INFLUENCE OF SPANISH DIALECT ON THE PICTURE AND OBJECT NAMING OF PRE-SCHOOLERS

by

Christy Cameron

Bachelor of Science, 2008
University of Arkansas
Fayetteville, Arkansas

Submitted to the Graduate Faculty of
The Harris College of Nursing and Health Sciences
Texas Christian University
in partial fulfillment of the requirements
for the degree of

Master of Science in Speech-Language Pathology

May 2010

INFLUENCE OF SPANISH DIALECT ON PICTURE AND OBJECT NAMING BY PRE-SCHOOLERS

Thesis Approved:

Maria L. Muñoz

Major Professor

Committee Member

Committee Member

College of Nursing & Health Sciences

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

Literature Review

According to the American Speech, Language and Hearing Association (ASHA; 1985), all speech and language related testing must be conducted in a child's native language. No dialectal variation of English or any other language is considered a disorder (ASHA, 1983). These guidelines apply to all practicing speech-language pathologists regardless of whether he/she is monolingual or bilingual. This policy creates a challenge for the monolingual English speaker to adequately assess a child who speaks a language other than English. Additionally, the child may be speaking one of a number of different dialects. Therefore, it is important to be familiar with the specific dialect which the child speaks in order to adequately assess his/her skills (ASHA, 1983). Resources are needed to educate clinicians about the language and differences in dialect. However, there is limited information available and clinicians are often forced to rely solely on pre-existing standardized tests which may or may not be appropriate for the child.

The purpose of this project was to examine the impact of dialect on the confrontation naming of Chilean and Mexican-American pre-schoolers. The information regarding semantic differences across Spanish dialects is nearly nonexistent. However, cross-linguistic studies of semantics have examined three different factors: cultural influences, word frequency and age of acquisition (Mathuranath, 2007; Fernandez, Diaz, Alonso & Beato, 2004; Navarrete, Basagni, Alario & Costa, 2006; Hooper, 1976; Smith, 1934; Perez & Navalón, 2005; Alvarez & Cuetos, 2007). Since dialects are a microcosm of language, these factors are likely relevant to understanding dialectal influences on semantics.

Spanish was the focus of this study because it is one of the languages most commonly spoken in the world and the United States. According to the U.S. Census Bureau (2005-2007), almost 15% of the population in the United States was identified as being of Hispanic or Latino origin. Although this number does not precisely correlate with the number of people who speak Spanish in the United States it is an indication of the high possibility of having a Spanish speaker in speech-language therapy.

Cultural Influences on Vocabulary

Culture consists of food, clothing, religious practices, tools, and lifestyle (Mathuranath, 2007). These aspects vary across populations and impact the expressive language used by the people of that culture. The linguistic material available to a population is dependent on the objects and experiences to which they are exposed. For example, if a food item or tool does not exist or is not necessary in a culture then the people may not have knowledge of the word used to represent the object.

Evidence of culture-based differences in vocabulary development and concept and name agreement comes from a variety of sources. Mathuranath (2007) examined cultural influences on picture naming. He used pictures from the Snodgrass and Vanderwart (1980) picture set and pictures chosen specifically for the Indian population in order to compare results against stimuli normed on a Western population. Of the 67 pictures selected from the Snodgrass and Vanderwart (1980) set only 31% showed concept agreement comparable to Western norms. Therefore only 20 pictures were identified by the Indian and Western population as being part of the same semantic category. The researchers concluded that pictures proven to be valid and reliable as a test for Western adults are not as accurate for a population from a different culture. Yoon, Feinberg, Luo, Hedden, Gutchess, Chen et.al. (2004) found similar results when comparing name agreement, concept agreement and familiarity of the 260 picture stimuli of the Snodgrass and Vanderwart (1980) set between Chinese and North American younger and older adults. In their analysis they found that only 22% of the 260 pictures had equivalent levels of name agreement and concept agreement across all age and culture sub-groups. These studies support the idea that cultural influences have an impact in the expressive vocabularies of adults who speak different languages. However, it can be reasoned that dialect within a language is a microcosm of a language within the world body of languages, so culture will have equally strong effects on dialect.

In addition to differences in name and concept agreement, Fernandez, Diaz, Alonso, and Beato (2004) investigated the way in which culture affects free-association responses of undergraduate students in Salamanca, Spain. A free association response was defined as the automatic word a person gives when shown a written stimulus word. The number of times a response was given for a stimulus word represented the strength of the connection between the two words. These frequency indexes of free-association responses are often used to develop test material (Fernandez et. al., 2004). Fernandez, et al. (2004) used the Spanish words standardized by Sanfeliu and Fernandez (1996) from the Snodgrass and Vanderwart picture set. The students provided a written response giving the first word that came to mind. The results indicated a large number of idiosyncratic responses (responses only given once) but also showed overall name and concept agreement. The researchers acknowledge that "Because free-association norms can be significantly determined by linguistic peculiarities and cultural usages, caution should be used in generalizing our results, obtained in Spain, to other Spanish-speaking populations" (Fernandez et. al., 2004 p. 578). It is for that reason that more research in the area of free-association norms and naming is necessary to be informed and prepared for working with people from different cultures.

Culture also affects they way in which children interact with adults and may influence how they respond to certain task demands (Peña and Quinn, 1997). Researchers have found that mother-child interactions across cultures are not uniform. Mainstream European-American mothers tend to use one word labels when looking at pictures with their child. Whereas, Puerto-Rican mothers are more likely to describe an object's function rather than label it (Peña and Quinn, 1997). This cultural influence on mother-child interactions may limit a child's exposure to certain tasks. Therefore when asked to do a task (i.e. label a picture) the child may not be familiar with what the examiner is asking of him. Peña and Quinn (1997) tested typically and non-typically developing Puerto-Rican and African American children and found that the tasks with which the children were more familiar were more sensitive to distinguishing between the two groups.

Cultural Influences on Assessment. Differences in concept and/or name agreement will impact the reliability and validity of tools that assess language. Mathuranath (2004) and Yoon et. al. (2007) examined these issues in regards to testing adult cognition. However, since the task used to test children's phonology and semantics is typically labeling pictures these issues will affect assessment of children as well. For instance, in the administration manual of the Preschool Language Scale-4 Spanish (PLS-4 Spanish) (Zimmerman, Steiner & Pond, 2002) which is a test that uses pictures and objects as stimuli to test language, the examiner is cautioned that the response of a child can vary depending on the country of origin, the region of the country of origin and where the child currently lives. There are also alternate words listed on the test form which represent different dialectal variations of the word (Zimmerman et. al., 2002).

Confrontation naming is what examiners rely on to gather information about the language skills of a client. Since standardized data are affected by culture, the examiner must be aware of the client's cultural background and the dialect being spoken or deficits in language acquisition may be wrongly identified. For phonological tests, all targets must be produced; otherwise the intended process cannot be measured. Most tests accommodate for dialectal differences by instructing the examiner to probe further in an attempt to have the child produce the desired target. This is true in the administration of the Assessment of Phonological Patterns Spanish 2nd Edition (Hodson & Prezas, 2008). Despite these accommodations, it remains ideal to have the child produce the target spontaneously. However, for the APPS-2, the researchers encourage spontaneous responses with objects, versus pictures. In the case of a child who does not spontaneously produce a target word, delayed imitation is encouraged.

Word Frequency Effects on Vocabulary

Word frequency is a measure of the frequency with which a word is found in everyday language use and is a good predictor of language processing skills (Bormann, Kulke, and Blanken, 2008). Word frequency has most commonly been investigated in regards to lexical retrieval, naming latencies, and accuracy (Navarrete, Basagni, Alario & Costa, 2006; Cuetos, Aguado, Izura, & Ellis, 2002). Using student participants from the University of Barcelona, Navarrete, et al. (2006) linked faster latencies to high frequency words. Cuetos, et al. (2002) used sixteen Spanish aphasiac participants and the Sanfeliu and Fernandez (1996) set of Spanish adapted pictures from Snodgrass and Vanderwart (1980) to demonstrate that higher word frequency led to more accurate picture naming. Faster latencies and more accurate naming both contribute to free-association responses. Words that occur with a higher frequency will be quickly accessed and produced.

The frequency with which a word occurs in a language affects the phonological production of the word (Hooper, 1976; Brown, 2006). Hooper illustrated this phenomenon in English with an example of the deletion of the post stress schwa in higher frequency *mem[ø]ry* versus lower-frequency *mamm[ə]ry* (Hooper, 1976). Spanish phonemes, in addition to sounds in English are affected by higher frequency words (Brown, 2006). Colombian and Venezuelan Spanish are two examples of dialects which follow this pattern. Final /s/ deletion in Colombian Spanish is more pronounced in high frequency words. The same is true in Venezuelan Spanish which demonstrates a moderate rate of final /s/ deletion (Brown, 2006).

