

# Identifying Morphological Impairment in Young African American English Speakers- Phase 1

Frances Burns, Ph.D. & Rachel Marks, B.S.

Texas State University-San Marcos

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## ***Learner Objectives***

- Identify linguistic environments that favor the retention or absence of auxiliary/copula forms.
- Identify possible clinical markers for specific language impairment (SLI) in young African American English (AAE) speakers.
- Identify ways in which models of SLI may account for morphological impairment in young AAE speakers.

## *Introduction*

- Children with specific language impairment (SLI) demonstrate limited use of grammatical morphemes related to tense and agreement (Leonard, 1998; Rice, Wexler, & Cleave, 1999).
- 3<sup>rd</sup> person singular –s, copula and auxiliary *is/are/am/was/were*, and past tense –ed

## *Introduction*

- These morpho-syntactic forms distinguish General American English (GAE) speaking children with SLI from same-age, typically developing (TD) peers.
- 3<sup>rd</sup> person singular –s, copula and auxiliary *is/are/am/was/were*, and past tense –ed

## *Introduction*

- Verb finiteness plays a critical role in SLI.
- What does finiteness mean?

## ***Finiteness***

- Finite verbs typically carry the maximum number of morphological markings for tense and agreement permitted in specified languages (Trask, 1992).
- 1a. Jackie dancing (non-finite).
- 1b. Jackie is dancing (finite).
- 1c. Jackie was dancing (finite).
- 1d. They are dancing (finite).

## ***Finiteness***

- 2a. Laura dancing.
- 2b. Laura is dancing.
- 2c. Laura was dancing.
- 3<sup>rd</sup> person singular –s, copula and auxiliary *is/are/am/were*, and past tense –ed



# ***Specific Language Impairment (SLI)***

- Difficulty acquiring finite verb morphology (Rice, Wexler, & Cleave, 1995)
- 3<sup>rd</sup> person singular –s, copula and auxiliary *is/are/am/was/were*, and past tense –ed

## ***SLI and Intervention***

- When young GAE speakers show signs of difficulty with finite verbs, speech-language pathologists have access to many norm-referenced assessment tools that help determine if a child has a language disorder.

## ***SLI and Intervention***

- They also have established production targets once intervention is initiated.
- For example, at least an 80% production rate would be the target for **auxiliary “is”** for GAE speakers.

## ***SLI and Intervention***

- Due to the relatively small body of work on AAE, production rates for AAE have not been firmly established.
- Further study in this area is needed in order to establish evidence-based guidelines for morphological intervention with linguistically diverse populations.

## *Distinguishing Disorder from Difference*

- We know how to distinguish morphological impairment in GAE speakers.
- What constitutes SLI in the area of grammatical morphology in young (AAE) speakers?

## *Distinguishing Disorder from Difference*

- **Variable absence** of these morpho-syntactic forms poses a unique obstacle to distinguishing impairment from typical development in child AAE (Seymour, Green, & Bland-Stewart, 1998).
- **Variable absence of 3<sup>rd</sup> person singular –s, copula and auxiliary *is/are/am/were*, possessive /s/.**

## *Distinguishing Disorder from Difference*

- Can we use these morpho-syntactic forms to help diagnose SLI in young AAE speakers?

## *Optionality in AAE*

- In AAE, past tense –ed, third-person singular –s, and copula/auxiliary *BE* and *DO* forms **do not obligatorily** occur on the surface in all environments.



## *Optionality in AAE*

- An AAE speaker may produce
  - *“Matt is home sick today”*
  - or
  - *“Matt home sick today.”*

# ***OPTIONALITY IN AAE***

Either utterance is correct when produced by typically-developing (TD), child AAE speakers, thus optionality is a fundamental characteristic of AAE.

## *Optionality in AAE*

- Optionality is not well understood (i.e., researchers have not completely determined what governs it).
- However, it can be assumed that percentage of production in TD children is a rough indicator of mastery.

## *Optionality in AAE*

- At least three studies have reported differential rates of production for AAE-SLI and AAE-TD speakers (Burns, Paulk, Seymour, & Pearson, 2000; Oetting & McDonald, 2002; Seymour, Bland-Stewart, & Green, 1998).

## *Models of SLI*

- Two models may offer an explanation for the deficits in grammatical morphology seen in language-impaired AAE speakers.
- Why discuss models of SLI?
- To be viable models of SLI must accommodate all dialects within a language.

## ***Models of SLI***

- **Surface Account** (Leonard, 1989, 1992)  
General limitations in processing capacity.
- Limitation exacerbated when grammatical morphemes appear in sentence positions that lack stress and lengthening.
- *John's instructors are upset with him because he always runs into class at the last minute.*

## ***Models of SLI (Surface Account)***

- *John's instructors are upset with him because he always runs into class at the last minute.*
- Not lack of stress or position in which the morphemes appear that causes a breakdown
- Instead it is the linguistically demanding role that these grammatical morphemes play combined with limited processing capacity that results in the omission of these morphemes (Leonard et al, 1997).

