ABSTRACT

Title of Thesis:	DIFFERENTIAL DIAGNOSIS OF DISORDERED LANGUAGE IN AFRICAN AMERICAN ENGLISH-SPEAKING CHILDREN: A COMPARISON BETWEEN COMPUTERIZED BLACK ENGLISH SENTENCE SCORING AND DEVELOPMENTAL SENTENCE SCORING
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Background: Children who speak African American English (AAE) are disproportionately likely to be diagnosed with language disorders. Traditional language sample analysis (LSA) metrics, such as Developmental Sentence Scoring (DSS), are based on the morphosyntactic structures of Mainstream American English (MAE) and may not accurately reflect the language abilities of AAE-speaking children. This study examined the effectiveness of computerized Black English Sentence Scoring (BESS) system in distinguishing between TD and LI groups in AAE-speaking children compared to use of DSS.

Method: Language samples from 88 children (22 LI, 66 TD) between the ages of 5;0 and 7;02, including 44 AAE-speaking children and 44 MAE-speaking children as the control group, were analyzed using Computerized Language Analysis (CLAN) DSS and BESS options.

Results: Findings suggested BESS is a culturally responsive LSA metric for AAE-speaking children, minimizing linguistic bias seen in DSS. Results revealed neither DSS or BESS are statistically reliable ways to identify LI in children who speak either AAE or MAE.

Discussion: Clinical ramifications and future directions are discussed.

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COMPUTERIZED BLACK ENGLISH SENTENCE SCORING AND
DEVELOPMENTAL SENTENCE SCORING

by

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Dedication

In dedication to Black children who have received disparaging remarks about their accents or use of Black Language. Please know that the way you speak is legit! Do not let others' perception of your linguistic diversity diminish your merit, dull your light, or distort your self-image.

Acknowledgements

Introduction

The dialects of English in the United States are depictive linguistic differences that showcase the country's complex history and cultural diversity. Dialect refers to a form of language specific to a particular region or social group that includes variations in pronunciation, vocabulary, or grammar that distinguish it from other forms of the same language. Mainstream American English (MAE)–also known as Standard American English (SAE) and General American English (GAE)–is often perceived as the neutral and unofficial "standard dialect," commonly used in media, education, and business. African American English (AAE)–also known as Black English (BE), Ebonics, African American Vernacular (AAVE), and African American Language (AAL)–is a dialect that is highly misunderstood and stigmatized. Societal views on AAE are multifaceted, encompassing historical prejudice, systemic racism, perceived illegitimacy, and begrudging acceptance (Morgan, 1994; Lanehart, 2001; Harris & Schroeder, 2013). There have been historical acknowledgments of AAE's validity, such as the 1974 statement by the Conference on College Composition and Communication (Boutte et al., 2021) and the resolution passed by the Oakland Unified School District in California that recognized Ebonics as a legitimate language (Williams, 1997). However, the legitimacy of AAE continues to be questioned, and many people are unaware of its linguistic features, including speech-language pathologists (SLPs).

AAE is characterized by unique phonological, syntactic, and morphological features that differentiate it from MAE. The development of AAE is often linked to the linguistic environment created by the conditions of the Transatlantic Slave Trade. Enslaved Africans, who spoke a variety of West African languages, endured communication barriers with each other and with the English-speaking enslavers. Through the strife of systematic separation and the amalgamation of languages, a new language emerged. The formation of AAE is a subject of scholarly debate (Bloomquist et al., 2015), with several hypotheses proposed. The two primary hypotheses are the English Origins Hypothesis (EOH)—also known as the Anglicist Hypothesis—and the Creole Origins Hypothesis (COH). The EOH posits that AAE developed largely from English dialects spoken by European Americans with minimal influence from African languages. Key AAE features that support EOH include the use of certain grammatical structures, such as invariant "be" (e.g., "He be singing.") that are parallel to features in some British dialects. In contrast, COH posits that AAE originated from a creole language that emerged from the contact between English and various West African languages and emphasizes the role of the unique sociolinguistic conditions of slavery. A creole language is a stable, fully developed natural language that forms when speakers of mutually unintelligible languages interact due to events, such as trade, colonization, or slavery. John E. Rickford identified six types of evidence relevant to the COH (Bloomquist et al., 2015): (1) sociohistorical conditions; (2) historical attestations; (3) diaspora recordings; (4) creole similarities between AAE and Caribbean creoles, Gullah, Hawaiian, etc.; (5) similarities between AAE and West African languages (e.g., Hausa, Mandinka, and Wolof); and (6) dialectal differences between AAE and British/White American dialects.

Segregation in the United States profoundly influenced the development of AAE. The enforced separation of racial groups, particularly during the Jim Crow era, allowed the development of a unique linguistic identity, shaped by cultural, social, and historical factors. The Great Migration—a massive migration of approximately six million African Americans from the rural South to Northern, Midwestern, and Western states between 1916 and 1970—facilitated the evolution of AAE (Dyson et al., 2020). The migration resulted in densely populated neighborhoods where African Americans lived in close proximity to one another, fostering a unique linguistic environment. Prior to the Great Migration, AAE was relatively uniform, and the intercultural communication between migrants and African Americans from Northern, Midwestern, and Western states led to the emergence of regional dialects. The desire for social acceptance and economic advancement led to shifts in AAE. For example, African Americans seeking upward mobility often faced the challenge of navigating between AAE and MAE, contributing to the code-switching phenomenon where AAE speakers incorporated elements of MAE while retaining distinctive features of their linguistic heritage. Although racial integration increased due to the Great Migration and the Civil Rights Act of 1964, racial and linguistic discrimination remained pervasive.

The U.S. legal system has addressed linguistic discrimination through several landmark cases. In 1979, the Ann Arbor Black English Case, formally known as *Martin Luther King Jr. Elementary School Children v. Ann Arbor School District Board*, addressed the critical issues of language, identity, and educational equity (Smitherman & Baugh, 2002). The case was initiated in 1977 on behalf of 11 Black students who were misidentified as having learning disabilities due to their use of Black English. Expert witnesses, such as sociolinguists Dr. Geneva Smitherman and Dr. William Labov, provided testimony on the linguistic legitimacy of Black

English. The judge ruled that Ann Arbor Public Schools had violated federal law by not taking appropriate action to overcome the language barriers faced by Black English-speaking students. Another significant case is *Larry P. v. Riles*. The National Association for the Advancement of Colored People (NAACP) filed a suit in 1971 on behalf of the parents of six Black elementary students in San Francisco who were placed in special education classes after being diagnosed with an intellectual disability based on IQ tests (Woods Jr. & Graves Jr., 2021). The plaintiffs argued that the tests were culturally biased and resulted in a disproportionate number of Black students being placed in these classes. In 1979, the court found in favor of the plaintiffs, ruling that the use of standardized IQ tests for placing Black students into special education violated federal laws including the Equal Protection Clause of the Fourteenth Amendment. These two cases highlight the need for educational systems to accommodate cultural and linguistic diversity, and research on AAE emphasizes the need.

There has been a growing recognition of the linguistic legitimacy of AAE (Baker-Bell, 2020; Privette & Saechao, 2025) in contemporary society. AAE has permeated mainstream culture, particularly through music, literature, and social media. Despite its cultural significance, AAE is frequently stigmatized in broader American society. Many speakers face discrimination and negative stereotypes and are often perceived as less educated or less articulate than their MAE-speaking counterparts. There is the misconception that AAE is merely "slang" or a "broken" form of English rather than a legitimate dialect with its own grammatical rules and structures. The field of speech-language pathology is at a critical juncture where the need for cultural competence and linguistic diversity is more pronounced than ever.

