unique SALT codes developed for coding linguistic features. Specifically stuttered words were coded for: (a) Word length (i.e., 1 Syllable [1SY], 2 Syllables [2SY], 3 Syllables [3SY], 4 Syllables [4SY], ≥ 5 Syllables [5 SY]) (i.e., Monosyllabic Word Repetition [MWR], With Tension [T] Polysyllabic Whole Word Repetition [PWR], Two Syllable Word [2SYW], Three Syllable Word [3SYW], Four Syllable Word [4SYW]), (b) Initial phoneme (i.e., *Consonant* [CO], *Vowel* [VO,]), (c) Grammatical class (i.e., Content Word [CW], Noun [NO], Main Verb [MAV], Modifier [MOD] or Function Word [FW], Article [ART], Pronoun [PRO], Auxiliary Verb [AUV], Modal Verb [MOV], Deitic [DEI], Preposition [PRE], Conjunction [CONJ], Other [OTH]) (e) Location in the word (i.e., *Initial Position* [IP], *Medial Position* [MP], or *Final Position* [FP]), and (e) Location in the clause (i.e., *Clause Onset* [OCL], *Within a Clause* [WCL]).

Coding consistency both within and across Spanish and English language samples was confirmed by inter-judge and intra-judge reliability checks for the presence or absence of disfluency, whether the disfluency present was an OD or SLD, specific disfluency type, and if the disfluent event contained multiple disfluencies. In addition, each linguistic characteristic of the stuttered word was examined for coding consistency. The primary investigator and a bilingual Spanish-English research assistant independently coded all English and Spanish samples. These samples were compared and inconsistencies were identified. Initially, there was 95%, 87%, 96%, and 92% agreement across these codes in the English conversation with the clinician, Spanish conversation

with the clinician, Spanish conversation with the father, and English conversation with the mother, respectively. When there were coding discrepancies, the two researchers met and reviewed the video until both researchers agreed. One hundred percent agreement was reached in these samples. Intra-reliability checks were completed by the primary researcher who reviewed 20% of a randomly selected portion of the recordings in both English and Spanish. The researcher viewed a copy of the original unmarked transcriptions and re-coded the samples. There was 95% and 91% agreement across the codes in English and Spanish, respectively.

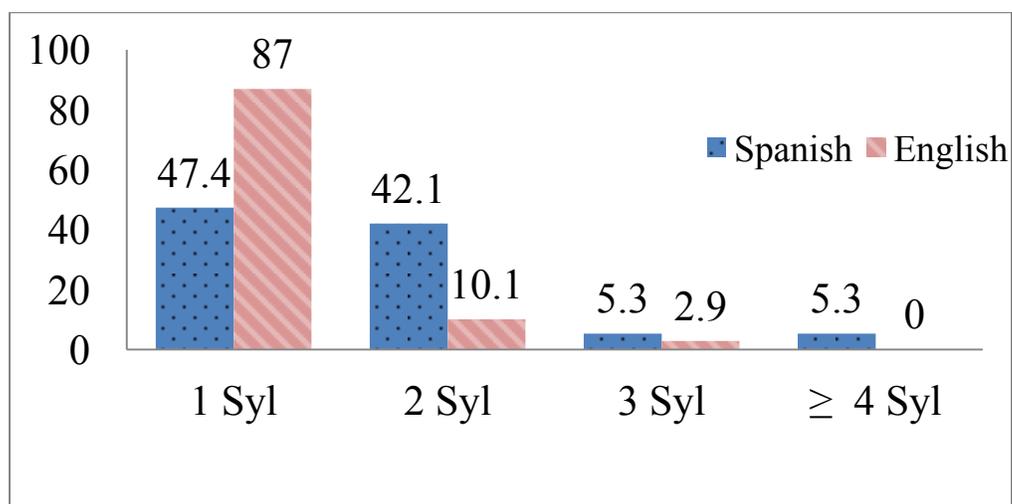
RESULTS

In order to determine if the linguistic features of the stuttered word were similar or different in Spanish and English, descriptive statistics were completed for each feature.

Word Length of the Stuttered Word

It was hypothesized that stuttered words would be predominantly monosyllabic words in both English and Spanish. The results demonstrated that this was true, where most stuttered words were one syllable in length in both Spanish and English . There were however, longer stuttered words in Spanish.