In addition to effects on phonology, word frequency is a reflection of the culture and an indication of the word choices of a population. Smith (1934) examined the differences in word frequency between children from the mainland United States and Hawaii by analyzing 1,021 50 utterance spontaneous play-based language samples of Hawaiian children and compared them with language samples collected during the International Kindergarten Union's Study (As cited in Smith, 1934) of the vocabulary of children before they enter the first grade. Although no statistical analyses were done on the information Smith found that the children from Hawaii often misused the past tense, confused inflections, and less frequently used contractions. There was also a large difference in the frequency of certain words. For instance, the word “food” was only recorded once in the Hawaiian samples but noted twenty-one times in the studies done on the mainland. Although there seems to be obvious design flaws with this experiment, the overall conclusion remains that word frequency varies between dialects of the same language. In this particular study, Smith (1934) notes that some of the differences in word frequency may be due to contact with other languages on the island. The issue of language contact is not limited to Hawaii and has an impact in the formation and use of dialects.

Word Frequency and Assessment. Tests which use picture naming to measure abilities rely on the recall of linguistic information linked to that picture. The words that occur more frequently in the dialect spoken by the child will be more easily recalled. Also, these words likely will be the automatic responses of the child. For monolingual examiners, testing language abilities of children in a second language already presents a significant number of challenges, dialectal differences only compound these issues. That is why there exists a need to add more detail to the already existing data regarding the classification of dialect.

Age of Acquisition Effects on Vocabulary

Age of acquisition is considered the age at which one learns a word. Age of acquisition effects the retrieval of words from the mental lexicon. Catling and Johnston (2009) demonstrated that words that are learned earlier are easier to retrieve than those learned later (Catling & Johnston, 2009). In four different experiments, the authors found faster naming times in all tasks for words learned at an earlier age. Due to differences in linguistic material and the age of acquisition of words and concepts naming times can vary depending on the culture and dialect of the population.

Perez and Navalón (2005) established objective age of acquisition norms for the Spanish language. The authors used a 178 picture set standardized for Spanish (Perez and Navalón, 2003). The participants were monolingual children from Spain. As part of the same study, the researchers compared their results with age of acquisition studies for Spanish, Cuban Spanish, British English, North American English, French, Icelandic, Italian and Dutch. Through the comparisons, the researchers found that the ages of acquisition for words in all of these languages are closely intercorrelated. This suggests that the words that make up a child's vocabulary develop on a similar continuum across languages. However, the studies used to reach this conclusion were conducted in different countries and reporters did not report the stimuli that were used. Consistency of stimuli is necessary to adequately compare age of acquisition norms across populations. The lack of coherence in cross cultural age of acquisition studies along with evidence regarding cultural differences and word frequency (Mathuranath, 2004; Yoon et. al., 2007) lessen the validity of the claim of consistency in age of acquisition norms across populations.

Age of Acquisition and Assessment. Age of acquisition affects retrieval and recall of vocabulary. This indicates faster latencies for words that were learned earlier in development. In turn this means that the word that is easier to access will be the first word produced. The majority of child language tests rely on an age of acquisition sequence when developing the test structure and choosing test material. This makes it vital that the child being tested falls within the norms of this guiding age scale. As of now, there is not enough reliable data to assume that age of acquisition norms for all populations and speakers of all dialects follow the exact same trajectory or include the same words. This difference in cultures and dialects is something that may affect the development of testing materials, or at least affect the interpretation of performance of non-standard dialect speakers on some language tests.

The differences in culture, word frequency and age of acquisition norms across populations make the issue of dialect classification during language assessment problematic. The need for research regarding different dialects, and Spanish dialects in particular, is pressing and the more information we have the more adequately students from diverse backgrounds can be served in the area of language disorders.

Statement of Purpose

The purpose of this project was to examine the impact of dialect on the confrontation naming of Chilean and Mexican-American pre-schoolers. Two experiments were conducted to examine semantic usage and the affect on assessment in the Chilean and Mexican-American dialects. The purpose of Experiment One was to examine word choice in the naming of Chilean pre-schoolers. Specifically, the following research questions were addressed:

1) How does Chilean dialect impact performance on elicited naming tasks?
2) How do responses to specific stimuli in elicited naming tasks vary due to Chilean dialect?

The purpose of Experiment Two was to examine word choices in naming of Mexican-American pre-schoolers. Specifically, the following research questions were addressed:

1) How does Mexican-American dialect impact performance on elicited naming tasks?

2) How do responses to specific stimuli in elicited naming tasks vary due to Mexican-American dialect?

3) How do standardized scores differ when culturally appropriate responses are counted as correct in the raw score calculation?

Experiment 1

Method

Participants

Twenty children (15 females, 5 males) ranging in age from 44-71 months participated in this study. Participants were recruited from the Colegio Mayor in Santiago Chile with the assistance of professors and clinicians at the Universidad Mayor. Participants met the following criteria to participate in the study: 1) no evidence of organic anomalies related to the speech and hearing mechanism 2) passing of a hearing screening administered bilaterally at 500 Hz, 1000 Hz, 2000 Hz, and 4000 Hz, 3) Spanish as the primary language spoken in the home, and 4) no history of a developmental delay. Information from parents was obtained via a questionnaire regarding developmental milestones, home language use, and child and family histories (see Appendix). Parental consent forms and surveys were provided in Spanish. Informed consent was obtained before testing began.

Procedures

Participants were administered the Assessment of Phonological Patterns Spanish- 2nd Edition (APPS-2; Hodson & Prezas, 2008) and The Expressive One Word Picture Vocabulary Test- Bilingual Edition (EOWPVT-BE; Brownell, 2001a). The APPS-2 (Hodson

& Prezas, 2008) includes forty-four words in Spanish, chosen to target phonological patterns. The participants were asked to name either pictures or objects representing the target word. For this test, there is no standardized administration order for the presentation of stimuli; therefore, each participant was administered the test items in a different order. For the purposes of this experiment, the APPS-2 (Hodson & Prezas, 2008) was used as a confrontational naming task with a focus on the semantic response rather than as an assessment of phonological development. The APPS-2 (Hodson & Prezas, 2008) was administered according to prescribed procedures, but only the first response was analyzed in relation to match-mismatch with the target. A total of 50 pictures were administered in the order presented in the manual for the EOWPVT-BE (Brownell, 2001a). The same 50 pictures were presented to each participant regardless of instructions for establishing basals and ceilings. For the purposes of this study, only the initial response was accepted for analysis. All screening and testing administration and scoring were completed by two clinicians from Universidad Mayor and two TCU graduate student clinicians supervised by an ASHA certified Speech-Language Pathologist.

Transcription and Recording. All initial responses on the EOWPVT-BE (Brownell, 2001a) and the APPS-2 (Hodson & Prezas, 2008) were transcribed live by the administrator. Reponses were audio recorded using a Marantz digital recorder for later transcription to establish reliability.

Data Analysis. The following variables were measured:

1. A strict score was calculated for both the EOWPVT-BE (Brownell, 2001a) and the APPS-2 (Hodson and Prezas, 2008) to obtain a frequency count (number correct) and percentage correct (number correct/ number

administered). Only those responses that matched the target identified in the test manual were counted as correct.

2. A loose score was calculated for both the EOWPVT-BE (Brownell, 2001a) and the APPS-2 (Hodson and Prezas, 2008) to obtain a frequency count and percentage correct (number correct/ number incorrect). Responses consistent with the Chilean dialect were counted as correct though they were not the target word identified in the test manual.
3. An item analysis of the EOWPVT-BE (Brownell, 200) and the APPS-2 (Hodson & Prezas, 2008) was conducted by calculating the percentage of children who correctly named each item.
4. A response analysis was completed for the EOWPVT-BE (Brownell, 2001a) and APPS-2 (Hodson & Prezas, 2008) for those responses that did not match the standard target. A frequency count was calculated for each item in the following categories: dialect, semantic, subordinate, supraordinate, circumlocution, visual confusion, generalization, diminutive, English, no response.