Research has shown a significant educational gap in the training of SLP students concerning culturally and linguistically diverse (CLD) populations (Franca et al., 2016). Prior experiences, formal education, and social contexts shape the attitudes and beliefs of SLP students regarding linguistic diversity. Hendricks et al. (2021) surveyed 73 students in undergraduate and graduate speech-language pathology programs from 46 randomly selected universities across the United States to assess their explicit and implicit perceptions of AAE. Participants generally expressed positive opinions about the validity of AAE, with 84.9% agreeing that no dialect is a disorder. However, when rating speakers, those using AAE were rated lower in socio-intellectual, aesthetic, and dynamism (i.e., energetic quality) categories than those using MAE. The results indicated a disconnect between explicit beliefs and implicit biases, suggesting that while students recognized the validity of AAE, they still held negative perceptions of speakers using it.

The speech-language pathology profession has been predominantly shaped by a White, English-speaking, middle-class perspective, leading to biases against nonstandard dialects (Easton & Verdon, 2021). The American Speech-Language-Hearing Association's (ASHA; 2025) reported the following racial profiles of ASHA members and nonmembers certified in speech-language pathology: 90.3% White, 3.8% Black or African American, 3.3% Asian, 0.3% American Indian or Alaska Native, and 0.1% Native Hawaiian or Other Pacific Islander. SLPs are providing services to an increasing number of CLD clients who may have language differences. Despite ASHA's declaration that "each [dialect] represents a legitimate rule-governed language… [therefore] no dialectal variety of American English is a disorder or a pathological form of speech or language" (ASHA, 2003). Previous research indicates that SLPs

often feel inadequately prepared to address the unique needs of children from minority

backgrounds (Guiberson & Atkins, 2012; Quach & Tsai, 2017; Parveen & Santhanam, 2021).

Levels of preparedness and self-awareness can significantly influence clinical decision-making

and assessment outcomes. Understanding the interplay between CLD competence and

professional practice is important (Clark et al., 2021). It can determine whether an SLP interprets

the assessment results of a Black child from a deficit or difference perspective.

Educational Disparities for Students who Speak AAE

Educational disparities in the United States persist as a significant barrier to equity and

social justice, particularly for marginalized students, such as those who speak AAE (Condron,

2009; Diamond & Huguley, 2011; Bushnell, 2021). These disparities manifest in various forms,

including unequal access to quality education resources, underrepresentation in advanced

courses, and disproportionate disciplinary actions. Children who speak AAE may enter school

with a language system that does not align with the language they encounter in classroom

instruction. When the language of instruction does not reflect their home language, students may

struggle to make connections between spoken and written forms of MAE. Many educators lack

the linguistic training to recognize that language differences can affect the academic performance

of students who speak non mainstream varieties of English. The negative perceptions

surrounding AAE can have profound implications for students who speak AAE in educational

settings (Beneke & Cheatham, 2015). Educators may view AAE as "incorrect" or "inferior,"

leading to biases that affect how students are treated and assessed (Diehm & Hendricks, 2021).

Teachers' biases, whether conscious or unconscious, can play a significant role in the

identification of students for special education services. This linguistic discrimination can result

in lower expectations from teachers, over or under referral of speech/language assessments, and a lack of support for academic progress.

There is an unequal representation of minority students in special education programs compared to their peers. Disproportionality can manifest as either over-identification, where minority students are disproportionately placed in special education, or under-identification, where they are less likely to receive necessary services despite needing them. Early research highlighted the overrepresentation of minority children, particularly Black and Hispanic children, in special education (Dunn, 1968; Agbenyega & Jiggetts, 1999; Ferri & Connor, 2005). Recent research has produced paradoxical findings regarding the identification rates of minority students in special education (Morgan et al., 2015; Cruz & Firestone, 2022). The findings from a study conducted by Robinson and Norton (2019) revealed that on average, 75% of states underrepresented 62% and overrepresented 14% of Black students in the Speech or Language Impairment (S/LI) category each year. When controlling for demographic factors, such as socioeconomic status (SES), Black and Hispanic children were less likely to be identified for special education compared to White children. Children from low SES backgrounds are more likely to experience conditions that can lead to special education referrals, such as limited access to early childhood education and healthcare (Shifrer et al., 2011). Systemic biases in language assessment practices can lead to misdiagnosis of children who speak AAE, potentially contributing to both the underrepresentation and overrepresentation of Black children receiving speech and language services in school. Understanding how social, economic, and linguistic factors influence language development and usage is crucial for educators and SLPs to perceive varieties of English as language differences and not language deficits.

Deficit Theory Versus Difference Theory

The assessment of Nonmainstream American English (NMAE), particularly AAE, has been influenced by two contrasting theoretical frameworks: deficit theory and difference theory. These theories not only shape the perception of language use among speakers of AAE but also impact clinical practices. The deficit theory posits that language variations indicate deficiency or discord in communication skills. Consequently, this theory has historically mischaracterized AAE as inferior or broken English (Pearson et al., 2013). For instance, SLPs who adhere to the deficit theory may overlook the grammatical rules of AAE, leading to an inappropriate DLD diagnosis.

In contrast, the difference theory asserts that variations in language are legitimate linguistic differences. The fundamental difference between deficit theory and difference theory lies in their underlying assumptions about language variation. While the shift from a deficit to a difference perspective has allowed for a better understanding of AAE as a legitimate linguistic system (Stockman, 2010), distinguishing between normal dialect variation and actual language disorders remains challenging for many SLPs. Research has shown that shared (noncontrastive) features between AAE and MAE may provide more reliable diagnostic indicators for identifying DLD than features that are not shared (contrastive) (Seymour & Seymour, 1997; Bland-Stewart, 2005; Pearson et al., 2014).

Linguistic Biases in Norm-Referenced Language Assessments and Modifications

Norm-referenced assessments are standardized tests that compare a child's performance to a normative sample. While these assessments are widely used, they often fail to account for linguistic diversity (de Villiers et al., 2017) because the normative samples mainly consist of first-dialect speakers of MAE (Seymour, 2004). Research has shown that using AAE features

can negatively impact scores on standardized assessments (Craig et al., 2004; Seymour, 2004; Marencin et al., 2024). AAE speakers may be penalized for using dialect-specific features not recognized in MAE, leading to the underestimation of their language skills in norm-referenced language assessments. For instance, sentences with the AAE contrastive feature zero marking (e.g., "She going to the park." instead of "She is going to the park.") would be interpreted as errors in norm-referenced assessments. To mitigate linguistic bias, some norm-referenced assessments include scoring modifications in the manual for nonmainstream-dialect speakers.

Scoring modifications refer to adjustments made to standardized assessments' scoring criteria or procedures to account for dialectal differences. These modifications aim to provide a more accurate representation of a Black child's language skills by considering cultural background and language differences when marking test responses as correct or incorrect. Other assessment modifications have been proposed and implemented, including dynamic assessments, and supplemental assessments incorporating additional measures such as language sampling and teacher/family interviews. While modified scoring can reduce false positives of AAE speakers being diagnosed with language disorders, it may increase false negatives, highlighting the complexity of accurately diagnosing language disorders in children who speak nonmainstream dialects (Hendricks & Adlof, 2017; Marencin et al., 2024). As an alternative to norm-referenced assessments with scoring modifications, dialectal-neutral assessments are ideal, although few have been created.