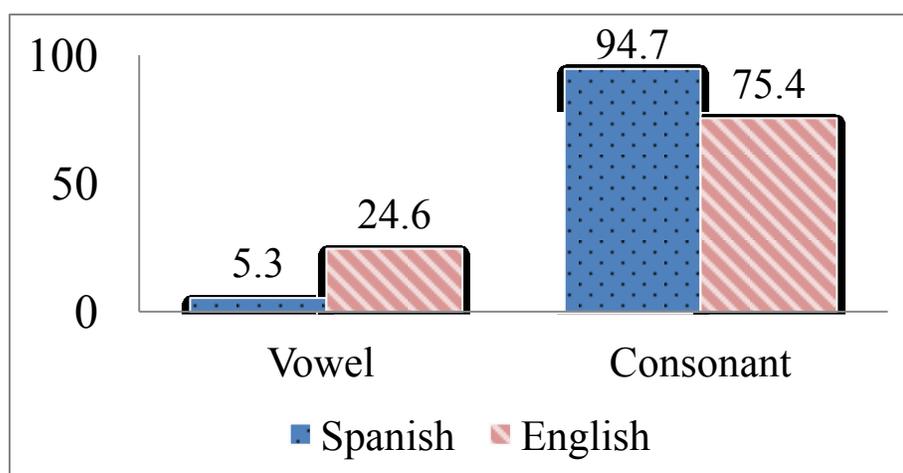
Figure 1: Percentages of one, two, three and four or more syllable stuttered words in Spanish and English.



Initial Phoneme of the Stuttered Word

It was predicted that the initial phoneme of the stuttered word would be consonants in English, but vowels in Spanish. Results indicated, however, that for this bilingual child, both English and Spanish stuttered words mostly began with consonants. Further, more vowel-initiated words were observed in English.

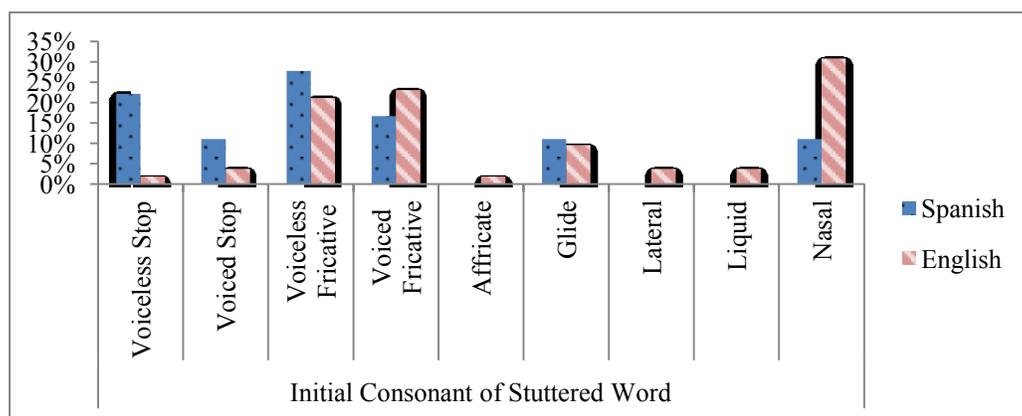
Figure 2: Percentages of the initial phoneme of the stuttered word in Spanish and English.



In addition, it was hypothesized that there would be no significant differences in the types of initial consonants observed in stuttered words in English and Spanish.

Results revealed that English and Spanish stuttered words often began with voiced and voiceless fricatives. Spanish stuttered words also began with voiceless stops and English stuttered words most often began with nasals.

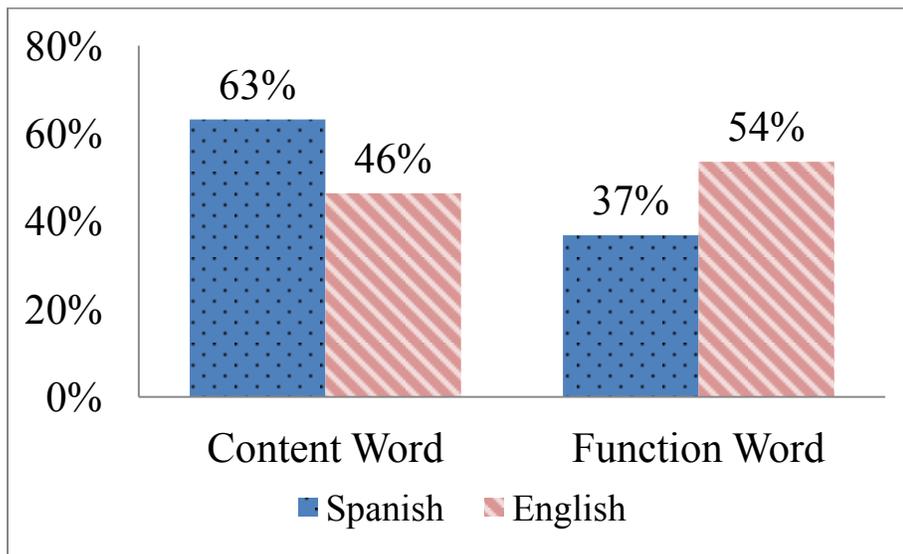
Figure 3: Percentages of initial consonant type in stuttered words in Spanish and English.