## ***Models of SLI***

- With the **Surface account**, children use grammatical morphology less proficiently than their typically-developing peers.
- In consideration of the surface account, young AAE speakers with SLI may be using grammatical morphemes productively but less proficiently than typically-developing peers.



## *Models of SLI*

- **Extended Optional Infinitive (EOI) Account**  
(Rice & Wexler, 1995)
- Typically-developing children go through an extended period in which finiteness markers may be omitted.
- Past tense *–ed*, third-person singular *-s*, and auxiliary and copula *BE* and *DO*

## ***Extended Optional Infinitive Account***

- The EOI period is prolonged in children with SLI, however, in this protracted phase they may show some evidence of finiteness markers.

## ***Extended Optional Infinitive Account***

- Children lack the knowledge that tense and agreement are obligatory.
- Choose to use non-finite forms.
- Children may omit finite verb forms in spoken sentences, but they comprehend finiteness.

## ***EOI and AAE-SLI***

- The **EOI account** may also explain grammatical errors found in AAE speakers with SLI.
- It is possible that this group goes through an extended phase during which they do not obligatorily mark tense.

## *EOI and AAE-SLI*

- It is possible that this group goes through an extended phase during which they do not obligatorily mark tense.

## *Research Question*

- Is there a significant difference in the production of auxiliary/copula verb forms between children who are developing language typically and children who have specific language impairment (SLI), who speak some and strong variations of AAE?

## *Methods*

- *Participants*
- N=58
- Males (n=34), Females (n=24), ages 5;0 & 6;8
- Strong Variation-Typically Developing (n=32)
- Some Variation-Typically Developing (n=6)
- Strong Variation-SLI (n=14)
- Some Variation-SLI (n=6)
- Participants were part of the normative sample, NIH contract (NO 1-DC8-2104) to develop the *Diagnostic Evaluation of Language Variation (DELV)* (Seymour, Roeper, de Villiers, 2003).

## *Methods*

- Dialect variation (i.e., strong and some) based on results from Diagnostic Evaluation of Language Variation-Screener (DELV-SC)



## *Methods*

- Is there a significant difference in the production of auxiliary/copula verb forms between children who are developing language typically and children who have SLI?
- Compared proportions of present verses absent auxiliary/copula forms (is, am, are, was, were).
- In addition, proportions of preceding phonemes were obtained.
- *“She is dancing.”*

## *Methods*

- The number of overtly produced forms (is, am, are, was, were) was divided by the total number of opportunities. The proportion was calculated for each preceding phoneme.
- Proportions of present and absent auxiliary/copula were calculated using the sample proportion statistic.
- The means of overt (present) productions for auxiliary/copula for dialect groups were calculated.
  - (i.e., TD, SLI, Strong Variation, Some Variation)

## *Methods*

- Significance tests comparing proportions were applied within and between groups at the .05 level.

## Methods

- Proportions were compared within and between the following groups for both auxiliary and copula.
  - TD and SLI
  - Strong Variation TD (SV-TD) and Some Variation TD (SmV-TD)
  - Strong Variation SLI (SV-SLI) and Some Variation SLI (SmV-SLI)
  - Strong Variation TD (SV-TD) and Strong Variation SLI (SV-SLI)
  - Some Variation TD (SmV-TD) and Some Variation SLI (SmV-SLI)

# *Methods*

- Reliability
  - After initial training, 20% of the transcripts were analyzed for correct coding of **obligatory contexts, copula/auxiliary or zero-copula/auxiliary targets, and preceding phoneme shapes.**
  - All discrepancies were resolved by a third judge.

## *Results*

- No significant differences were found between
  - ★ TD and SLI auxiliary/copula for any phoneme
- StrongV-TD and StrongV-SLI auxiliary/copula for any phoneme
- SomeV-TD and SomeV-SLI auxiliary/copula for any consonant

## *Results*

- Production of the auxiliary with a preceding vowel was significantly different
  - StrongV-SLI and SomeV-SLI ( $p=.003$ )
  - SomeV-TD and SomeV-SLI ( $p=.002$ )
- Production of the copula with a preceding vowel was significantly different between
  - SomeV-TD and SomeV-SLI ( $p=.02$ )
  - SomeV-TD and StrongV-TD ( $p=.001$ )

## *Results*

- Recap: No significant differences were found between
  - TD and SLI auxiliary/copula for any phoneme
  - StrongV-TD and StrongV-SLI auxiliary/copula for any phoneme
  - Some-TD and Some-SLI auxiliary/copula for any consonant
- Why not?
  - Variability (large standard deviation) related to preceding phoneme except for /t/.