Dialect-Neutral Language Assessments

Dialect-neutral assessments are designed to accurately evaluate language skills without bias toward any specific dialect. Pearson (2004) discussed three abstract theoretical linguistic frameworks that contributed to the conceptual basis for dialectal-neutral assessments for AAE: (1) universal grammar and its acquisition; (2) the unique syntactic, semantic, and phonological

structures of AAE; and (3) cross-linguistic studies of specific language impairment. These frameworks aim to create assessments that can distinguish between typical language development and language disorders. Dialect-neutral indices of narrative language, such as anaphoric references (i.e., words, such as pronouns, that refer to something previously mentioned), use of age-appropriate temporal expressions, and mental state descriptions, can effectively differentiate between typically developing (TD) children and those with DLD (Burns et al., 2012). Developing valid and reliable assessments for children from minority backgrounds requires extensive research and testing for the normative data to reflect the linguistic diversity of the population being assessed. Some attempts have been made to design instruments specifically intended to be free of dialectal bias.

The Dialect Sensitive Language Test (DSLT) served as the unpublished pilot edition of the Diagnostic Evaluation of Language Variation (DELV; 2003) (see Pearson et al., 2014 for discussion). The DSLT and DELV were developed by Harry Seymour, Thomas Roeper, and Jill de Villiers to assess complex aspects of language, including syntax, semantics, and pragmatics while accounting for the linguistic features of AAE. In 2018, the Diagnostic Evaluation of Language Variation-Norm Referenced (DELV-NR) was published and has been shown to be an appropriate, psychometrically sound language assessment for English-speaking children and to effectively differentiate between TD children and those with DLD (Stockman, 2010; Pearson, 2018; Hendricks & Adlof, 2020). However, the DELV has been met with mixed reception, often being perceived as a test specifically for Black children (de Villiers et al., 2017). Challenges remain in implementing dialect-neutral assessments, including the need for widespread training among SLPs to recognize and understand dialectal variations. Limited–or lack of– cultural and

linguistic competence may lead to linguistic bias and disregard of dialectal-neutral indices when identifying DLD in children who speak nonmainstream dialects.

Language Sample Analysis

Language sample analysis (LSA) is a critical tool used to assess and understand a child's spontaneous, expressive language ability. This method involves collecting and transcribing utterances to evaluate various linguistic elements such as syntax, morphology, and phonology. ASHA has recognized LSA as a best practice within comprehensive assessments, emphasizing its significance in evaluating functional communication abilities (Pavelko et al., 2016). Unlike norm-referenced assessments, LSA provides a naturalistic and representative picture of a child's language use. The importance of LSA lies in its ability to reveal the strengths and weaknesses in a child's language skills, thereby informing diagnosis and intervention strategies. Traditional LSA metrics are often based on MAE norms, which can disadvantage children who speak nonmainstream varieties of English like AAE. For example, Mean Length of Utterance (MLU) is a well-known LSA metric used to identify LI or language delays and is often used to determine if a child is eligible for speech services in school. Due to the morphological differences of AAE (e.g., omission of the plural morpheme -s), MLU often fails to account for these dialectal variations, leading to potential misdiagnoses. Evaluating the linguistic complexity of a child's sentence structures can provide more information about the child's language skills.

Developmental Sentence Scoring (DSS) was designed to assess morphosyntactic development in children's spontaneous speech gathered from language samples (Lee & Canter, 1971). DSS is an appropriate LSA metric for assessing the language of children between the ages of 3;0 and 6;11. Language samples from children must consist of at least 50 complete, different, consecutive, intelligible utterances that can be obtained during a conversation with an adult using

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engaging materials such as toys or pictures to elicit speech. Each sentence is scored based on eight grammatical features: (1) indefinite pronouns and/or noun modifiers, (2) personal pronouns, (3) main verbs, (4) secondary verbs, (5) negative markers, (6) conjunctions, (7) interrogative reversals, and (8) wh-questions. Sentences are awarded points ranging from 0 to 8 based on the level of complexity of each given utterance. The total score is calculated by adding the scores of all sentences; if a sentence is grammatically and syntactically correct, an additional point is added to the total score. The mean score, the developmental sentence score, is obtained by dividing the total score by the number of sentences. Although DSS detects morphosyntactic differences between TD children and children with DLD, its detection is limited due to the specificity of the measure being based on MAE norms, which may not accurately reflect the language abilities of AAE speakers, leading to linguistic bias and the misdiagnosis of AAE speakers (Oetting et al., 1999; Francois et al., 2023).

Black English Sentence Scoring (BESS) was developed as an adaption of DSS that incorporates analyses of AAE grammatical features (Nelson & Hyter, 1990). It is also an appropriate LSA metric for children between the ages of 3;0 and 6;11. BESS uses the same eight categories as DSS and the same calculation methods for the total and mean scores. However, the two LSA metrics differ in the criteria for awarding sentence points. DSS considers a complete sentence to consist of a noun and a verb occurring in a subject-verb relationship while BESS will also consider a sentence as complete if it has zero marking (Hyter, 1984). For instance, the sentence, "She my favorite singer." is considered an incomplete sentence in DDS, which will be penalized and marked as an error. In BESS, the given sentence would be considered a complete sentence constructed with a zero copula (i.e., omission of "is") and would not be penalized. Table 1 shows examples of complete sentences for both LSA metrics in each grammatical

category. Research on the reliability and validity of BESS has demonstrated its effectiveness as a language measure. Hyter (1984) analyzed 17 AAE-speaking children between the ages of 3;8 and 6;11 using traditional (i.e., handwritten) BESS, and her findings revealed that BESS is a valid measure for identifying Black children as being language disordered and has a high-level of inter-rater reliability. Using BESS as a LSA is not without its limitations. SLPs must be knowledgeable and sensitive to the cultural and linguistic backgrounds of the children they assess to avoid biases and ensure fair evaluations when using BESS. Computer-assisted language sample analysis presents an objective approach to evaluating language, potentially mitigating biases.

Table 1

DSS and BESS Grammatical Categories

Grammatical Categories	AAE	MAE
Indefinite pronouns	I have these many cookies.	I have this many cookies.
Personal pronouns	Me and my brother went shopping.	My brother and I went shopping.
Primary verbs	That girl my cousin.	That girl is my cousin.
Secondary verbs	I'ma have to get dressed.	I have to get dressed.
Negatives	Won't nobody help her?	Will anybody help her?
Conjunctions	She will play or either she will rest.	She will either play or rest.
Interrogative reversals	What that is?	What is that?
Wh- questions	How you do that?	How did you do that?

Computer-assisted language sample analysis refers to the use of specialized software tools designed to analyze speech and language samples systematically. The analysis can yield quantitative data, such as the frequency of specific grammatical structures, and qualitative

insights into language use in naturalistic contexts (e.g., casual conversations, playing with toys, and reading books). One of the most well-known computerized language analysis software programs is CLAN (Computerized Language ANalysis). It can automatically annotate language sample transcripts for grammatical information (e.g., part of speech and morphosyntax), significantly reducing the time required for analysis compared to manual methods. Analyses are completed through the KidEval utility, which combines multiple traditional language sample analyses (e.g., MLU, DSS, and Index of Productive Syntax [IPSyn]) into a single report, providing a comprehensive overview of a child's language abilities (Bernstein Ratner & MacWhinney, 2023). Although the intent of computerized language analysis is to reduce the likelihood of human error and bias, most quantitative language measures are based on MAE features, subtly contributing to linguistic biases and possible misdiagnosis of children who speak nonmainstream varieties of English.