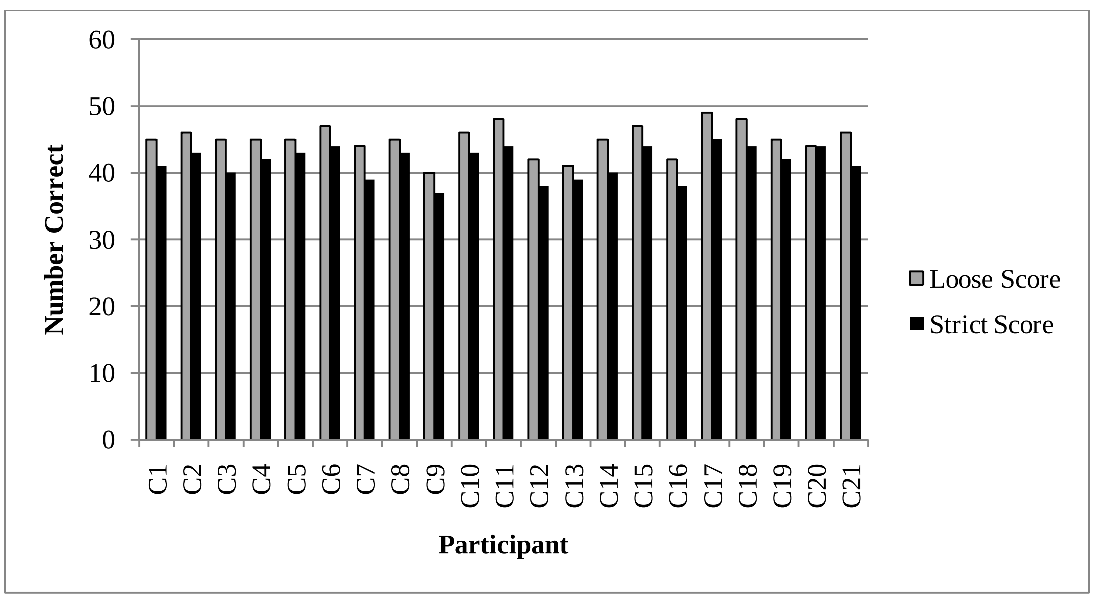
Reliability. Interjudge reliability was established by comparing 50% of orthographic, live transcriptions for the EOWPVT-BE and the APPS-2 with orthographic transcriptions from the audio recordings. From this comparison, percent reliability (matches-mismatches/total # of responses) was determined for the EOWPVT-BE and the APPS-2. Reliability for the EOWPVT-BE was 89% and for the APPS-2 reliability was 83%. To establish reliability for the response analysis, the primary investigator and a second reviewer categorized responses and discrepancies were discussed until agreement was reached on 100% of responses.

Results

A comparison of strict and loose scoring on the EOWPVT-BE

The mean strict score (out of 50) of the EOWPVT-BE (Brownell, 2001a) was 41.6 (SD= 2.3, range 37-44). The mean loose score was 45 (SD= 2.4, range 40-49). The mean difference between strict and loose scores was 3.4, representing an average of 8.2% increase in raw score when dialectally appropriate responses were counted as correct. The impact of dialect on scoring varied for each child (see Figure 1). Difference scores for individuals ranged from 0 to 6 (see Figure 1).

Figure 1. EOWPVT-BE: Individual comparisons of strict score vs. loose score



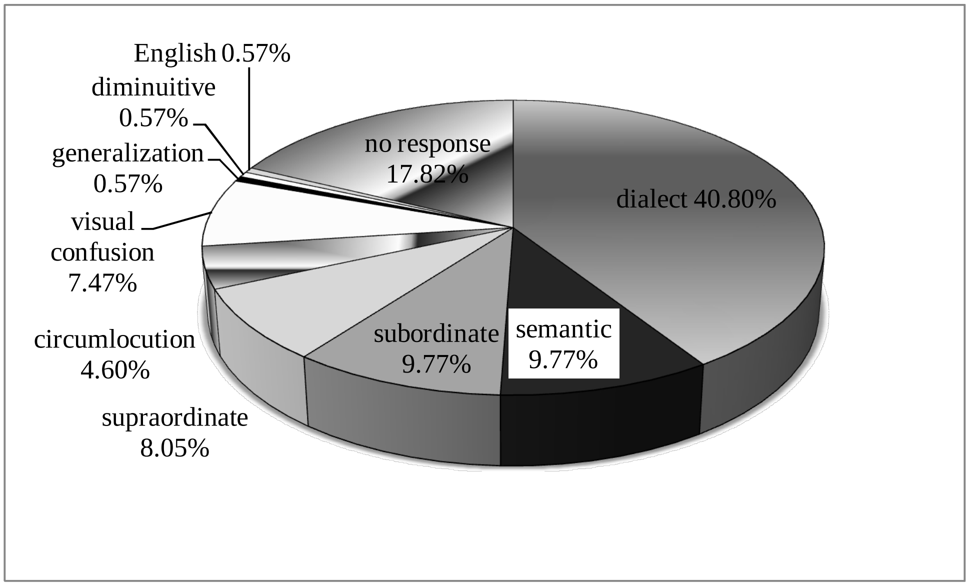
Item Analysis of EOWPVT-BE

Of the fifty items administered, 54% of items were named according to test specifications by more than 95% of respondents. The overall trend went from less to more difficult as the item number increased, which is expected. However, there were a significant number of exceptions to this trend. For example, the first eight stimuli yielded between 95-100% correct responses whereas with the ninth stimulus percent correct drops to 52%. Similarly, stimulus item 23 yielded 81% correct and item 25 yielded 90% correct while item 24 yielded 9.5% correct (see Figure 2).

Response Analysis on the EOWPVT-BE

Responses which did not match the standard target were placed in one of ten categories of responses (see Figure 3). Of these categories, dialectal responses accounted for the highest percentage (40.8%) followed by no response (17.82%), then semantic and subordinate both with 9.77% of errors, then supraordinate (8.05%), visual confusion (7.47%), circumlocution (4.6%). Diminutive, English and generalization all had .57% of errors.

Figure 3. Percent of responses in each error category



A comparison of strict and loose scoring on the APPS-2

The mean strict score (out of 44) for the APPS-2 (Hodson & Prezas, 2008) was 34 (SD= 2.4, range 29-39). The mean loose score was 37 (SD= 2.7, range 31-42). The mean difference between strict and loose scores was 2.8. The average percent change between the strict score and loose score for each participant was 8.2% when dialectally appropriate responses were counted as correct. The impact of dialect on responses varied between 1 to 5 points gained in loose scoring for each child. (see Figure 4).