# Results

- Means and standard deviations for the number of overt productions are as follows. Several phoneme productions too infrequent for statistical analysis.

Auxiliary/ Copula	Dialect/Language Status	n	Mean	Standard Deviation
Auxiliary	TD	18	23.2	74.4
Auxiliary	SLI	18	10.9	32.0
Copula	TD	18	42.5	101.5
Copula	SLI	18	17.2	41.7
Auxiliary	Strong TD	18	17.4	56.2
Auxiliary	Strong SLI	18	9.1	27.6
Copula	Strong TD	18	34	80.5
Copula	Strong SLI	18	12.8	31.2
Auxiliary	Some TD	18	3.4	7.7
Auxiliary	Some SLI	18	2.7	4.5
Copula	Some TD	18	9.5	21.7
Copula	Some SLI	18	5.3	10.6

## *Discussion*

- Recap: No overall differences were found between the larger TD and SLI for overtly marked auxiliary/copula or for any preceding phoneme.
- **Why not?** The dialect variation status was combined for both TD and SLI (e.g. strong/some-TD; strong/some-SLI)
- **Problem?** Fine analysis needed considering strength of dialectical variation was required (i.e. strong/some-TD; strong/some-SLI)

## *Discussion*

- **Problem?** Fine analysis considering strength of dialectical variation was required (i.e. strong/some-TD; strong/some-SLI).
- **Fine Analysis:**
  - Significant difference found between SomeV-TD and SomeV-SLI ( $p=.002$ ) when a **vowel** preceded an **auxiliary**;
  - and SomeV-TD and SomeV-SLI ( $p=.02$ ) when a **vowel** preceded a **copula**.

## *Discussion*

- **More fine Analysis:** For **auxiliary**, a significant difference was found between StrongV-SLI and SomeV-SLI ( $p=.003$ ) when a vowel was the preceding phoneme (74% and 51% respectively).
- However, no difference between StrongV-SLI and SomeV-SLI ( $p=.47$ ) for **copula** forms.
  - Both dialect groups produced copula forms at a high rate (93% and 90% respectively) when /t/ was the preceding phoneme.

\*\*\*\*\*Heavily influenced by /t/.

## *Discussion*

- **More analyses:** For SomeV-TD and StrongV-TD **copula** production with a preceding **vowel** was significantly different ( $p=.001$ ) (91% and 76% respectively)
- **However** the production rate was similar with a preceding **/t/** (94% and 90% respectively).
- Dialect variation plays a role in distinguishing copula production for the TD group when the preceding phoneme is a vowel but not a /t/.

## *Discussion*

- It is expected that the “Some-Variation” group would produce the copula at a higher rate for the vowel.
- Theoretically, this group is closer to general American English (GAE). In GAE, copula production is obligatory in all environments.
- In AAE, copula (and auxiliary) is only obligatory with the first person singular pronoun (I’m) and third person singular neuter pronoun (It’s).
- For the StrongV-TD group, when obligatory context is considered, there are less obligatory opportunities, which lowers the expected rate of production when a vowel is the preceding phoneme.

## *Discussion*

- Again, in AAE, copula (and auxiliary) is only obligatory with the first person singular pronoun (I'm) **and third person singular neuter pronoun (It's).**
- The similar rate of production between the SomeV-TD and StrongV-TD groups for copula when preceded by /t/, is explained because the third person singular neuter pronoun ends with /t/.

## *Discussion*

- Compatible with the Surface and Extended Optional Infinitive Accounts
- Our participants are 5 and 6 years old
- If younger participants, would we see a greater difference?



## *Limitations*

- Relatively small sample
- Need to identify pre-part of speech and pre-word (first person singular *I'm* and third person singular neuter pronoun *it's*).
- Pre- part of speech may help to better distinguish impairment from difference.
- Larger number of “strong” dialect versus “some” dialect

## *Conclusions*

- Dialect variation plays a role in distinguishing TD and SLI groups when the preceding phoneme is considered.
- The preceding phoneme is thought to be influenced by the type of pronoun (i.e. first-person singular “*I’m*” and third-person singular neuter pronoun “*it’s*.”)

## Conclusions

- *In order to be optimally effective, morpho-syntactic treatment involving children with language impairment whose primary dialect is AAE, must be designed to take advantage of the linguistic environments that possibly favor the retention of the target forms, and percentage of production by TD-AAE speakers must be the standard by which quantitative level of mastery is judged.*
- *Tense/agreement is the target versus learning GAE.*
- *This is different from bridging the gap between home language and school language.*

## ***Next Phase***

- Fine analysis for types of errors (what is the pre-part of speech).
- In adult AAE, there are linguistic environments in which auxiliary/copula forms are consistently and overtly represented.
- For example, third person singular neuter pronoun “*it’s*” and first person singular pronoun “*I’m*” (Green, 2002).
- Third-person singular /s/

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