Non-Contrastive and Contrastive Model

Understanding the nuances between AAE and MAE is crucial in distinguishing between non-contrastive and contrastive features. In AAE, contrastive features are across morphology syntax, phonology, and pragmatics (see Appendices A-D). For example, non-contrastive features of AAE and MAE that can be used to distinguish typical from disordered performance include age-appropriate phonemic inventory, use of past-tense copula forms (which are not optionally deletable), shared common vocabulary, and non-word repetition skills (Jackson & Pearson, 2004). These consistent features represent acceptive norms within the respective dialects (Seymour et al., 1998). AAE linguistic variation includes zero marking (i.e., omission of grammatical elements such as suffixes or verbs), invariant/habitual be, omission of plural suffix, final consonant deletion, cluster simplification, and phonological substitution. It is important to

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be aware of contrastive features to understand linguistic norms–especially when there is a

mismatch between the SLP's and the client's dialects–to avoid overdiagnosis or underdiagnosis

of language disorders (McGregor et al., 1997). The lack of normative data on AAE development

further hinders SLPs' understanding of the nuances between AAE and MAE; thus, there is an

overreliance on benchmarks established for MAE such as norm-referenced assessments

(Seymour, 2004).

Current Study

SLPs encounter several challenges in achieving cultural and linguistic competence.

Research indicates insufficient training in speech-language pathology programs for working with

CLD clients (Hammond et al., 2009). Additionally, norm-referenced language assessments have

shown to be linguistically biased for children from language minority communities, including

bilinguals (Barragan et al., 2018; Castilla-Earls et al., 2020) and AAE speakers (Lee-James et al.,

2022). The inability of SLPs and norm-referenced language assessments to differentiate dialectal

differences from language disorders has contributed to the misdiagnosis of AAE-speaking

children having DLD and the overrepresentation of AAE-speaking children receiving speech

services (Morgan et al., 2015). Endeavors to reduce biases include dialect-neutral assessments

and scoring modifications for norm-referenced language assessments. However, biases may

remain due to the interpretation of results by SLPs who are inexperienced with Black children.

LSA allows for a fairer evaluation of language skills (Ramos et al., 2022). One potential

challenge is the need for SLPs to be adequately trained in identifying AAE linguistic features to

ensure accurate LSA, which can be costly or infeasible. A practical solution is to use the free

computer-assisted LSA software CLAN, which includes the computerized BESS in its KidEval

Utility (Bernstein Ratner & MacWhinney, 2023). When analyzing language samples from

children, CLAN's English automatic morphological tagger has an accuracy rate ranging between 76% and 94%, depending on the child's morphosyntactic development (Overton et al., 2021). However, these percentages are based on non-contrastive features of AAE and MAE and not contrastive features of AAE. Oetting and McDonald (2001) emphasized the importance of including both non-contrastive and contrastive features of dialects to improve diagnostic accuracy, which BESS includes. Since its inclusion in CLAN in early 2023, there has yet to be a significant sample used to examine the ability of the computerized BESS to distinguish TD and DLD groups in AAE-speaking children.

In this study, we examined how diagnostic status (typical or language impaired) and variety of English impact differences in performance scores across three LSA metrics (i.e., BESS, DSS, and MLU-W). In addition, we assessed the diagnostic accuracy of and correlations among the LSA metrics.

Research Questions and Hypotheses

1. Can the computerized BESS differentiate between TD and LI groups of AAE-speaking children? We hypothesized BESS will be more effective in differentiating the LI group of AAE-speaking children from the TD group than DSS.

2. Is the computerized BESS fairer in assessing the language differences of AAE speakers when compared to the computerized DSS while maintaining discrimination ability between varieties of English? We hypothesized that AAE-speaking children will receive higher scores than MAE-speaking children when using BESS and AAE-speaking children will receive lower scores than MAE-speaking children when using DSS.

Methods

<u>*Participants*</u>

A total of 88 children (22 LI, 66 TD) ranging between the ages of 5;0 and 7;02 were included in the study. Language samples were retrieved from corpora in the CHILDES database. AAE-speaking children were matched with MAE-speaking children by age ($\pm$ 6 months), gender, and eligible utterances for DSS and BESS analysis. Language samples (a total of 13,608 utterances) were collected using a multifaceted protocol that included spontaneous speech from children through play, clinician-child conversation, or prompts for narratives to elicit the following discourse types: expository language, picture-based narrative, open-ended narrative, and expressions for "habitual" activities (e.g., asking a child, "What does this person do?" when looking at a series of occupation pictures). The language samples were transcribed and transferred into CHAT files in CLAN for analysis. MLU, DSS, and BESS were computed automatically using the Kideval utility available in CLAN. Participants' characteristics are displayed in Table 2.

Table 2

Participants' Characteristics

	AAE (n =44)	MAE (n =44)
Age (Year;Month[s])		
5;0-5;05	13	3
5;06-5;11	11	24
6;0-6;05	10	8
6;6-6;11	10	6
7;0-7;06	-	3
Gender		
Female	24	24
Male	20	20
Diagnostic Group		
LI	11	11
TD	33	33

Forty-four AAE-speaking children from the DELV corpus in the CHILDES AAE directory were selected for this analysis. The corpus was developed initially to reanalyze the diagnostic accuracy, sensitivity, and specificity of the DELV-NR. It consists of 78 language samples from AAE-speaking African American children: 38 5-year-olds and 40 6-year-olds. To be a participant, children must have taken the DELV prior to the study. In regard to dialect variation, participants were categorized into three groups: (a) no dialect difference from MAE, (b) some dialect difference from MAE, and (c) strong dialect difference from MAE. The children selected for this analysis had either some or strong dialect difference from MAE. SES for the participants were not available.

Forty-four MAE-speaking children from the following corpora in the CHILDES North American English collection were selected for analysis: Bliss (2 TD), Ellis Weismer (8 LI, 14 TD), English-ECSC (10 TD), Gilliam (3 LI, 4 TD), HSLLD (2 TD), and Nicolopoulou (1 TD). The Bliss corpus (Bliss, 1988) consists of seven language samples from TD children who were used as a control group for children with specific language impairment of the same chronological age. The Ellis Weismer corpus (Weismer et al., 2013) consists of 112 language samples from children who participated in a five-year longitudinal project examining the link between late onset of language development and language impairment. The English-ECSC corpus (Kallay & Redford, 2020) consists of 367 language samples from children who participated in a three-year longitudinal project. The Gilliam corpus (Gilliam & Pearson, 2004) consists of 671 language samples from children who were part of the normative sample for the original norming of the Test of Narrative Language. The HSLLD corpus (Dickinson & Tabors, 2001) consists of 83 language samples collected from children who participated in a three-year longitudinal project. The Nicolopoulou corpus (Nicolopoulou et al., 2021) consists of 49 language samples from

children who participated in a three-year project that investigated children's narrative told in a natural context (e.g., school). SES were only available for the Nicolopoulou corpus, and the participant included in the study was labeled as middle class.

Analysis Procedures

CLAN was used to obtain MLU, BESS, and DSS for each child. It only computed eligible utterances produced by the child (i.e., complete, intelligible, and non-echolalic sentences containing a noun/pronoun and verb). Therefore, utterances that were ineligible were excluded. To address the first research question, binomial logistic regression analyses were conducted. The participants were previously classified as either TD or LI in their respective corpus directory. The actual number of TD and LI participants and the predicted classification of participants into the diagnostic groups in the binomial logistic regression models were compared to assess the effectiveness of BESS and DSS as differential diagnostic tools. The Wald test was used to assess the significance of dialect on BESS and DSS scores. To address the second research question, a series of two-level analyses of variance (ANOVA) were used to assess factors on sentence scores of AAE-speaking children and MAE-speaking children: (1) influence of diagnostic status and dialect on BESS scores and (2) influence of diagnostic status and dialect on DSS scores. Assessing the main effects of the independent variables (i.e., dialect and diagnostic group) and their interaction effect on sentence scores provided information on significant differences in BESS and DSS scores across the levels of each independent variable. Since MLU-W is an unbiased LSA metric for children who speak nonmainstream dialects (Voniati, 2015), linear regression analyses were additionally conducted to assess the association between MLU-W and BESS and MLU-W and DSS for both dialect groups. Statistical data analyses were performed using the 2024 Number Cruncher Statistical Systems (NCSS) computer software.

