

## Dyslexia in CLD Populations: Why Can't You Be Both Dyslexic AND Poor??

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INS Presentation, 2019

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There is a gap in achievement between African American (and Hispanic) children and their peers that has been longstanding and intractable. The gap in reading achievement has been of particular concern because reading undergirds all academic subjects, including mathematics, science, language arts, and social studies.

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## The National Landscape

- The 25-30 point reading gap between AA and Caucasian American children as measured on the National Assessment of Education Progress (NAEP) has remained virtually unchanged for the last decade.
- The majority (86%) of AA fourth grade students read at or below "basic" levels in the 2016 NAEP sample,
- Only 14% of AA children were considered proficient or advanced readers (NCES, 2016).

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Reading failure in African American (AA) children is a longstanding high impact **public health concern** of enormous societal concern

At this point this failure is less about skills, and abilities and achievement, and more about **access**



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### Consequences are significant...

- For every year that these students are in school the disparity in school achievement reportedly increases by one-tenth of a standard deviation, and this is particularly true of students from low-income families (Burchinal et al., 2011).
- That is, the longer these students are in school the larger the gap seems to grow

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### And Yet...

- AA and other minority students are underrepresented in Special Education:
- Morgan et al (2015): *racial, ethnic, and language minority elementary- and middle-school students are less likely than otherwise similar white, English-speaking children to be identified as having disabilities and, as a result, are disproportionately underrepresented in special education.*

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- Language minority children are less likely than otherwise similar children from English-speaking homes to be identified as having learning disabilities or speech or language impairments (Morgan et al, 2015).
- Minority children's under-representation was evident across the entire elementary and middle school time periods.

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Importantly...

The exclusionary criteria for LD nationally restricts children from diagnosis whose learning problems are "...primarily the result of... environmental, cultural, or economic disadvantage."

(IDEA, 2004)

So currently in the U.S. it is not possible to be both poor and have LD. If you're poor and you can't read it is assumed that you can't read because you are poor.

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### Impact of Cultural Language Differences

- It has been hypothesized that the mismatch between the language system spoken at home and the one used at school increases the cognitive load for students who speak other languages or dialects of English, making the process of learning to read much harder.
- Also, the linguistic characteristics of cultural-dialect among African American children significantly overlap with the characteristics of language impairment (LI) making it difficult to distinguish language difference from language disorder.

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### What is African American English??

- A systematic, rule-governed variation of English
- Used by most (but not all) African Americans in the United States
- Developed as an oral language with no written counterpart
- A low prestige dialect whose legitimacy is still debated in some circles: a community language that is not spoken at school

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### What does it do?

African American English

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### Transforms the main verb or verb phrase

Deletion of the copula/auxiliary	⇒	He _ runnin' fast He _ hungry.
Subject-Verb Agreement	⇒	They <i>was</i> lookin' for the big dog.
Habitual <i>be</i>	⇒	He <i>be</i> gettin' some ice cream
Remote past <i>been</i>	⇒	I <i>been</i> knowin' how to swim.

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## Adds and deletes morphemes

Zero Possessive	⇒	I ride in my brother car
Zero Past Tense	⇒	And then he fix_ the food
Zero Plural	⇒	A girl puttin' some glass_ on the table.
Third person singular -s	⇒	Sometimes she wear_ a baseball cap.

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## Changes pronouns

Undifferentiated pronoun case	⇒	Them pullin' them up the hill."
Regularized reflexive	⇒	He hurt hisself when he fell off his bike
Appositive Pronoun	⇒	<u>My mama she</u> took me to the movies

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## Impacts Phonology

f /θ , v/ð and t/ θ in intervocalic and postvocalic positions	⇒	• <i>Wif/with; bave/bathe; wit/with</i>
d/ð in prevocalic positions	⇒	• <i>Dis/this; dem/them</i>
Consonant cluster reduction	⇒	• <i>Col-/cold</i>

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### Dialect Density

- Dialect occurs in the language of African American students on a continuum from low to high use. It has been measured in one of three ways primarily:
  - 1. Number of utterances with one or more dialect feature divided by the total number of utterances produced by the speaker.
  - 2. Number of dialect features produced by the speaker divided by the total number of utterances produced by the speaker.
  - 3. Number of dialect features produced by the speaker divided by the total number of words produced by the speaker.

