Exceeding Expectations: Early Development of Liquids in Young African Americans
Ida J. Stockman, Ph.D., CCC-SLP, Michigan State University
Elaina Swartzlander, B.A., Western Michigan University

Introduction

- The liquid consonants, /l/ and especially /r/, are assumed to be typically late developing for Standard English (SE) speakers. Acquisition ages vary across studies from 4;0 to 8;0 years depending on the performance criterion and/or speech sampling context used (Sander, 1972; Smit, et al., 1990; Dodd, et al. 2003).
- These age norms may not represent African American (AA) children who speak the nonstandard dialect, African American Vernacular English (AAVE).
- Although these children often perform below SE speakers on standardized language measures of vocabulary and grammar, they may produce liquid consonants at earlier than the expected ages. AAVE, like SE, requires production of /r/ and /l/ in the word/syllable initial position. Accurate productions of prevocalic liquid consonants have been observed in the conversational speech of 2;0 (Bland-Stewart, 2003) and 3;0 (Stockman, 2006) year old AA children.
- Pollock & Berni (1997) used elicited words to show that a larger percentage of AA preschoolers produced the consonant /r/ correctly in the 80% range or higher compared to their same age European-American peers.
- Given differences across studies in the method used, we do not know how early to expect accurate liquid consonant production among young AA children.

Research Questions

1. Do 3;0 year old AA children accurately produce the liquid consonants in the word/syllable initial positions during conversational speech?
2. Do differences exist between AA groups in two speech communities that vary in the density of AAVE use?

Method

Participants

120 three-year-old (mean ages ranging from 43 to 44 months) AA Head Start students in Lansing, Michigan (MI, N=69) and Baton Rouge, Louisiana (LA, N=51). They presented no frank evidence of sensory, motor, cognitive, or neurological problems.

Procedures

The data for prevocalic, i.e., word/syllable initial /l/ and /r/ were extracted from archived phonetic transcriptions of the children’s consonant productions in spontaneous speech samples elicited during three adult-child play interactions:
(1) Car activity: simple, repetitive actions with toy racetrack and cars
(2) Book activity: elicited picture naming and description of pictures from two multiethnic books of children eating and playing
(3) Doll activity: open-ended, interactive pretend play with an African American doll family

Phonetic transcription point-to-point reliability for /r/ and /l/ averaged 91% across two observers.

Criterion of Productivity

- This study focused primarily on prevocalic single liquid consonants. The criterion of correct production targeted singleton productions in word/syllable initial position (red, race, lose, look) and syllables (cereal, bathroom, balloon, falling).
- Productivity criterion was met if the consonant was produced correctly 4 times, twice in at least 2 different words.
- Emergence criterion required a consonant to be produced correctly 2 times, once in at least 2 different words.

These criteria for production accuracy exceeded the typically single prevocalic context targeted on norm-referenced standardized articulation tests.

Results

- Just three children had no instance of word/syllable initial /r/ use in any singleton or clustered consonant context observed.
- Every child produced word/syllable initial /l/ in some singleton or clustered consonant context observed.
- Thus 98% or more of the children produced /l/ and /r/ correctly in at least one prevocalic context targeted.
- However, all the children did not meet the most stringent criterion of productivity for correct production of each singleton liquid consonant.
1) Do AA children in MI and LA produce /r/ correctly in word/syllable initial position during conversational speech? The percentages of children who met criterion ranged from 74% (MI) to 88% (LA) for correct /r/ production; 6% met the emergence criterion in each cohort while 6% (LA) and 20% (MI) failed to meet criterion.

Do AA children in MI and LA produce /l/ correctly in word/syllable initial position during conversational speech? The percentages of children who met criterion were 93% (MI) and 92% (LA); 4% and 8%, respectively, met the emergence criterion. No one failed to meet any criterion in LA while just 3% did so in MI.

2) Are there regional/community differences? More children produced /r/ correctly in LA than MI. Conversely, more children produced /l/ correctly in MI than LA. Using independent t tests, the differences between LA and MI were not statistically significant for either /r/ or /l/ production.

Conclusions
- Liquid consonants are not late emerging in AA children. They appear earlier than the 4 to 8 year age range predicted by some existing normative data.
- Most AA children as early as age 3;0 produced liquid /r/ and /l/ consonants correctly in conversational speech, regardless of speech community.
- In general, /l/ was produced correctly by more children than was /r/.

Discussion
There are three possible reasons for the early use of liquid consonants in AAVE speakers:
1. AA and European American children may develop earlier than expected motor skills (Pollock & Berni, 1997).
2. AA children may have less cognitive load in learning complex articulations when their dialect permits simplification patterns in other areas, e.g., the grammar (Stockman, 1996).
3. Conversational speech may provide a more optimistic outcome for observing accurate liquid productions as opposed to the single-word elicitation tasks used often to create articulation norms based on SE speakers.

Research Implications
- More research is needed in general on the acquisition of speech in non-standard English speakers.
- More research is needed on the possible impact of linguistic and cultural differences on speech acquisition norms.
- More research is needed on the production of prevocalic liquid consonants in the conversational speech of SE speakers. The latter research will help to determine whether their prevocalic liquid consonant articulation is later than African American children.

Clinical Implications
Early liquid consonant acquisition by AA speakers has important implications for assessing speech sound development in AA children. Clinicians should not wait until school age to correct immature liquid consonant productions in African American children.

References