Figure 2. Perecent correct responses per item on the EOWPVT-BE

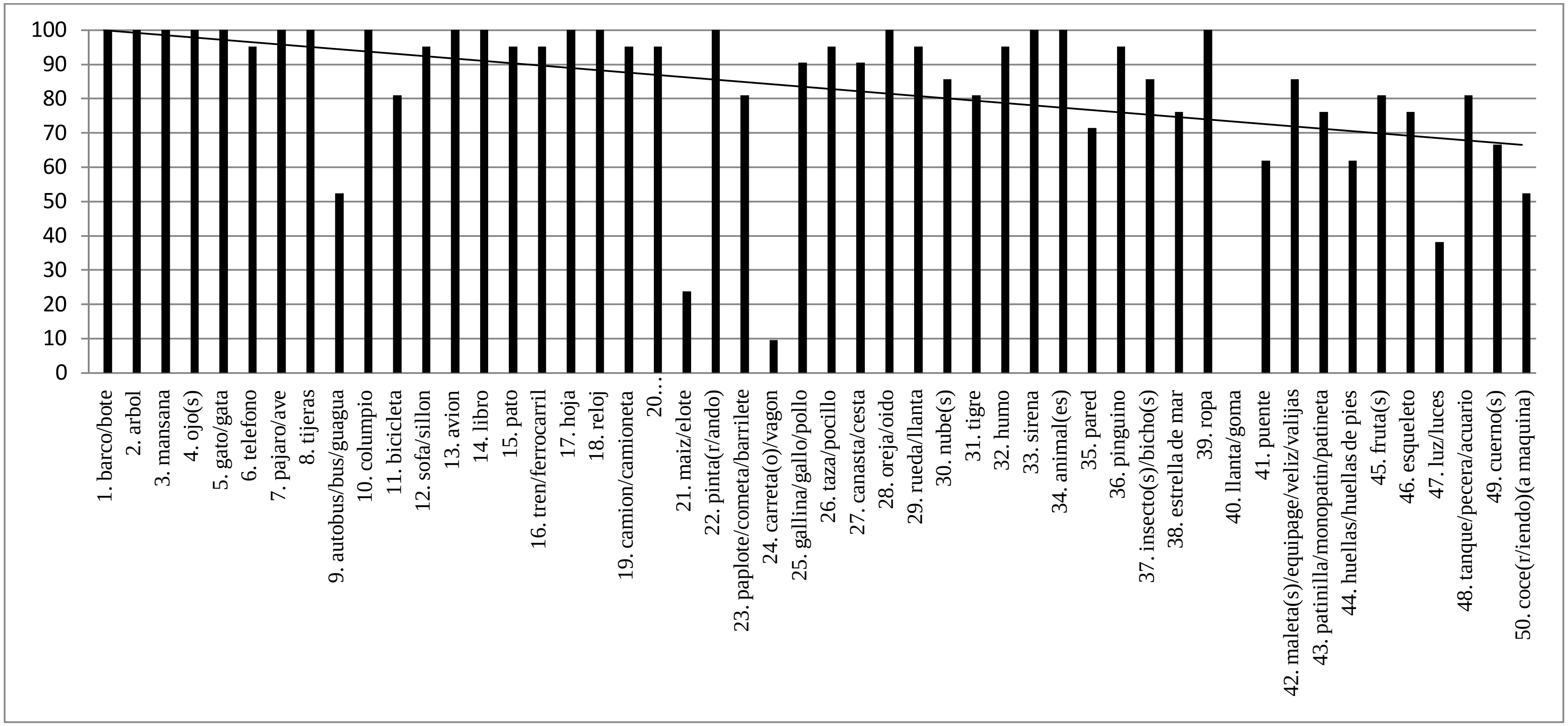
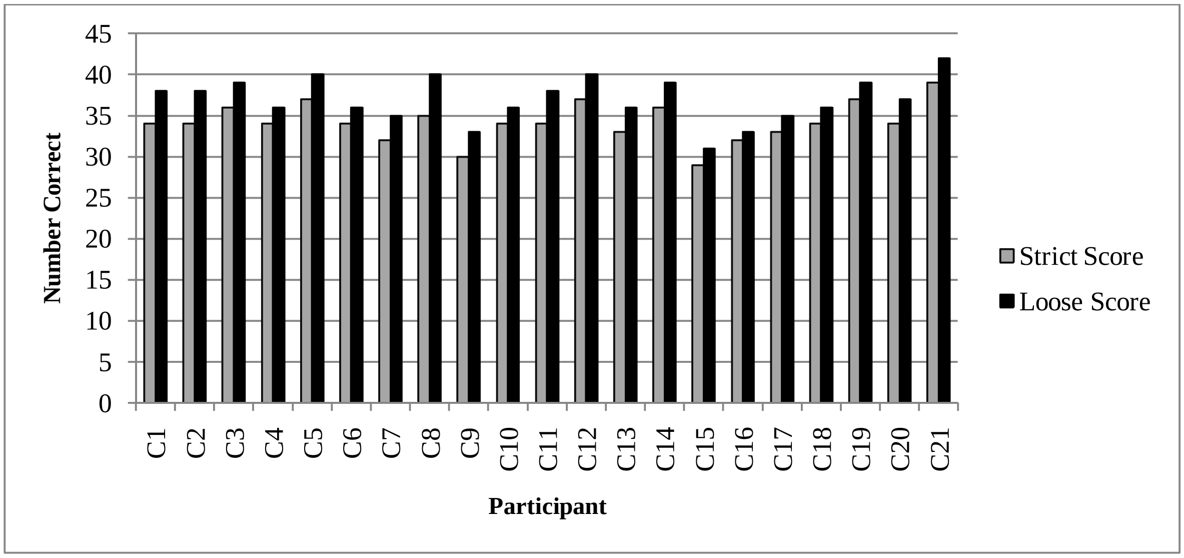


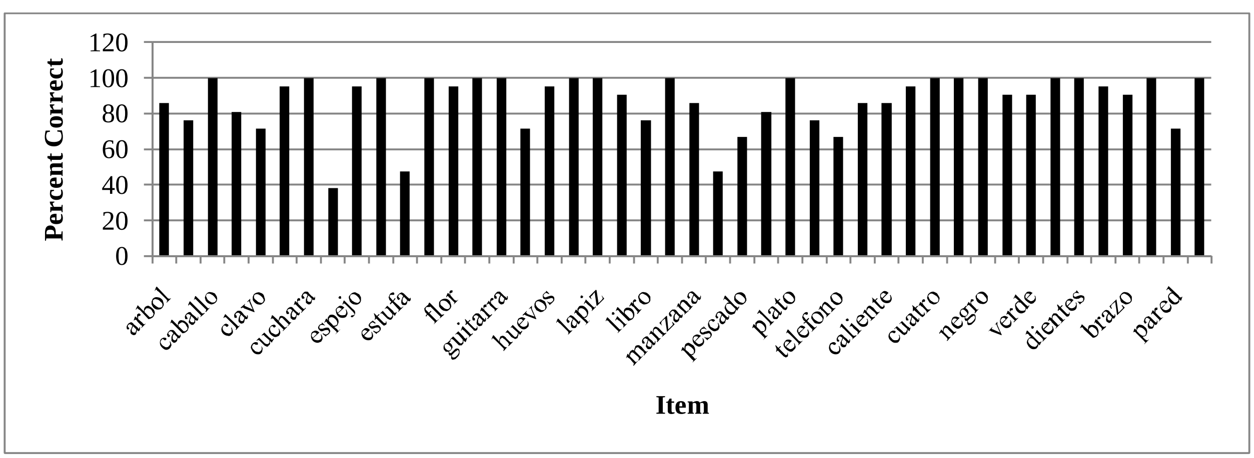
Figure 4. APPS-2: Individual comparison of strict score v. loose score



Item Analysis of APPS-2

Of 44 items administered, 72% of the items elicited target responses from 80% or more of respondents. The percent correct of initial responses for the APPS-2 (Hodson & Prezas, 2008) ranged from 14%-100% (see Figure 5).

Figure 5. The percentage of participants who correctly named each item on the APPS-2 based on strict scoring.



Response Analysis

Responses which did not match the target could be placed in one of six categories of responses (see Figure 6). Of these categories, dialectal responses account for the highest percentage (42%) followed by visual confusion (36%), then semantic and circumlocution with 13% each. The two categories with the least number of responses were English (3.6%) and subordinate (1%). Dialectal responses accounted for 4.7% to 90% of responses for individual items (see Table 1).

Figure 6. APPS-2: Percent of responses in each category

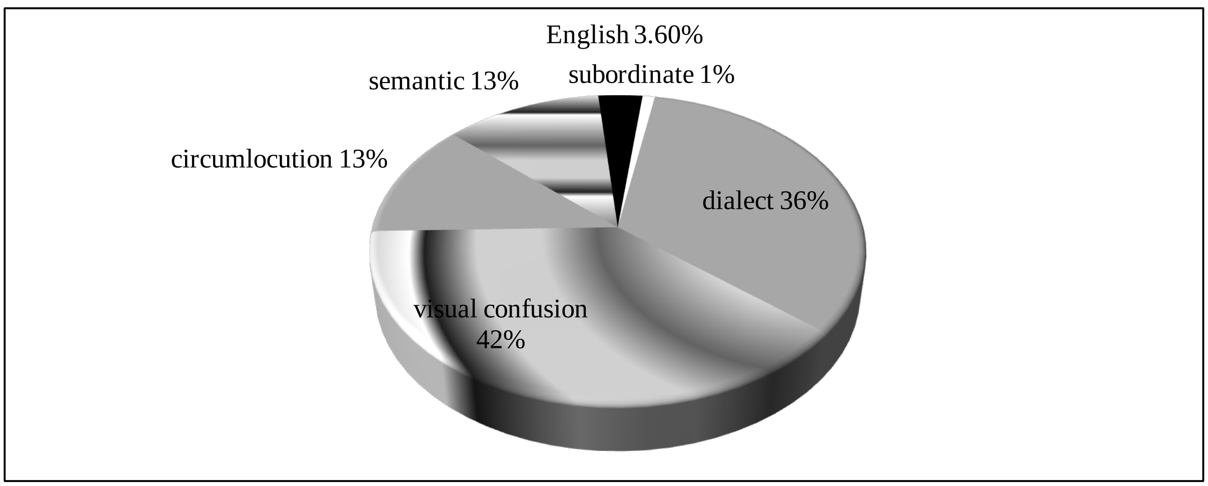


Table 1. Target responses and acceptable dialectal equivalents

Target	Dialectally Appropriate Response
Autobus/bus/guagua	Micro
Maiz/elote	Choclo
Paplote/cometa/barilleta	Volantín
Pared	Muralla
Llanta/goma	Rueda, neumatico

Carretera/Vagon	Carretilla, carrito
Chicle	Goma de Mascar
Escuela	Colegio
Estufa	Cocina
Libro	Cuento
Muñeca	Wa wa, Bebe
Pescado	Pes
Sombrero	Gorro

Discussion

The results from Experiment 1 indicated that the use of Chilean dialect impacts performance on elicited naming tasks. A comparison of the loose scores and strict scores on the EOWPVT-BE (Brownell, 2001a) revealed an increase in the raw score when dialectally appropriate responses were counted as correct. A semantic analysis of APPS-2 (Hodson & Prezas, 2008) also revealed an increase in match-mismatch percentage. The item analysis indicated that specific items were most likely to elicit a dialectal variation of the response, such as *maiz* and *carretera* (see Table 1). The results suggest assessments of expressive vocabulary designed to measure ability may underestimate skill for children speaking a different dialect than those on which the test was normed.