Results

Differentiation Between TD Children and LI Children

A series of binomial logistic regressions was performed to predict the likelihood of AAE-speaking children and MAE-speaking children being classified as either TD or LI (binary outcome) based on the DSS and BESS scores (predictor variables). It was hypothesized that BESS will be more effective in differentiating the LI group of AAE-speaking children from the TD group than DSS. The BESS and DSS logistic models had a deviance of 49.48 for AAE-speaking and MAE-speaking children, with df (degrees of freedom) = 1, $p > 0.05$, indicating a poor fit for the predicted values when matched with observed data. The Wald test was used to evaluate the statistical significance of the predictor variables in the logistic regression models (see Table 3). Results revealed that DSS and BESS are not statistically significant in distinguishing TD and LI children in either the AAE-speaking children or MAE-speaking children groups.

Table 3

Logistic Regression Coefficient Significant Tests

Independent Variable Exp(b(i))	Dialect	Regression Coefficient b(i)	Standard Error Sb(i)	Wald Test of H0: β(i) = 0		Odds Ratio
				Z-Statistic	P-Value	
DSS	AAE	0.17	0.17	1.02	0.31	1.18
DSS	MAE	-0.07	0.17	-0.41	0.68	0.93
BESS	AAE	0.20	0.17	1.19	0.23	1.22
BESS	MAE	-0.07	0.17	-0.42	0.67	0.93

Tables 4 and 5 provide a summary of the logistic regression models' predictive accuracy, showing the number and percentage of cases correctly classified into TD and LI diagnostic groups. Sixty-three percent of the LI children included in the study were correctly classified in

both the DSS and BESS logistic regression models, which means approximately ⅓ of previously

classified LI children were estimated to not be detected in the logistic regression models. Dialect

appeared to have no influence on the effectiveness of the two LSA metrics distinguishing LI

children from TD children since the percent of LI children correctly classified were the same

when BESS and DSS data from all participants were placed in their respective logistic regression

models. The results suggest BESS and DSS scores are not helpful predictors for identifying

children who need language intervention.

Table 4

DSS Classification for Diagnostic Group

AAE-Speaking Children					MAE-Speaking Children			
	Estimated					Estimated		
Actual	LI	TD	Total		Actual	LI	TD	Total
LI	7	4	11		LI	5	6	11
TD	16	17	33		TD	13	20	33
Total	23	21	44		Total	18	26	44
Percent Correctly Classified					Percent Correctly Classified			
LI: 63%	Sensitivity: 0.18	Specificity: 1.00			LI: 63%	Sensitivity: 0.0	Specificity: 1.00	
TD: 78%	Sensitivity: 1.00	Specificity: 0.18			TD: 39%	Sensitivity: 1.00	Specificity: 0.00	

Table 5

BESS Classification for Diagnostic Group

AAE-Speaking Children				MAE-Speaking Children			
	Estimated				Estimated		
Actual	LI	TD	Total	Actual	LI	TD	Total
LI	7	4	11	LI	7	4	11
TD	14	19	33	TD	13	20	33
Total	21	23	44	Total	20	24	44
Percent Correctly Classified				Percent Correctly Classified			
LI: 63%	Sensitivity: 0.55		Specificity: 0.88	LI: 63%	Sensitivity: 0		Specificity: 1.0
TD: 81%	Sensitivity: 0.91		Specificity: 0.45	TD: 48%	Sensitivity: 1.0		Specificity: 0

Effects of Diagnostic Status and Dialect on Sentence Scores

A two-level ANOVA was conducted to examine the influence of diagnostic group (see Figure 1) and dialect (see Figure 2) on BESS scores. The main effect of dialect was not statistically significant, $F(1, 84) = 0.06$, $p = .81$. The main effect of diagnostic group was statistically significant, $F(1, 84) = 73.18$, $p < .001$. There was no significant interaction between dialect and diagnostic group, $F(1,84) = 0.06$, $p = .808$. These findings suggest that dialect does not have a significant impact on BESS scores. In contrast, diagnostic group has a substantial effect on BESS scores, indicating that individuals in different diagnostic groups perform differently. The lack of a significant interaction effect between dialect and diagnostic group suggests that the effect of diagnostic group on BESS scores is consistent across different dialects, which suggests that BESS is an effective LSA metric to assess varieties of English.

For the LI diagnostic group, the mean score for AAE-speaking children was 9.32 and 10.47 for MAE-speaking children, resulting in a difference of 1.15. The overall mean for the LI

group was 9.89. For the TD diagnostic group, the mean score for AAE-speaking children was

10.34 and 10.17 for MAE-speaking children, resulting in a difference of -0.17. The overall mean

for the TD group was 10.25. The effect of diagnostic group on the outcome measure was 1.02 for

AAE-speaking children and -0.30 for MAE-speaking children. The overall mean for AAE-

speaking children was 9.83 and 10.32 for MAE-speaking children, resulting in a difference of

0.49. The overall mean across all groups was 10.07. These findings suggest that there is a

significant difference in the BESS scores between AAE and MAE for the LI diagnostic group,

with MAE-speaking children receiving higher scores. In contrast, there was no significant

difference between AAE and MAE for the TD group. The overall effect of diagnostic group

indicates that children with LI tend to score lower than TD children. The overall mean across all

groups suggests a slight advantage for MAE-speaking children.

