Sentence Diversity in AAE-Speaking Preschoolers: A Comparison of Narrative and Play-Based Language Samples

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Introduction

Fair Language Assessment

- Current assessment methods of language and literacy often fail to account for children's cultural and linguistic diversity (Hamilton, 2020; Latimer-Hearn, 2020).
- Scoring guidelines often penalize children who speak African American English (AAE) for producing grammatical features that differ from Mainstream American English (MAE; Hendriks & Adlof, 2018; Stockman, 2010).
- The concerns of linguistic biases faced when administering standardized tests to young children who speak AAE and the possible outcomes (e.g., misidentification) as a result of the current format of language assessments have not been adequately addressed in current literature.

Sentence Diversity

- Previous research at Marquette concluded that sentence diversity could have the potential to be utilized as a language screening measure given the strong relationships to other language sample measures (Moyle, Casey, George, & Uhlarik, 2020).
- Sentence diversity scoring consists of counting the number of unique subject-verb (SV) combinations within a language sample.
- This approach may be appropriate for AAE-speakers given that utterances do <u>not</u> need to follow MAE grammatical rules to be included (e.g., "The bird fly" and "I got two sisters" would be counted as two unique SV combinations, despite differing from MAE grammatical norms).

Purpose

- Evaluate the potential utility of a sentence diversity measure as a quick, dialect-neutral language screener for low-income AAE-speaking preschoolers.
- Explore the similarities/differences between sentence diversity scores based on narrative or play-based language samples.
- Provide suggestions for benchmarks that would identify typical language development vs. scores that would warrant further assessment.

Research Questions

1. **Can a measure of sentence diversity serve as a dialect-neutral language screener for low-income preschoolers who speak AAE?**
2. **Are narrative and play-based language samples equally useful when measuring sentence diversity, or is one language sampling context more appropriate?**

Participants

Participants included 93 preschoolers who spoke African American English (AAE). See Table 1.

Table 1. Participant characteristics, sentence diversity scores, language assessment results (means, standard deviations)

	Narrative group (n=42)	Play-based group (n=51)
Age (months)	51.0 (5.7)	53.7 (5.2)
Sentence Diversity Score[a]	15.2 (7.4)	12.8 (4.9)
Dialect Density Measure[b]	.07 (.04)	.06 (.04)
Peabody Picture Vocabulary Test-III (PPVT-III)[c]	90.0 (10.3)	91.0 (10.6)
Clinical Evaluation of Language Fundamentals Preschool – 2 (CELF P-2)[c]	87.1 (9.4)	86.6 (10.0)

[a]Raw Score
[b]Number of AAE features/Total number of words
[c]Mean=100, Standard Deviation=15

Methods

- Narrative language samples were collected from 42 children which consisted of a story retell of the wordless picture book, *Frog Where Are You?* (Mayer, 1969), and play-based language samples were collected from another group of 51 similar children.
- Both the narrative and play-based language samples were elicited according to protocols provided on the Systematic Analysis of Language Transcripts (SALT) Software Website (www.saltsoftware.com).
- Samples were transcribed using SALT. Sentence Diversity scores were calculated following the protocol designed by Hadley, McKenna, & Rispoli (2017).
- Investigators also administered two standardized measures of language to each child (see Table 1).

Results (See Table 2)

1. **Sentence diversity as a dialect-neutral language screener:**

- Sentence diversity was not related to dialect density (number of AAE features/total number of words) in either the narrative group (r = 0.193, p = 0.221) or the play-based group (r = 0.163, p = 0.251).
- To test the use of sentence diversity as a language screener, we first identified children with low language scores (standard scores of 85 and below on both the CELF P-2 and PPVT-III) in both groups (8 out of 42 children in the narrative group and 10 out of 51 children in the play-based group). We then found which cut-off score for sentence diversity maximized identification of children with low language skills (i.e., sensitivity) and children with typical language skills (i.e., specificity).

Table 2. Sensitivity and specificity of sentence diversity when used as a language screener

	Narrative group (n=42)	Play-based group (n=51)
Sentence diversity cut-off score	8	13
Sensitivity	5 (of 8) = 63%	8 (of 10) = 80%
Specificity	31 (of 34) = 94%	19 (of 41) = 46%
Total correct classification	36 (of 42) = 86%	27 (of 51) = 53%

2. **Comparing sentence diversity scores in narrative and play-based samples:**

- Within the narrative group, sentence diversity exhibited excellent specificity (i.e., identification of children with typical language skills) and good overall classification of children.
- Specificity in the play-based samples was particularly low, meaning that a large percentage of children with typical language skills would be unnecessarily flagged for further evaluation (i.e., false positives). In addition, overall classification of children was very low.

Discussion

- Sentence diversity showed no relationship to dialect density in either of the language sampling contexts (i.e., narrative or play-based), suggesting that it is a dialect-neutral measure for children who speak AAE.
- Interpreting results of sentence diversity measures for both narrative and play-based samples, sentence diversity based on play-based samples was not shown to be a useful measure. Only 46% of children with typical language skills were accurately identified, and 53% of children were accurately classified overall. However, sentence diversity shows promise as a language screener when based on narrative language samples. In the narrative group, 94% of children with typical language skills were accurately identified, and 86% of children were accurately classified overall.
- The sensitivity level of 63% for sentence diversity as a language screener was lower than acceptable levels, meaning that some children at risk for language impairment would have been missed (i.e., false negatives).
- The research has demonstrated that using sentence diversity by itself as a language screener is not sufficient, but it could be helpful in conjunction with other measures.

References

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