For strict scores, the distribution of responses across the range of stimuli follows the developmental progression of difficulty in the EOWPVT-BE (Brownell, 2001a), i.e. accuracy of response decreases as the item number (and by design, difficulty) increases. Despite this overall trend, there were several instances were specific items did not adhere to this idea. For instance, 100% of students accurately name stimulus item 19 as well as item 39 but only 9.5% accurately named stimulus item 24. This is a possible indicator that the age of acquisition of vocabulary differs in speakers of Chilean dialect. Without the use of proper dialectal equivalent it is not possible to determine the level of expressive language development.

Experiment 2

Method

Participants

Thirteen students (9 females, 4 males) ranging in age from 45-60 months participated in this study. Participants were recruited from Head Start Centers in Fort Worth by graduate and supervising clinicians from Texas Christian University. Participants met the following criteria to participate in the study: 1) no evidence of organic anomalies related to the speech and hearing mechanism 2) passing of a hearing screening administered bilaterally at 500 Hz, 1000 Hz, 2001 Hz, and 4000 Hz, and 3) Spanish was the primary language spoken in the home. Parental consent forms were provided in Spanish and consent was obtained before testing began. The participants were administered the Receptive One Word Picture Vocabulary Test (Brownell, 2001b) as a means to verify that all children were typically developing and all the participants scored better than 1.5 standard deviations below the mean.

Procedure

Participants were administered The Expressive One Word Picture Vocabulary Test Bilingual Edition (EOWPVT-BE; Brownell, 2001a). Stimuli were administered in the order presented in the manual. The pictures were presented to each participant in accordance with standardized procedure for establishing basals and ceilings. For the purposes of this study, the initial response was scored as correct or incorrect based on guidelines in the manual. All screening and testing administration and scoring were completed by graduate clinicians from TCU supervised by an ASHA certified Speech-Language Pathologist.

Transcription and Recording. All initial responses were transcribed live by the administrator. All test administrations were audio recorded using a Marantz digital recorder to establish reliability.

Data Analysis. The following variables were measured:

1. The test was initially scored according to standardized procedures. A raw score using appropriate basals and ceilings was calculated and converted into a standard score.
2. A strict score of the items administered for the EOWPVT-BE (Brownell, 2001a) was calculated to obtain a frequency count (number correct) and percentage correct (number correct/ number administered). Only those responses that match the target identified in the test manual were counted as correct. Since a different number of students answered each question, frequency counts were converted to percentages to allow for comparison.

3. The standard score was recalculated based on a loose score which counted culturally appropriate responses as correct. A loose score of the items administered from the EOWPVT-BE (Brownell, 2001a) was calculated to obtain a frequency count and percentage (number correct/ number incorrect). Responses identified as culturally appropriate for speakers of Mexican-American dialect were counted as correct though they were not the target word identified in the test manual. These scores were converted to percentages to allow for comparison
4. An item analysis of the EOWPVT-BE (Brownell, 2001a) was used to examine agreement between the response and target word for individual responses. The percent correct for those items with 10-13 total responses was calculated according to the test manual. A response analysis was completed for the EOWPVT-BE (Brownell, 2001a). Each item identified as incorrect based on guidelines in the manual was placed into a response category. A frequency count was calculated for each item in the following categories: no response, description, semantic, function, phonemic, onomatopeia, subordinate, superordinate, gesture, visual confusion and, list.

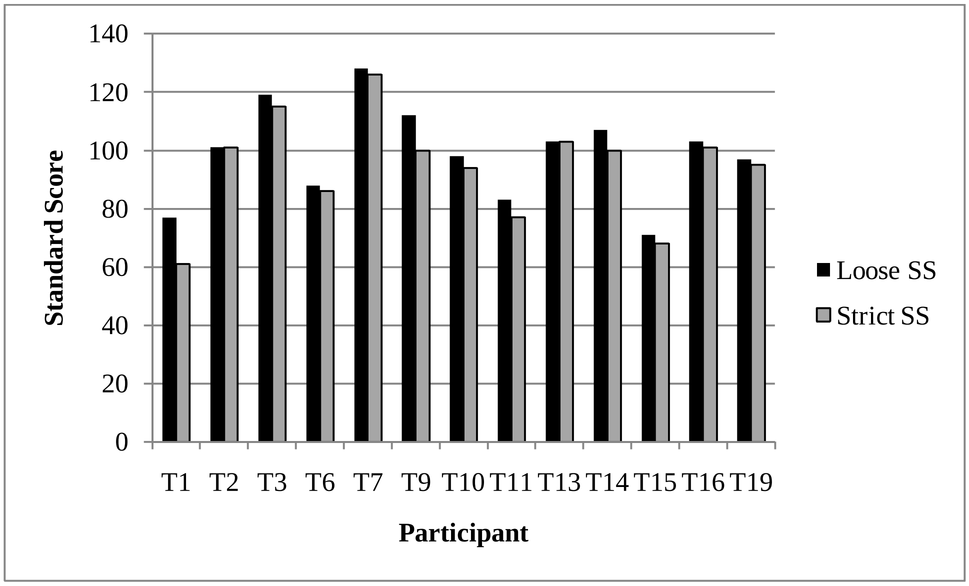
Reliability. Interjudge reliability was established by comparing orthographic, live transcriptions of 20% of the samples for the EOWPVT-BE to orthographic transcriptions from the audio recordings. From this comparison, percent accuracy (matches-mismatches/total # of responses) was determined for the EOWPVT-BE (Brownell, 2001a). This resulted in a percent accuracy of 93%. For the response analysis, the primary investigator and a second reviewer categorized responses and discrepancies were discussed until agreement was reached on 100% of responses.

Results

Raw and standard scores on the EOWPVT-BE

When scored according to standardized procedures, the average raw score for the EOWPVT-BE (Brownell, 2001a) was 27.8 (SD= 9.5, range 10-49). Standard scores were derived based on strict and loose scoring. The average standard score based on strict scoring was 94.4 (SD= 17.9, range 61-126) which is 6 points below the mean and within one standard deviation (M=100, SD=15). The mean standard score based on loose scoring was 99 (SD= 16, Range 71-128) which is 1 point below the mean and also within one standard deviation.There was an average 5.6% change in standard scores when culturally acceptable responses were counted as correct (see figure 7).

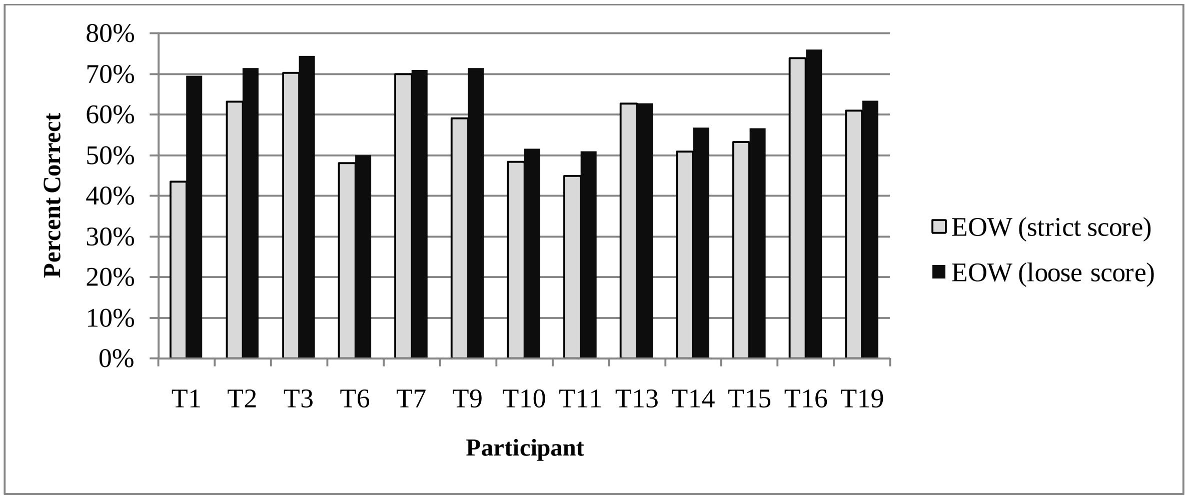
Figure 7. Standard scores based on strict and loose scoring



Strict v. Loose Scoring on EOWPVT-BE

The mean strict score (number correct/ number administered) for the EOWPVT-BE (Brownell, 2001a) was 59% (SD= 1%, range 43%-74%). The mean loose score was 65% (SD= .8%, range 50%-76%). The mean difference between scores was 2.4 with individual respondent gaining between 0 to 6 points when culturally appropriate responses were counted as correct. The mean percent change from strict to loose scores was 12% with a range of 0% to 60% change (see Figure 8).