Figure 1
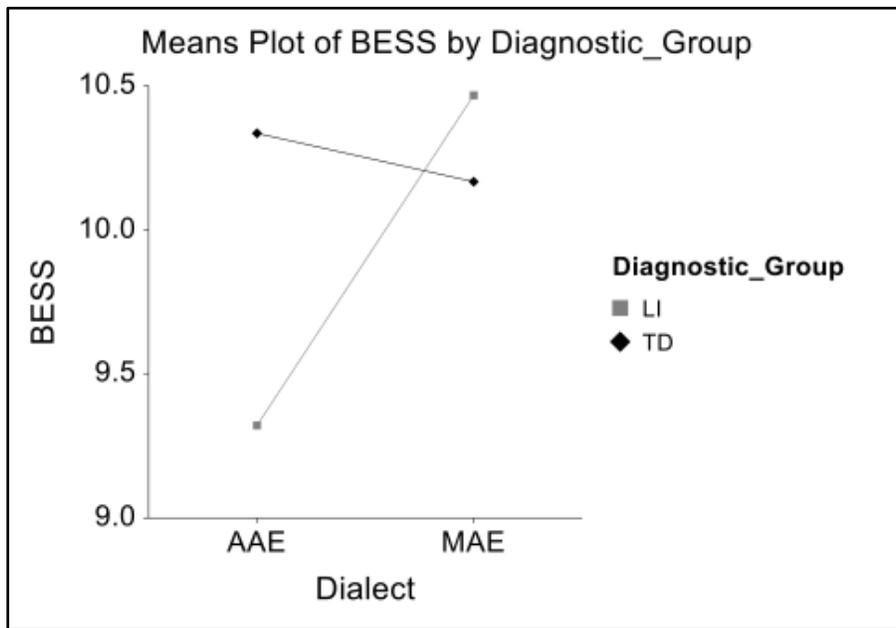
Figure 2
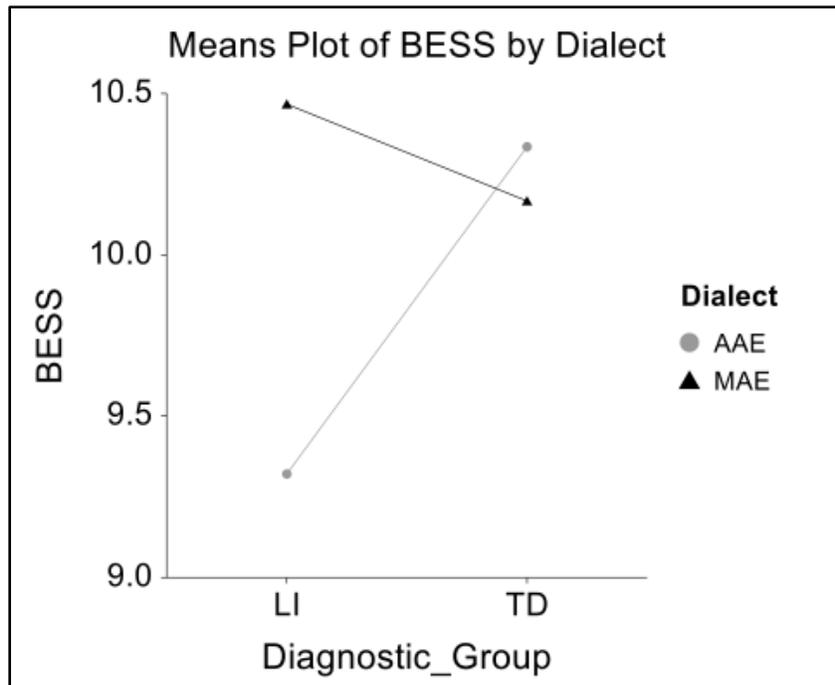
The data from the two-level ANOVA examining the influence of diagnostic group (see Figure 3) and dialect (see Figure 4) on DSS scores were similar to the data for BESS. The main effect of dialect was not statistically significant, $F(1, 84) = 0.06$, $p = .81$. The main effect of diagnostic group was statistically significant, $F(1, 84) = 73.18$, $p < .001$. There was no significant interaction between dialect and diagnostic group, $F(1,84) = 0.06$, $p = .808$. For the LI diagnostic group, the mean score for AAE-speaking children was 9.09 and 10.22, resulting in a difference of 1.13. The overall mean for the LI group was 9.66. For the TD diagnostic group, the mean score for AAE-speaking children was 9.94 and 9.93, resulting in a difference of -0.01. The overall mean for the TD group was 9.94. The effect of diagnostic group on the outcome measure was 0.84 for AAE-speaking children and -0.29 for MAE-speaking children, resulting in an overall difference of -0.57.

The overall mean for the diagnostic group effect was 0.28. The overall mean for AAE-speaking children was 9.52 and 10.08, resulting in a difference of 0.56. The overall mean across all groups was 9.80. These findings suggest that there is a significant difference in the outcome measure between AAE and MAE for the LI group with MAE-speaking children receiving higher scores. In contrast there was no significant difference between AAE and MAE for the TD group. The overall effect of diagnostic group indicated that children with LI tend to score lower than TD children. The overall mean across groups suggests a slight advantage for MAE-speaking children.

Figure 3
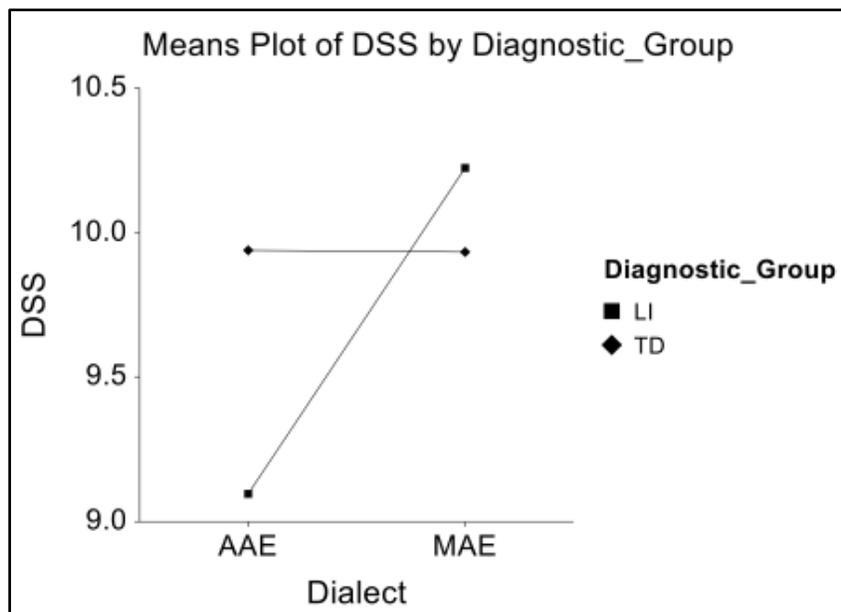
Figure 4
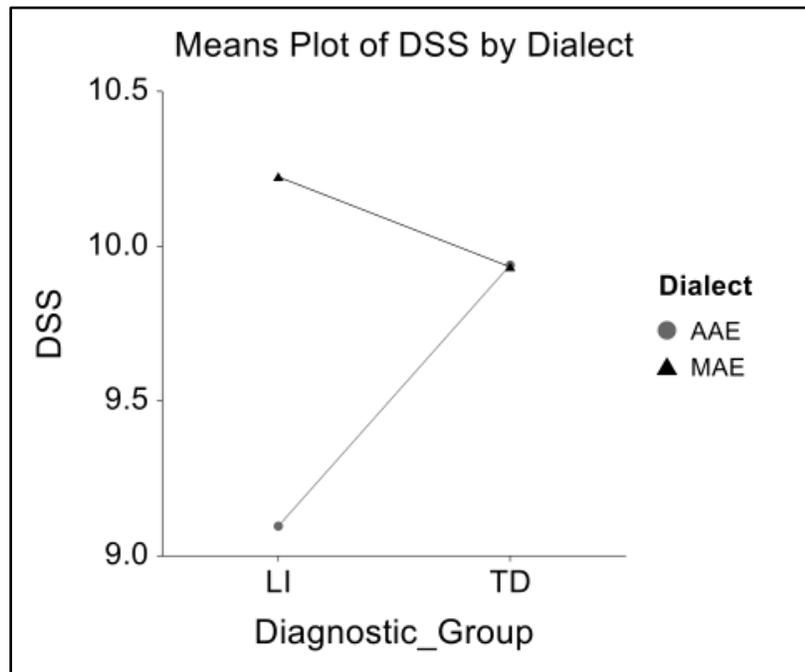
The comparison of the means and effects of diagnostic group by dialect for BESS and DSS revealed several key findings. Both BESS and DSS data show that children with LI tend to score lower than TD children, regardless of dialect. There is a significant difference in scores between AAE and MAE for the LI group for both BESS and DSS scores with MAE-speaking children receiving higher scores. Scores of AAE-speakers who were in the LI diagnostic group were noticeably lower in both LSA metrics when compared to MAE-speakers in the LI diagnostic group. The overall mean scores for BESS and DSS indicate a slight advantage for MAE speakers. These findings suggest that both BESS and DSS are sensitive to the effects of diagnostic groups and dialects. While BESS is fairer in assessing the language of AAE-speaking children, MAE-speaking children consistently received higher scores for both LSA metrics.

