Sensitivity of Quantitative Narrative Measures to Change Following English-Only Therapy in Bilingual Children with Primary Language Impairment

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Background Information
Approximately 7% of the English-only school-age population is diagnosed with primary language impairment (PLI). PLI is characterized by significantly reduced language skills in the face of otherwise typical development (Kohnert, Windsor, & Ebert, 2009). Language treatment is indicated for children with PLI to improve educational, social, and vocational outcomes.

An estimated 21% of the United States population over age five speaks a language other than English at home (U.S. Census Bureau, 2010). As with English-only learners, a small subset of bilingual children are diagnosed with PLI. For these children, treatment is often provided only in English.

For treatment to be effective, there must be improvement in a child’s language skills when measured at the end of a treatment period, as compared to performance on these same measures prior to starting treatment. The analysis of spoken narratives has been proposed as a method to document change following treatment in monolingual children with PLI (Klee, 1992). Narratives include all types of discourse in which event structure material, both real and imagined, is shared with interlocutors (Wei and Moyer, 2008). There have been no previous investigations to determine whether treatment gains for bilingual children with PLI are reflected in narrative measures.

The purpose of this study is to determine whether narrative analysis is sensitive to change in both languages of bilingual children with PLI following English-only therapy.

Research Questions
1. Are select quantitative measures of narrative productivity in English sensitive to treatment gains in bilingual children with PLI?
2. Are select quantitative measures of narrative productivity in Spanish sensitive to treatment gains in bilingual children with PLI?

Methods: Participants
Eight normal-hearing Spanish-English bilingual children (four girls, four boys) with PLI ages 6.2 – 9.6. All passed a hearing screening and scored within the normal range on a test of nonverbal intelligence. All scored at least two standard deviations below the mean on normative measures of language in Spanish and English.

Methods: Procedure
Participants looked through a wordless picture book (Frog, Where Are You? by Mercer Mayer, 1996) and then told the story while looking at the pictures. Each narrative was digitally recorded and transcribed using the Systematic Analysis of Language Transcripts (SALT) (Miller & Iglesias, 2010) software.

Narrative Scoring and Analysis
5 measures for each child, in each language

1. Communication Unit (C-Unit): Grammatical unit used to measure productive language. Includes an independent clause and conjoined subordinate clauses.
2. Mean Length of Utterance (MLU): Reflects semantic and grammatical development. In English it is counted in morphemes (smallest unit of meaning); in Spanish it is counted in words.

3. Total Number of Words (NDW): Measure of lexical-semantic productivity
4. Number of Different Words (TDW): Measure of lexical diversity
5. Grammaticality: Measure of grammatical accuracy

Results
There was considerable variation in the results, leading to large ranges and standard deviations for each measure.

Summary & Discussion
Group Level Pre- to Post-Treatment Comparison:
- English CELF: significant change (p < .05)
- Spanish CELF: approached significance (p = .056)
- Narrative Measures: no significant change

The lack of statistically significant change in group performance on quantitative narrative measures coupled with the significant change found on standardized tests may limit the value of these measures in determining treatment effectiveness for bilingual children with PLI. However, results at the individual level indicate that certain measures were sensitive to change for some participants.

References


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