Figure 8. A comparison of percent correct with strict and loose scoring for each participant on the EOWPVT-BE



Item Analysis of EOWPVT-BE

The progression of the number of correct responses followed the progression of difficulty the order of items represents. The overall trend progresses slightly from less difficult to more difficult as the item number increases. However, there are a few items that deviate from this expected trend. For example, the variability in percent correct for items named by 10-13 respondents ranges from 100% correct on Item 5 to 42% on Item 9 and then 100% on Item 28 (see Figure 9).

Response Analysis

The most common error type was no response (22.31%) followed closely by semantic errors (21.49%). These two categories were followed by visual confusion (14.46%), subordinate (11.16%), superordinate (9.09%), description (7.85%), function (6.2%), list (5.79%), then onomatopeia (.81%), and phonemic and gesture both with .41% of responses (see figure 10). Description and function responses were counted as correct during loose scoring (see Table 2).

Figure 10. EOWPVT-BE: Percent of responses in each category

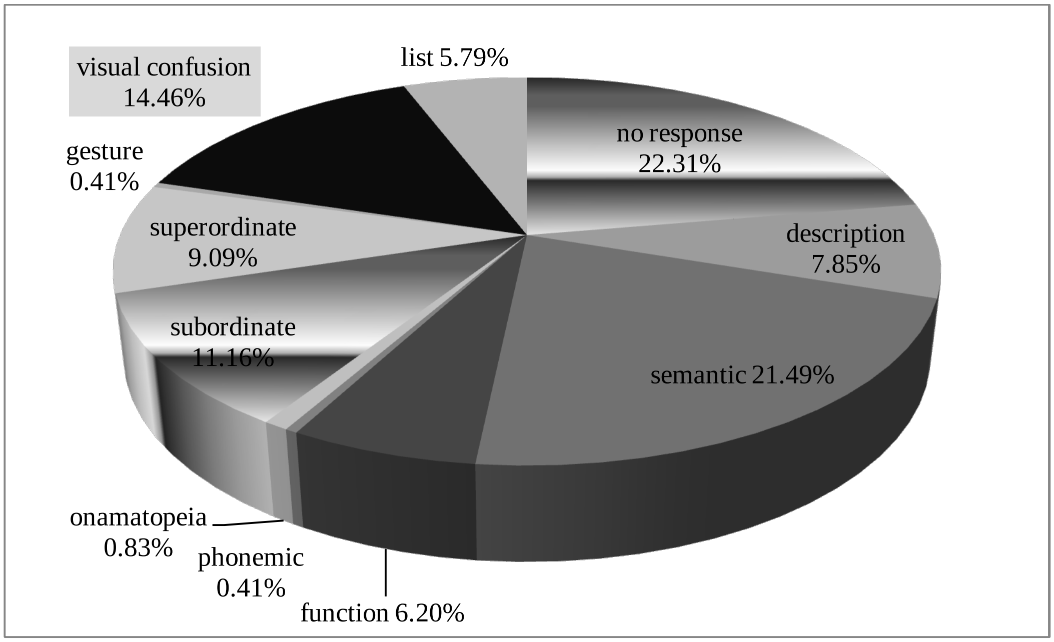


Figure 9. Percent correct for items with 10-13 respondents

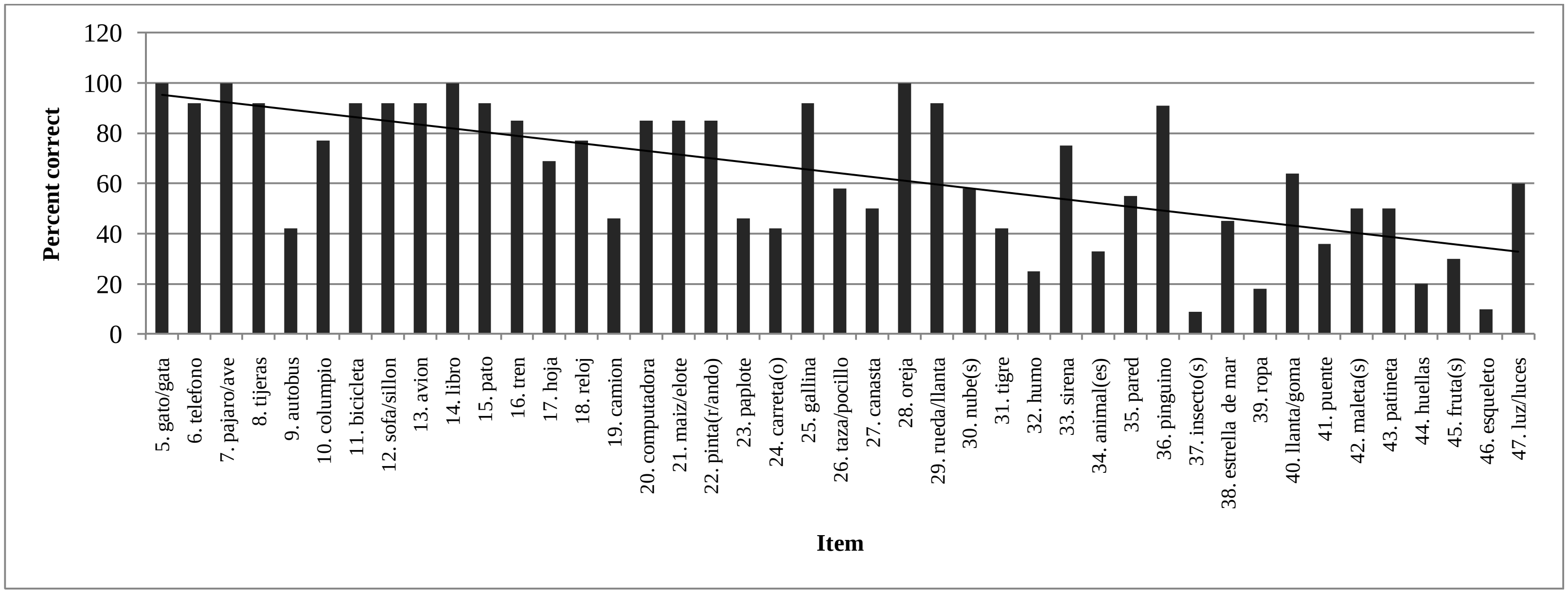


Table 2. Target responses and culturally appropriate equivalents

Target	Culturally Appropriate Response
Tijeras	Para cortar
Columpio	Para subir
Sofa/sillon	Para dormir
Reloj	Para apuntar
Maiz/elote	Para comer

Discussion

Effects of dialect were not as evident for Mexican-American participants as they were for Chilean participants. This is most likely because the test was designed for use with this population. However, through the analysis of the naming task it was discovered that Mexcian-American children adhere to different naming conventions than other children might (Peña, 1997). This was evident in the item analysis which revealed a large number of responses which were describing rather than naming the picture.

These differences, and not dialect, were the influencing factors on naming. Any response categorized as a description error was counted as correct when calculating the loose score. These types of responses are considered to be acceptable and appropriate from speakers of Mexican-American Spanish (Peña 1997). With these responses counted as correct, there was an average 12% increase in scores. This degree of improvement in scores indicates that using this naming task to determine expressive language abilities may create a misrepresentation of developmental level. Examples of this type of response can be seen in

Table 2. The participants in Experiment 2 had difficulty with items which required them to look at a number of objects and provide a category name. Ten items required a category response. Of these ten items a total of 76 responses were provided and only 23 of them were correct. This means that only 30% of respondents successfully provided a category name. Overall, the three most frequent response types were subordinate (22%), no response (18%), and list (13%). Both subordinate and list responses can be attributed to a cultural preference to describe rather than name although only description responses were counted in the loose scoring (Peña & Quinn, 1997). This difference in naming conventions also affected standard scores. There was an average 5.6% increase in standard scores when culturally appropriate responses were counted as correct in the raw score calculation. For children who speak a dialect of a language, this difference could either overestimate disability or underestimate skills.