A series of linear regression analysis was performed to predict the relationship between MLU-W and sentence scores (i.e., BESS and DSS) by dialect. For AAE-speaking children, the linear regression analysis (see Figure 5) revealed a significant relationship between BESS scores and MLU-W, as indicated by the regression equation, BESS = 2.46 + 1.75 x MLU-W. The slope (1.75 with a standard error of 0.17) was found to be statistically significant ($p < 0.05$) with a 95% confidence interval ranging from 1.41 to 2.09. The coefficient of determination (R^2) was 0.72, suggesting that 72% of the variation in BESS scores can be explained by variation in MLU-W. The correlation between BESS and MLU-W for AAE-speaking children was 0.85, indicating a strong positive linear relationship between the two LSA metrics.

Figure 5

BESS vs. MLU-W Linear Regression Plot for AAE-Speaking Children
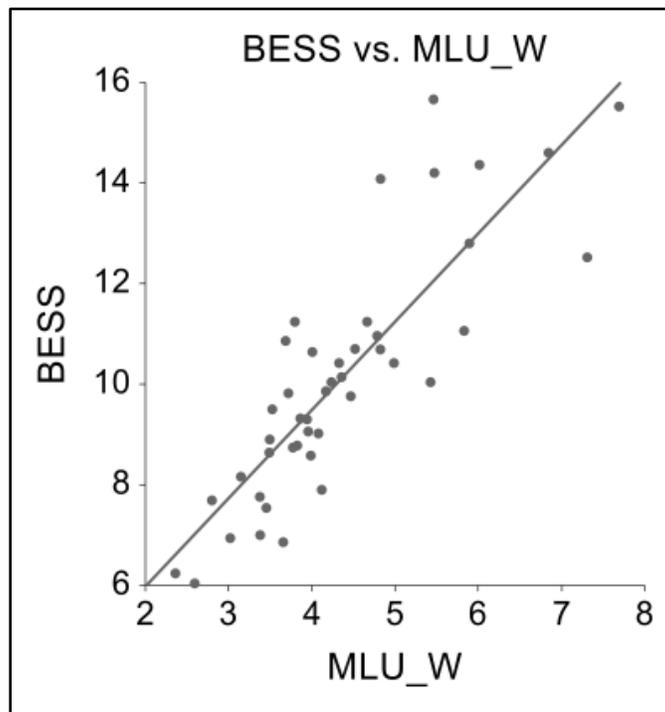
For MAE-speaking children, the linear regression analysis (see Figure 6) revealed a significant relationship between BESS scores and MLU-W, as indicated by the regression equation, BESS = 4.9 + 1.1 x MLU-W. The slope (1.1 with a standard error of 0.15) was found to be statistically significant ($p < 0.05$) with a 95% confidence interval ranging from 0.76 to 1.35. The coefficient of determination (R^2) was 0.56, suggesting that 56% of the variation in BESS scores can be explained by variation in MLU-W. The correlation between BESS and MLU-W for MAE-speaking children was 0.75, indicating a strong positive linear relationship between the two LSA metrics.

Figure 6

BESS vs. MLU-W Linear Regression Plot for MAE-Speaking Children
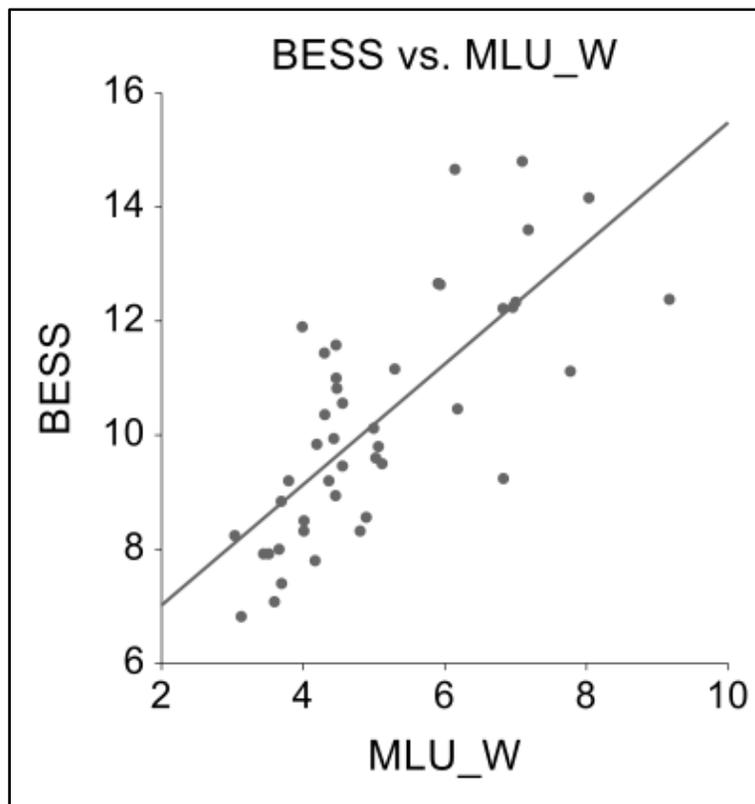
For AAE-speaking children, the linear regression analysis (see Figure 7) revealed a significant relationship between DSS scores and MLU-W, as indicated by the regression equation, DSS = 2.22 + 1.73 x MLU-W. The slope (1.73 with a standard error of 0.17) was found to be statistically significant ($p < 0.05$) with a 95% confidence interval ranging from 1.39 to 2.06. The coefficient of determination (R^2) was 0.73, suggesting that 73% of the variation in DSS scores can be explained by variation in MLU-W. The correlation between DSS and MLU-W for AAE-speaking children was 0.85, indicating a strong positive linear relationship between the two LSA metrics.

Figure 7

DSS vs. MLU-W Linear Regression Plot for AAE-Speaking Children
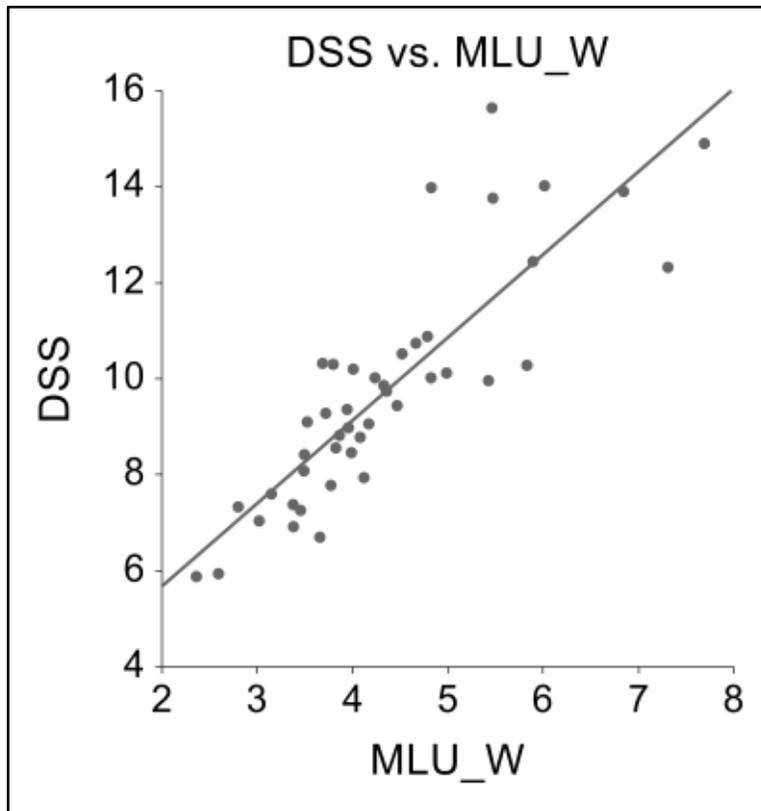
For MAE-speaking children, the linear regression analysis (see Figure 8) revealed a significant relationship between DSS scores and MLU-W, as indicated by the regression equation, DSS = 4.69 + 1.05 x MLU-W. The slope (1.05 with a standard error of 0.15) was found to be statistically significant ($p < 0.05$) with a 95% confidence interval ranging from 0.76 to 1.35. The coefficient of determination (R^2) was 0.55, suggesting that 55% of the variation in DSS scores can be explained by variation in MLU-W. The correlation between BESS and MLU-W for MAE-speaking children was 0.75, indicating a strong positive linear relationship between the two LSA metrics.