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### Description of our Sample

- Nearly evenly split by gender (girls = 437, boys = 394).
- All participants had normal nonverbal intelligence ( $M = 96.94$ ;  $SD = 15.47$ )
- Children with an active IEP were excluded.
- A longitudinal, accelerated cohort design was used to measure language and reading across 1<sup>st</sup> through 5<sup>th</sup> grades.

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### Assessment Battery

Reading	Language	Dialect
WJ-IV	TOLD	DELV-ST
<ul style="list-style-type: none"> <li>• Reading Vocab</li> <li>• Word Attack</li> <li>• Reading Fluency</li> <li>• Passage Comp</li> <li>• Letter-Word ID</li> </ul>	<p>1<sup>st</sup> &amp; 2<sup>nd</sup> grade:</p> <ul style="list-style-type: none"> <li>• Syntactic Understanding</li> <li>• Picture Vocabulary</li> <li>• Morphological Completion</li> </ul> <p>3<sup>rd</sup>, 4<sup>th</sup>, &amp; 5<sup>th</sup> grade:</p> <ul style="list-style-type: none"> <li>• Sentence Combining</li> <li>• Picture Vocabulary</li> <li>• Morphological Comprehension</li> </ul>	<p>Degree of Language Variation</p> <p>calculated for each child based on responses to 15 items with specific phonological and syntactic targets</p>

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### Washington, Branum-Martin, Sun and Lee-James, 2018

- In first grade dialect density was approximately 65% (SD = 26%), followed by a nearly linear decrease in dialect density through fifth grade (about 5% per year), with a slight slowing of the trajectory over time

Table 4. Parameter Estimates based on the Univariate Dual Change Score Model for each Outcome

	Dialect Density		Language		Comprehension	
	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	64.12	1.49	-0.57	0.02	22.89	0.07
Slope	-4.86	0.29	0.47	0.02	-0.23	0.04
F Change	-0.84	0.02	0.05	0.02	-0.23	0.02
F Change, grade 1					-0.25	0.02
Intercept variance	103.77	63.11	0.03	0.04	1.00	0.06
Residual variance	176.96	12.32	0.21	0.02	0.12	0.01

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### High Degree of Variation

- Even with a potential decrease in dialect density for most children in first grade, the range of dialect density in this study was still wide, SD = 22% to 33% per grade
- Children with the highest **dialect density** after the initial decrease in first grade may still be producing densities as high as 70% in fifth grade. **These are the children at greatest risk for reading problems as they go through school**

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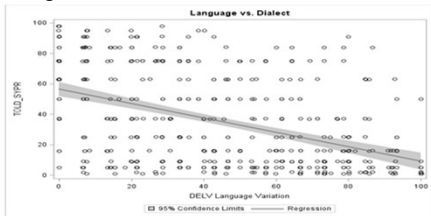
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### Importantly

The density of dialect use predicts performance on general language... and reading assessments:




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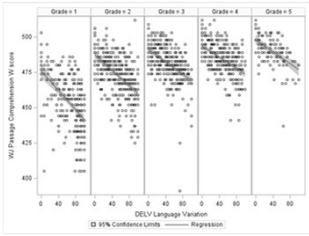
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...and reading




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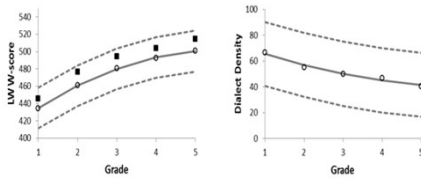
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Relationship between dialectal density and word reading performance




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Overall...