General Discussion

The results of these two experiments support the initial hypothesis that dialect affects naming and also bring to light additional effects of dialect on naming tasks. Results indicated that raw and standard scores in both populations increased when dialectally appropriate responses were counted as correct. Additionally, although the overall developmental trend was as expected there were some noticeable exceptions. Two primary conclusions can be drawn from these results. Based on responses to the EOWPVT-BE, one may infer that aspects of culture, age of acquisition and word frequency which all contribute to the formation of dialects have evident effects on picture naming by pre-schoolers and subsequently the diagnostic usefulness of expressive vocabulary tests. Second, speakers of the same language but of different cultures and dialects may demonstrate differences in naming conventions as well as familiarity with specific words.

For both populations, dialect impacted raw and standard scores. Scores increased when dialectally appropriate responses were counted as correct. This finding indicates that tests scored strictly by the instructions found in the test manual can overestimate impairment or underestimate ability. For the Chilean population, scores increased by an average of 8.2% and for the Mexican-American test group scores increased by an average of 12% on the EOWPVT-BE (Brownell, 2001a) when dialectally appropriate responses were counted as correct. For this standardized measure, these differences indicate that the selected stimuli may not be valid in assessing the intended target words for all Spanish speaking populations. Although the test is standardized for a Spanish speaking population, it is unclear the extent to which speakers of the Chilean dialect were represented. Adhering to a strict standardization procedure may result in misdiagnosis.

Also, for the Chilean participants, the contrived semantic score on the APPS-2 (Hodson & Prezas, 2008) increased by an average of 8.2%. The initial response of the Chilean children often differed from the target supporting the hypothesis that there are differences in semantic choice dependent upon dialects, which affect assessment measures (Yoon, et. al, 2004). Also evident from the results of this study was the potential impact of stimuli selection. The APPS-2 requires the clinician to select their own stimuli for the set of target words. The extent to which stimuli represent a target as known by a student become unreliable. Clinicians must be familiar with the culture of the children being tested in order to select representative stimuli.

The differences between strict and loose scores for the Mexican-American participants can be attributed to the use of a description rather than a label. The use of description on naming tasks was previously identified by Peña (1996). This finding suggests that picture naming underestimates a child's knowledge of a concept. However, the Chilean participants did not demonstrate the use of description rather than labeling. There is not sufficient data to determine the reason for the difference in naming patterns. Further research is needed to determine possible factors such as monolinguals versus bilinguals, a regional characteristic, or SES. However, it is important to note that the use of description on naming task as found by Pena (1996) may not be typical of all Spanish speaking children.

The differences in strict and loose scores may be a result of cultural differences between the test-taker and the normative population possibly due to the influence of culture on vocabulary acquisition and use (Mathuranath, 2007; Fernandez et. al, 2004; Yoon et. al, 2004). For instance, the linguistic material available to a population is dependent on the objects and experiences to which they are exposed and the words connected with them (Mathuranath, 2007). The target stimuli chosen by the researchers used to elicit estufa on the APPS-2 (Hodson & Prezas, 2008) was successful in doing so for Chilean children in only 30% of responses. The picture was selected to elicit that specific response and was not successful in doing so because the word connected to that image in that culture was different from the intended target.

These differences between dialects also may be closely linked with differences in age of acquisition. Given that the items on the EOWPVT-BE are arranged in order of difficulty (Brownell, 2001a), a lack of correlation between response and target can be related to differences in ages of acquisition for the target item. There were items for which children provided a name separate from those identified as the target. Chilean and Mexican-American groups demonstrated increasing item difficulty as the test progressed consistent with age of acquisition. However, certain stimuli were exceptions to this trend. For example, in experiment one on the EOWPVT-BE (Brownell, 2001a) percent correct varied from 24% correct on Item 21 to 100% on Item 22. This discrepancy indicates that individual items may be significantly affected by cultural differences in age of acquisition. Also, an interesting finding in the responses of the Mexican-American children was the small percentage of respondents who were able to provide a category name. Only 30% of respondents successfully provided a category name. It is possible that this is a combined result of differences in naming conventions and age of acquisition effects. This does not support the data found by Perez and Navalon (2005) which suggests comparable age of acquisition norms across populations. These results also illustrate that during assessment, it should be kept in mind that the concept may have been mastered but the words used to identify that concept may vary between populations.

Some items were named by most children in both experiments but a different label was used depending on which dialect the participant spoke. These differences may be related to different frequencies of word usage. For example, a comparison of the responses of the two populations to the stimulus intended to elicit *maiz*. The number of times a response is given for a stimulus can be used to represent the connection between the picture and the linguistic representation (Sanfeliu and Fernandez, 1996). For Chilean and Mexican-American children, *maiz* accounted for 24% and 85% of responses, respectively. This demonstrates that for Chilean children the use of *maiz* to refer to that concept is less frequent than it is for Mexican-American children. This difference suggests that flexibility is needed in what is considered as an acceptable response. The child may have the concept but also have a different word they use to refer to that concept.

Conclusion

In conclusion, it was found that dialect had a significant impact on the naming choices of pre-schoolers. Culture, word frequency, and age of acquisition all may have contributed to the naming characteristics of both populations. Chilean participants used words not identified in the manual with high frequency, did not name pictures in accordance with intended target words and demonstrated the difference in scores dialectally appropriate responses make when counted as correct. Mexican-American participants confirmed previously proposed hypotheses (Peña, 1997) that naming conventions affect scores on naming tasks. For both populations, the differences according to dialect greatly affected raw and standard scores and may be a determining factor in the qualification of a child to receive services.

Appendix

Parent Questionnaire

Dear parents/caregivers:

Please answer the following questions. The information that you provide us is confidential. The name of your child will not appear in the study.

Child's Name:________________________________ Date of Birth:______________________

Age:_________ Gender:______________School:_____________________________________

Demographic Information:

How many adults live in the household? ____ How many children live in the household? ______

How many children in the home are: younger than the child?_____ Older than the child?______

Circle the regional background(s) that best identifies your child's nationality:

Mexican Cuban Puerto Rican Chilean Central American Other South American

Other nationality: ____

Language Preference Information:

Please check which languages your child speaks in the home: Spanish____ English____ Other____

Please list other languages:____

At what age did your child start speaking: Spanish?_____ English?_____ Other_____

When **adults** speak to one another in the home, what is the preferred language?

Spanish________ English________ Both________

When **children** speak to one another in the home, what is the preferred language?

Spanish________ English________ Both________

Which language does your child use more in the home? _____________________________

Speech, Language, and Hearing Information:

Has your child ever had any speech or language difficulties? Yes______ No______

If "Yes," please describe:

____

____

____

Has your child ever had a speech language evaluation? Yes______ No______

If "Yes," did your child receive services? Yes______ No______

Has your child ever had ear infections? Yes______ No______

If "Yes," how many? ____

At what age did your child say his/her first word? _______

What was the first word? __________________________________

Do family members have trouble understanding your child's speech?

Yes____ No____

Do persons outside the family have difficulty understanding your child's speech?

Yes___ No____

Additional Comments:

____

____

____

Cuestionario para los padres

Estimados Padres de Familia:

Favor de contestar las siguientes preguntas. La información que nos proporcione se mantendrá confidencial. El nombre de su hijo(a) no aparecerá en el estudio.

Nombre del niño(a):___________________________ Fecha de nacimiento:__________________

Edad:_________ Sexo:____________ Escuela:____

Información Demográfica:

¿Cuántos adultos viven en la casa? ________ ¿Cuántos niños viven en la casa? ________

¿Cuántos niños en el hogar son: menor que el niño(a)?____ mayor que el niño(a)?____

Rodee el origen regional que mejor identifica mejor la nacionalidad del niño(a):

mexicano cubano puertorriqueño chileano centroamericano otro sudamericano

Otra nacionalidad: ____

Información de Preferencia de Idioma:

Por favor cheque qué idiomas habla su niño(a) en el hogar: español___ inglés ___ Otro___

Liste por favor otros idiomas:____

¿En qué edad empezó su niño(a) a hablar: español?_____ inglés?_______ Otro_____

¿Cuándo adultos hablan con el uno al otro en el hogar, qué es el idioma preferido?

español________ inglés________ ambos idiomas________

¿Cuándo niños hablan con el uno al otro en el hogar, qué es el idioma preferido?

español________ inglés________ ambos idiomas________

¿Cuál idioma utiliza su hijo(a) más en el hogar? __________________________________

Información del Habla, Lenguaje, y Audición:

¿Su hijo(a) ha tenido dificultades con el habla o lenguaje? Sí______ No______

Si la respuesta es afirmativa, describa por favor:________________________________

____

____

____

¿Le han hecho alguna evaluación del habla o lenguaje a su hijo(a)? Sí______ No______

¿Si la respuesta es afirmativa, recibió su hijo(a) servicios? Sí______ No______

¿Su hijo(a) ha tenido infecciones del oído? Sí______ No______

¿ Si la respuesta es afirmativa, cuántas? _____________

¿A qué edad dijo su niño su primera palabra? _______

¿Qué fue la primera palabra? _______________________

¿Tienen los miembros de la familia dificultad de entender el habla de su hijo(a)?

