Nonword Repetition in Preschoolers: A Comparison of AAE and MAE Speakers

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INTRODUCTION
The Nonword Repetition Task (NRT; Dollaghan & Campbell, 1998) has shown promise as a culturally nonbiased assessment of language ability. The NRT consists of sixteen carefully designed nonwords (see Table 1 for examples of stimuli). Research has shown that English-speaking school-age children from minority backgrounds perform similarly to White children on the NRT, even though they score significantly worse on knowledge-based language tests (Campbell, Dollaghan, Needleman, & Janosky, 1997; Ellis Weismer et al., 2000; Rodekohr & Haynes, 2001).

Recent research demonstrated that the NRT is appropriate for use with 4 year-old children (Thal, Miller, Carlson, & Vega, 2005). In addition, when used in conjunction with other assessments, the NRT exhibits a high degree of sensitivity and specificity in identifying preschoolers with language impairment (Oetting & Cleveland, 2006; Washington & Craig, 2004).

Oetting and Cleveland (2006) found that the errors exhibited on the NRT were similar between White and African American preschoolers; however, all of the children in their study were identified as speaking a southern dialect of English. The purpose of the current study was to compare performance on the NRT of typically-developing Midwestern preschoolers who spoke African American English (AAE) vs. Mainstream American English (MAE).

Table 1. Nonword Repetition Task: Sample stimuli.

1-syllable: doif
2-syllable: teivak
3-syllable: teivoichaig
4-syllable: naichoitauvub

RESEARCH QUESTIONS
1. Is the NRT is a nonbiased language assessment for at-risk African American preschoolers (i.e., do they score similarly to middle-class White children matched on age and nonverbal cognition?
2. Do preschoolers who speak AAE exhibit different error patterns on the NRT when compared to MAE speakers?

METHOD AND PROCEDURES
Data from two groups of typically developing preschoolers were included in the study. The first group was composed of African American children (n=16) from Head Start programs in Milwaukee, Wisconsin. All of these children produced at least some features of AAE in their speech. The second group included White, middle-class children from Madison, Wisconsin (n=14) who were speakers of MAE. All participants passed a pure-tone hearing screening (ASHA, 1997) and were typically developing in all areas (e.g., cognition, language, speech). The groups were matched on chronological age and nonverbal cognition (see Table 2). The Nonword Repetition task and four subtests from the Test of Language Development-Primary, Third Edition (TOLD-P:3; Newcomer & Hammill, 1997) were administered to each child. Error patterns on the NRT were analyzed and compared across groups to determine whether performance may have been influenced by dialectal differences.

Table 2. Participant Characteristics (means and standard deviations).

<table>
<thead>
<tr>
<th>Variable</th>
<th>African American (n=16)</th>
<th>White (n=14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE in months</td>
<td>60.0 (5.1)</td>
<td>59.3 (6.2)</td>
</tr>
<tr>
<td>NONVERBAL COGNITION*</td>
<td>101.3 (11.0)</td>
<td>103.0 (9.4)</td>
</tr>
<tr>
<td>DIALECT DENSITY MEASURE*</td>
<td>0.19 (.08)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* African American group - Columbia Mental Maturity Scale (Burgemeister, Blum, & Irving Lorge, 1972)
  White group – Leiter International Performance Scale-Revised (Roid & Miller, 1996)
  Standard scores (mean=100, SD=15)
  The rate of AAE features per words.

RESULTS
Question 1: These results contribute to the previous literature suggesting that the NRT is a nonbiased assessment of language ability for African American preschoolers. Specifically, the two groups performed similarly on the NRT, while the
African American group performed significantly worse than the White group on the TOLD-P:3, a traditional knowledge-based language assessment based on Standard American English (see Table 3).

**Question 2**: The mean scores for percent phonemes correct on the NRT were similar for both groups; however, differences in the types of errors were observed. It was predicted that if AAE dialectal patterns did influence performance, these differences would primarily manifest themselves on the NRT as final consonant substitutions (e.g., devoicing), and final consonant omissions. A significant difference between the groups was observed for final consonant substitutions (see Table 3 for results). In the African American group, 36% (16/44) of these substitutions were devoicing errors (e.g., /b/ → /p/, /g/ → /k/). In contrast, only 6% (1/17) of final consonant substitutions were devoicing errors in the group of MAE speakers.

Table 3. Between-group comparisons on the Nonword Repetition Task scores and Test of Language Development-3: Primary (means and standard deviations).

<table>
<thead>
<tr>
<th>Variable</th>
<th>African American (n=16)</th>
<th>White (n=14)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test of Language Development-Primary-Third Edition Sum of Subtest Scaled Scores&lt;sup&gt;a,b&lt;/sup&gt;</td>
<td>37.25 (5.92)</td>
<td>48.64 (5.95)</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td>Nonword Repetition Task Percent Phonemes Correct</td>
<td>0.79 (0.066)</td>
<td>0.83 (0.12)</td>
<td>ns</td>
</tr>
<tr>
<td>Final Consonant Substitutions</td>
<td>2.75 (1.95)</td>
<td>1.21 (1.42)</td>
<td>p=.022</td>
</tr>
<tr>
<td>Final Consonant Omissions</td>
<td>1.31 (2.24)</td>
<td>1.71 (2.20)</td>
<td>ns</td>
</tr>
</tbody>
</table>

<sup>a</sup> The TOLD-P:3 subtests included: Picture Vocabulary, Grammatic Completion, Grammatic Understanding, and Oral Vocabulary.

<sup>b</sup> Sum of four subtest standard scores (for each subtest: mean=10, SD=3)

**DISCUSSION**

At present, educators and researchers do not have adequate assessment tools for evaluating the language abilities of children from diverse backgrounds, or accurately identifying children most at-risk for future language impairments (Washington, 2001). The development and testing of processing-dependent measures, such as the Nonword Repetition Task, is a potential solution to the problem. Innovative assessments such as these may prevent the over-representation of minority children in special education programs. The current study suggests that the NRT has potential as a nonbiased assessment of language ability in African American preschoolers; however, the influence of AAE on patterns of performance needs further investigation.

**REFERENCES**