The relationship between Letter-Word Identification and dialect is strong, negative, and consistent across grades

At higher levels of dialect, children consistently show lower levels of syntactic understanding.

At higher levels of dialect use, children tend to show higher levels of language risk.

Low dialect users do not show these patterns of risk

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Bivariate Growth Curve Models (Washington, Branum-Martin, Sun and Lee-James, 2018)

Again, examined Dialect Density and Passage Comprehension

Growth in reading slows down in the face of dialect usage starting in second grade

We found a complex and dynamic relationship between dialect and reading

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Bivariate Growth Curve Models (Washington, Branum-Martin, Sun and Lee-James, 2018)

- Importantly, the relationship between dialect density and reading is **reciprocal**: children who were strong readers were better at decreasing dialect use over time, and children who were higher dialect users had slower reading growth.

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## Gender Differences

Washington, Branum-Martin, James & Sun, 2018

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### Results: Language

- There was no evidence of gender differences in language or cognition in first through fifth grade.
- Growth models indicated that African American boys and girls evidenced similar growth trajectories for language across these grades.

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### Results: Reading

- No gender differences were apparent on any of the five reading skills measured in grades 1 – 3.
- For reading comprehension and fluency, boys and girls performed equally in the early grades (i.e., first through third grade), but differences by gender emerged in fourth and/or fifth grade.
- Statistically significant differences were apparent in grades 4 and 5 for reading fluency and word attack, and in grade 5 only for letter-word identification, passage comprehension and reading vocabulary.
- In all cases girls outperformed boys.

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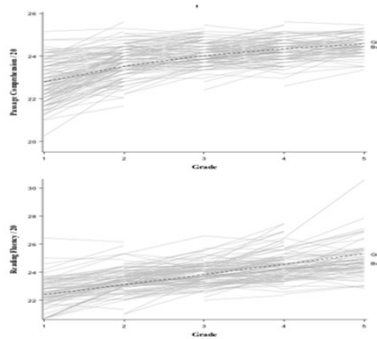
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### But...

- Why are these differences apparent for African American boys but not girls?
- The boys and girls in this investigation were recruited from the same schools, neighborhoods and classrooms, and were exposed to similar teaching and classroom environments. The SES background of students was also similar.
- Boys appear to be having difficulty developing foundational skills, including word recognition and letter-word identification – still having difficulty as late as 5<sup>th</sup> grade
- Reading comprehension and fluency appear to become casualties of these weak, basic skills

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### Home Literacy

- **Meet the Comptons** ... (4 males: grandfather, father, 4<sup>th</sup> grade boy, 1<sup>st</sup> grade boy; low SES; African American)
- Grandfather: non-reader with third grade education
- Father: functionally illiterate with strong oral language skills
- 4<sup>th</sup> grader: Two years below grade level in reading
- 1<sup>st</sup> grader: non-reader who couldn't distinguish letters and numbers

Two family members with reading disabilities; one with good instruction, but still lagging in reading skills; and a patriarch who is undereducated.

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### Our Challenges

- Assessment**  
Can't tell the difference between poverty and disability
- Identification**  
Can't tell the difference between poverty and disability
- Intervention**  
Only Tier 1 classroom instruction unless you have a moderate to severe disability

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### Your Challenge

Lack of opportunity/poverty should not exclude children from an appropriate dx and access to intervention. Instead...



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### Why can't we ask?

In the face of poverty and poor opportunity...

1. What distinguishes struggling readers from those who have dyslexia/reading disabilities?
2. Which assessments are we already using that will be effective for dx and identification?
3. Why can't we challenge our current paradigms to be more inclusive?



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### Couldn't Do This Work Without:

- Lee Branum-Martin
- Nicole Patton Terry
- Mark Seidenberg
- Mi-Young Webb
- Ryan Lee-James
- Congying Sun
- Lakeisha Johnson



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Couldn't Do This Work Without:

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