Sí______ No______

¿Tienen las personas fuera de la familia dificultad en entender el habla de su hijo(a)?

Sí______ No______

Comentarios adicionales:

____

____

References

Alvarez, B. & Cuetos, F. (2007). Objective age of acquisition norms for a set of 328 words in Spanish. *Behavior Research Methods*, 39(3), 377-383.

American Speech-Language-Hearing Association. (1983). *Social Dialects* [Position Statement]. Available from www.asha.org/policy.

American Speech-Language-Hearing Association. (1985, June). Clinical management of communicatively handicapped minority language populations. *Asha*, 27(6).

Bormann, T., Kulke, F., & Blanken, G. (2008). The influence of word frequency on semantic word substitutions in aphasic naming. *Aphasiology,* 22(12), 1313-1320.

Brown, E. (2006). Final /s/ reduction in three dialects of Spanish. Paper presented at: New Ways of Analyzing Variation Conference. Colombus, OH. Retrieved from: http://www.ling.ohio-state.edu/NWAV/Abstracts/Papr148.pdf

Brownell, R. (2001a). <u>Expressive One Word Picture Vocabulary Test-Spanish Bilingual Edition</u>. Academic Therapy Publications. Novato, CA.

---. (2001b). <u>Receptive One-Word Picture Vocabulary Test Spanish-Bilingual Edition</u>. Academic Therapy Publications. Novato, CA.

Catling, J. & Johnston, R. (2009). The varying effects of age of acquisition. *The Quarterly Journal of Experimental Psychology,* 62(1), 50-62.

Cuetos, F., Aguado, G., Izura, C., & Ellis, W. (2002). Aphasic naming in Spanish: Predictors and errors. *Brain and Language,* 82, 344-365.

Fernandez, A., Diaz, E., Alonso, M.A. & Beato, M.S. (2004). Free-association norms for the Spanish names of the Snodgrass and Vanderwart pictures. *Behavior Research Methods, Instruments, & Computers*, 36(3), 577-583.

Hodson, B.W. & Prezas, R. (2008). Assessment of Phonological Processes-Spanish 2nd Edition. Los Amigos Research Associates. San Diego, CA.

Hooper, Joan Bybee. (1976). Word frequency in lexical diffusion and the source of morphophonological change. *Current Progress in Historical Linguistics*, 96-105.

Mathuranath, A.G. (2007). Community-based naming agreement, familiarity, image agreement and visual complexity ratings among adult Indians. *Annals of Indian Academy of Neurology*, 10(2), 92-99.

Navarrete, E., Basagni, B., Alario, F., & Costa. A. (2006). Short article: Does word frequency affect lexical selection in speech production? *The Quarterly Journal of Experimental Psychology,* 59(10), 1681-1690.

Peña, E.D. & Quinn, R. (2007). Task familiarity: Effects on the test performance on Puerto Rican and African American children. *Language, Speech and Hearing Services in Schools*, 28, 323-332.

Perez, M.A. & Navalon, C. (2005) Objective-AoA norms for 175 names in Spanish: relationships with other psycholinguistic variables, estimated AoA and data from other languages. *European Journal of Cognitive Psychology,* 17(2), 179-206.

---. (2003) Normas españolas de 290 nuevos dibujos: acuerdo en la denominación, concordancia de la imagen, familiaridad, complejidad visual y variabilidad de la imagen. *Psicológica*, 24, 215-241.

Sanfeliu, M.C. & Fernandez, A. (1996) A set of 254 Snodgrass-Vanderwart pictures standardized for Spanish: Norms for name agreement, image agreement, familiarity, and visual complexity. *Behavior Research, Methods, Instruments, & Computers* , 28(4), 537-555.

Smith, M.E. (1942). The English of Hawaiian children. *American Speech*, 17(1), 16-24.

Snodgrass, J. G., & Vanderwart, M. (1980). A standardized set of 260 pictures: Norms for name agreement, image agreement, familiarity, and visual complexity. *Journal of Experimental Psychology: Human Learning and Memory*, 6, 174-215.

U.S. Census Bureau. (2005-2007). American Community Survey [Data file]. Retrieved from: http://factfinder.census.gov/servlet/DTTable?_bm=y&-geo_id=01000US&-ds_name=ACS_2007_3YR_G00_&-mt_name=ACS_2007_3YR_G2001_B03001

Yoon, C., Feinberg, F., Luo, T. Hedden, T., Gutchess, A.H., Chen, H.M., et al. (2004). A cross-culturally standardized set of pictures for younger and older adults: American and Chinese norms for name agreement, concept agreement, and familiarity. *Behavior Research Methods, Instruments, & Computers,* 36(4), 639-649.

Zimmerman, I.L., Steiner, V.G. & Pond, R.E. (2002). Examiner's Manual for the Preschool Language Scale Fourth Ed. Spanish. Harcourt Assessment, Inc. United States of America.

Christy Cameron

Educational Background

Texas Christian University
Masters of Sciences in Speech-Language Pathology, Bilingual Emphasis; May 2010

- Focuses on assessment and treatment of bilingual individuals and requires 125 hours of clinical experience with bilingual individuals.

University of Arkansas
B.S., Major in Communication Disorders, Minor in Spanish; May 2008

Practicum Experiences

Texas Christian University: Miller Speech and Hearing Clinic
Graduate Student Clinician January 2010-Present Fort Worth, TX

- Administered and interpreted comprehensive assessments for bilingual adults with aphasia
- Developed and provided evidence-based treatment programs targeting word finding, verbal memory and writing in Spanish
- Provided voice therapy for muscle tension dysphonia

John Peter Smith Hospital
Graduate Student Clinician August 2009-December 2009 Fort Worth, TX

- Evaluated and treated monolingual/bilingual adults with dysphagia, aphasia, and other cognitive language impairments
- Performed bedside dysphagia screenings for monolingual/bilingual adults (20)
- Participated in modified barium swallow evaluations (10)

Early Childhood Intervention Tarrant County
Graduate Student Clinician June 2009-August 2009 Tarrant County, TX

- Participated in diagnostics and play based intervention with 0-3 year old bilingual children with speech and language delays
- Conducted interviews and gathered case history from parents of bilingual children
- Provided parent education and instruction regarding stimulation of early language development

Texas Christian University: Miller Speech and Hearing Clinic
Graduate Student Clinician September 2008-May 2009 Fort Worth, TX

- Administered and interpreted comprehensive assessments for monolingual/bilingual children with speech, language, and cognitive disorders
- Worked with area Headstarts to assess and provide speech and language therapy for 3-5 year old bilingual children
- Provided therapy to enhance verbal communication for children and adults with hearing disorders

ABSTRACT

INFLUENCE OF SPANISH DIALECT ON PICTURE AND OBJECT NAMING BY PRE-SCHOOLERS

by Christy N. Cameron, M.S., 2010
Communication Sciences and Disorders
Texas Christian University

Thesis Advisor: Maria L Muñoz, Associate Professor

The purpose of this project was to examine the impact of dialect on the confrontation naming of Chilean and Mexican-American pre-schoolers. Experiment 1examined responses of Chilean dialect speakers to stimuli from the Expressive One Word Picture Vocabulary Test-Bilingual Edition (EOWPVT-BE) and the Assessment of Phonological Patterns Spanish 2nd Edition (APPS-2). Experiment 2 examined responses of Mexican-American dialect speakers to stimuli from the EOWPVT-BE. Both groups demonstrated an increase in raw and standard scores when dialectally appropriate responses were counted as correct. Mean increase in raw score was 8.2% for the Chilean participants. Mean increase in the standard score was 5.6% for the Mexican-American participants. The difference in scores, for some participants, was sufficient to alter the interpretation of test results. Tests which do not recognize a dialect in the standardization sample may overestimate impairment and/or underestimate ability.