Grammatical Class

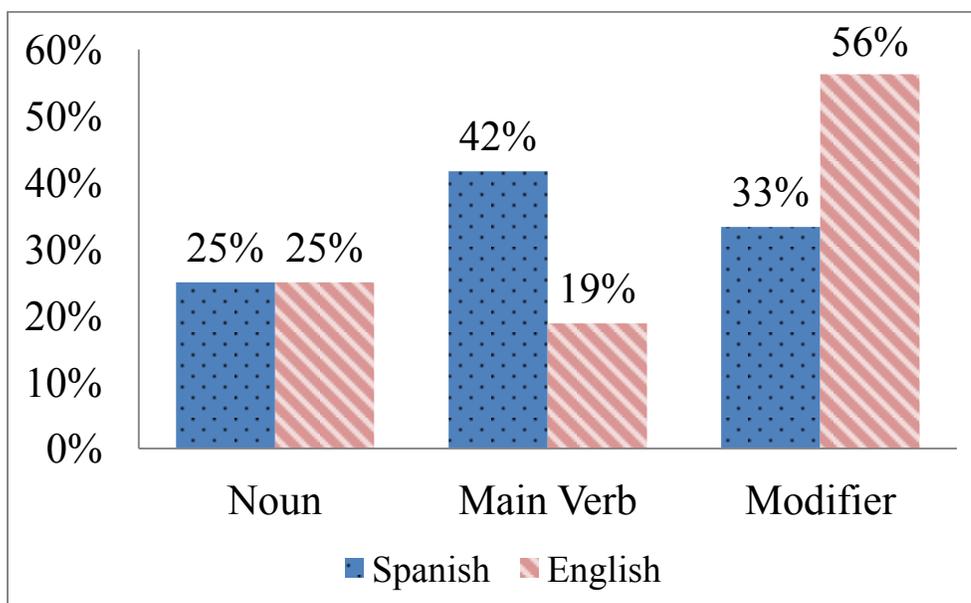
Based on previous research, it was predicted that the grammatical class of the stuttered word for Spanish and English stuttered words would be mostly function words. The results indicated that Spanish stuttered words were more often content words and English stuttered words were nearly equal numbers of function and content words which is different from previous research.

Figure 4: Percentages of grammatical class of the stuttered word in Spanish and English.



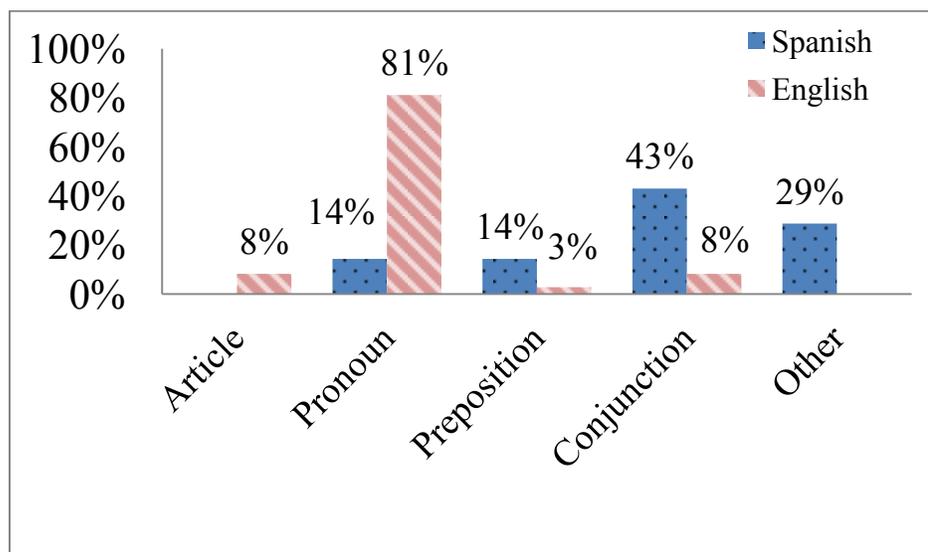
When examining the nature of the content stuttered word, it was thought that both Spanish and English stuttered words would more likely be verbs. However, results demonstrated that Spanish stuttered words were mostly verbs and English stuttered words were mostly adverbs and adjectives.

Figure 5: Percentages of types of stuttered content words in Spanish and English.



Function words were predicted to be more likely conjunctions, pronouns, and prepositions in English. Stuttered function words for this child were mostly conjunctions in Spanish and pronouns in English.

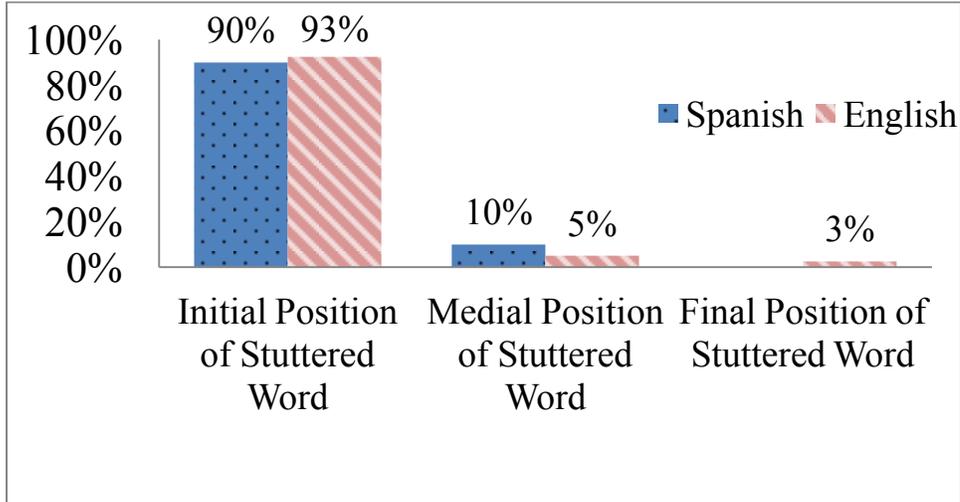
Figure 6: Percentages of the types of stuttered function words in Spanish and English.



Stuttering Loci

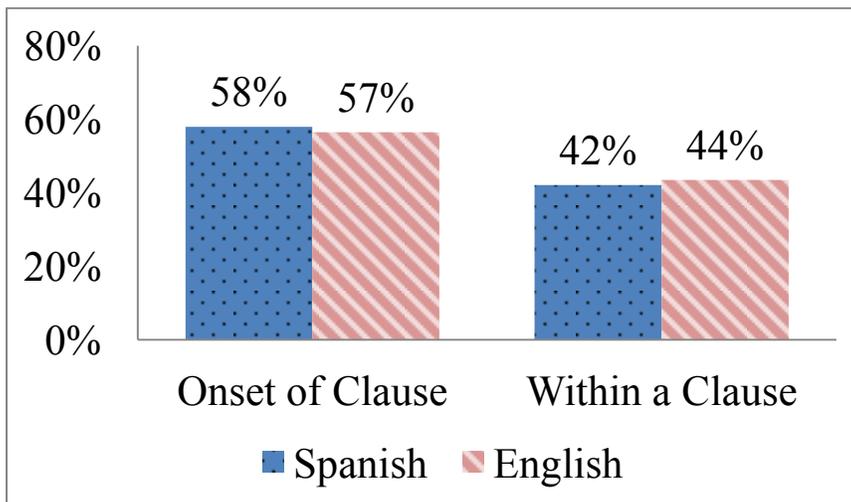
The hypothesis that most stuttering would occur at the initial position of both Spanish and English stuttered words was supported, with 90% and 93% of stuttering occurring on the initial phoneme in Spanish and English, respectively.

Figure 7: Percentages of stuttering loci in the stuttered word in Spanish and English.



Although it was hypothesized that stuttering in English would be mostly at the onset of the clause, whereas Spanish stuttering would be at the onset and within a clause, results revealed that stuttering was both at the onset and within the clause for both Spanish and English.

Figure 8: Percentages of stuttering loci in the clause in Spanish and English.



Discussion

Figure 9 demonstrates the similarities and differences of this child's stuttered word compared to previous research examining monolingual English and monolingual Spanish speakers. My predictions matched the outcomes for the following stuttering word characteristics: stuttered words were on monosyllabic words in both English and Spanish, English stuttered words were consonant-initiated words, English and Spanish stuttered words often began with voiced and voiceless fricatives, and stuttering loci was at the initial sound of the word or syllable in both languages.

There were also differences between my predictions and what was observed in XX's stuttered words. Although for both Spanish and English stuttered words were mostly on monosyllabic words, stuttered words were more often longer in Spanish. This could be an interaction effect with function words because more function words are longer in Spanish than in English. For example, the conjunction "pero" or "but" is 2 syllables in Spanish and 1 in English, the preposition "para" or "for" is 2 syllables in Spanish and 1 in English. The results demonstrated differences for the initial phoneme of the word compared to previous research. XX's stuttered words in both English and Spanish mostly began with consonants and more vowel-initiated words were observed in English. This contrasts with the findings of Bernstein Ratner and Benitez (1985), who observed that bilingual Spanish-English speaking adults stutter more on vowel initiated words. In Spanish, stuttered words often began with voiceless stops and in English, stuttered words often began with nasals. These differences may be related to XX's age and emerging sound systems.

There were a number of interaction effects in this study that merit additional study, including the relationships between word length and content words, linguistic

forms and stuttering, word length and grammatical class, and location of the word and grammatical class. For the grammatical content, Spanish stuttered words were more often content words and English stuttered words were nearly equal. However, the literature suggests that monolingual Spanish and monolingual English children both stutter more on function words than content words (Au-Yeung, Howell, & Pilgrim, 1998; Bloodstein & Gantwerk, 1967; Bloodstein & Grossman, 1981; Howell, Au-Yeung, & Sackin, 1999; Howell et al., 2004; Watson, 2002; Watson et al., 2007). The observation that XX stuttered more on content words in Spanish may be due to an interaction effect with word length and content words. XX often stuttered on verbs, which are longer in Spanish than in English. For example, “comer” or “eat” has 2 syllables in Spanish and 1 in English and “viene” or “come” has 2 syllables in Spanish and 1 in English. In English, XX stuttered more on adjectives and adverbs, which could be an interaction effect between the complexity linguistic forms and stuttering. XX stuttered more on conjunctions in Spanish, which is an interaction between word length and grammatical class because function words are longer in Spanish. XX stuttered more on pronouns in English, which is an interaction effect with location in the clause because pronouns are mostly at the onset of the clause. XX was consistent with previous reports suggesting that stuttering occurs most often at the initial position of the word in both languages (Watson, 2002; Bloodstein & Ratner, 2008). XX also stuttered both within and at the onset of the clause for both Spanish and English, which differs from the literature (Bloodstein & Ratner, 2008; Watson, 2002). This difference may be related to XX’s bilingualism and the acquisition of two languages.

CONCLUSIONS

The connected speech sample of a bilingual Spanish-English speaking child was collected and analyzed. Results indicated that the linguistic features of the stuttered word both paralleled and differed from what is observed in monolingual English and Spanish speakers. Differences were noted in several linguistic areas in this bilingual speaker such as word length, initial phoneme, grammatical class, and position in the clause. These findings support the conclusions that bilingual children who stutter are not simply the sum of monolingual Spanish speaking and monolingual English speaking children who stutter. Knowing these linguistic characteristics for bilingual children who stutter helps clinicians with treatment hierarchies.

There are some issues that could have impacted the results of this study and should be examined in future research. For example, contextual influences such as clinician versus parent interaction and familiarity with the conversational partner may have affected the speech sample. Future research should also focus on bilingual data collection that examines the influence of conversational partners, code switching, language use, and conversational topic. Due to the different conversational contexts, XX may have exhibited more stuttering in English than in Spanish. Despite these differences in stuttering frequency, there is no evidence to suggest that the linguistic features of the words that were stuttered would be different in samples with less stuttering. Future considerations should also observe the implications for diagnosis and treatment such as hierarchical levels as well as the interaction between the linguistic features. Although this was an exploratory case study, the linguistic features of this youngster's stuttered word provide additional insights about stuttering in bilingual speakers. Additional research,

including replication studies, may provide meaningful data to support our understanding of stuttering patterns in bilingual Spanish-English speaking children, and our treatment of this clinical population.

Figure 9: XX’s stuttered words (SWs) in Spanish and English compared with monolingual speakers.

	English Stuttered Words Consistent with Monolingual English CWS	Spanish Stuttered Words Consistent with Monolingual Spanish CWS
SW Length – 1 Syl	+	±
SW Initial Phoneme	±	±
SW Initial Consonant	NA	NA
SW Grammatical Class	-	-
Content SW	NA	NA
Function SW	+	NA
Position in Word	+	+
Position in Clause	±	+

This figure demonstrates the similarities and differences of XX’s stuttered words compared to monolingual speakers. The “=” indicates that the findings of this current study are consistent with previous research. The “-” indicates that current findings are different from earlier research. A “±” indicates that the outcomes demonstrated both similarities and differences when compared with previous research. “NA” indicates that there is no previous research that is applicable to this linguistic feature.

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