Figure 8

DSS vs. MLU-W Linear Regression Plot for MAE-Speaking Children
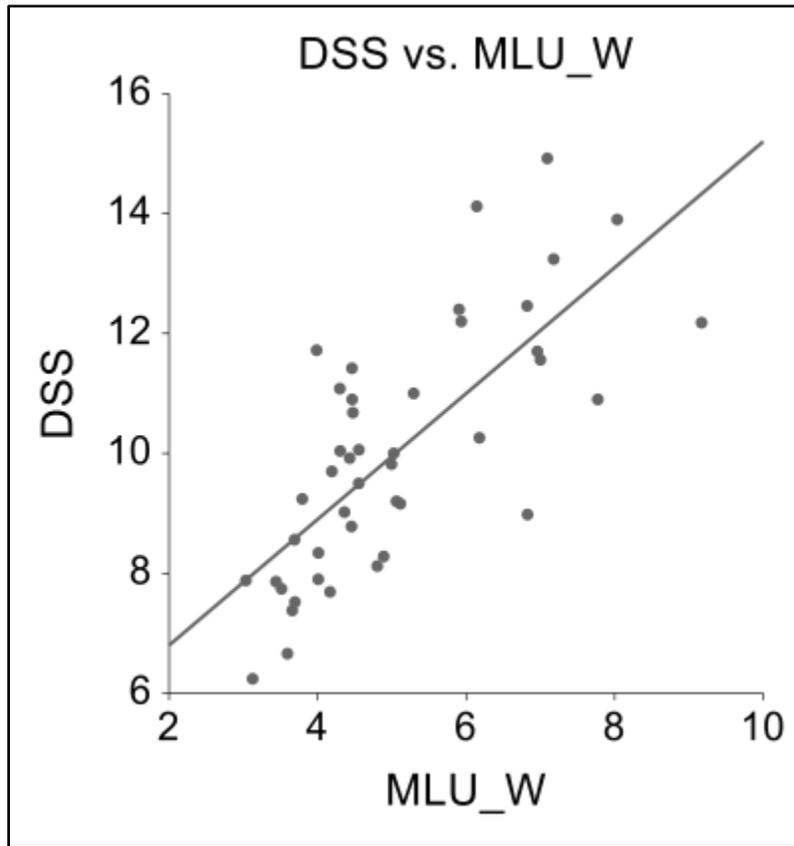
In summary, both AAE-speaking children and MAE-speaking children exhibited significant positive relationships between BESS scores and MLU-W, as well as DSS and MLU-W. However, the relationships were stronger for AAE-speaking children, as evidenced by higher R^2 values and correlations. Specifically, the R^2 values for AAE-speaking children were 0.72 for BESS and 0.73 for DSS compared to 0.56 and 0.55 for MAE-speaking children, respectively. The correlations were also higher for AAE-speaking children (0.85 for both BESS and DSS) compared to MAE-speaking children (0.75 for both BESS and DSS). These findings suggest that MLU-W is a more robust predictor of BESS and DSS scores for AAE-speaking children than MAE-speaking children.

Discussion

In this study, we investigated how diagnostic status (TD or LI) and variety of English (AAE and MAE) affect performance scores across three LSA metrics: BESS, DSS, and MLU-W. We sought to determine if the computerized BESS could effectively differentiate between TD and LI groups among AAE-speaking children. Additionally, we explored whether BESS offered a fairer assessment of AAE-speaking children's language compared to DSS while maintaining its ability to discriminate between English varieties. Spontaneous language samples from 88 children aged 5;0 to 7;02, including 22 in the LI group (11 AAE, 11 MAE) and 66 in the TD group (33 AAE, 33 MAE), were analyzed. AAE and MAE participants were matched by age ($\pm$ 6 months), gender, and eligible utterances based on DSS and BESS criteria. A comparison of data analyses for both dialect groups was conducted.

Two hypotheses were tested: (1) BESS would be more effective than DSS in differentiating LI group from TD group among AAE-speaking children, and (2) that AAE-speaking children would receive higher scores than MAE-speaking children with BESS, but

lower scores with DSS. The binomial logistic regression analyses did not support Hypothesis 1, as neither BESS nor DSS significantly differentiated between LI and TD children across dialect groups. Both metrics correctly classified 63% of LI children, indicating a substantial portion went undetected. The poor model fit of the logistic regression models ($p > 0.05$) suggested limited predictive accuracy. These results indicate that neither BESS nor DSS as a differential diagnostic tool for identifying language impairment. Regarding Hypothesis 2, the two-level ANOVA results showed no significant main effect of dialect on BESS scores, but a significant effect of diagnostic group. LI children scored lower than TD children, irrespective of dialect. However, BESS scores showed a slight advantage for MAE-speaking children in the LI group, contradicting the hypothesis that AAE-speaking children would score higher with BESS compared to MAE-speaking children. Similarly, DSS scores followed the same pattern, with MAE-speaking children scoring higher. Thus, the data did not support Hypothesis 2.

Additionally, the relationships between MLU-W and sentence scores (i.e., BESS and DSS) for AAE-speaking children and MAE-speaking children were examined. Linear regression analyses revealed stronger relationships between MLU-W and both BESS and DSS for AAE-speaking children compared to MAE-speaking children, as indicated by higher R^2 values and correlations. This suggests that MLU-W is more effective in identifying group differences (Overton et al., 2021). These results highlight the complexity of assessing language impairment across different varieties of English and suggest a need for further research to develop more effective diagnostic tools for children from diverse linguistic backgrounds.

It is important to note that DSS, the basis of BESS, did not identify MAE-speaking children with LI well. The concept of allocating points for specific grammatical elements in a language sample may need to be reconsidered. The supposed ordering of developmental

difficulty for DSS was done over 50 years ago, and sentence points are one of the least informative components of DSS when examining typical preschool language development over time (Bernstein Ratner et al., in review). Counting how many grammatical features are seen in a language sample based on eight grammatical categories may not provide show the appreciation of a child's language skill when appreciated from a broad perspective, such as assessing functional language through LSA (Heilmann et al., 2020) or identifying errors on non-contrastive grammatical features when assess AAE-speaking children (Oetting et al., 2013). LSA appears to be best used to set goals and in combination with other language assessments (Ramos et al., 2022).

Limitations and Future Directions

This study had some limitations that should be addressed by further research. One limitation is the AAE data in the CHILDES Eng-AAE collection. Currently, there are a total of 210 language samples from seven corpora listed in the Eng-AAE collection compared to the total of 2,731 language samples from 58 corpora listed in the Eng-NA collection. Future studies should collect comprehensive language samples from a diverse range of AAE-speaking children to establish normative data that accurately reflects linguistic capabilities and identify AAE-specific benchmarks for language development (Connor & Craig, 2006; Pearson et al., 2009; Murray et al., 2024). A second limitation is the number of language samples that meet the minimum required utterances (i.e., 50) based on DSS and BESS eligibility criteria. For example, the DELV corpus consists of 78 language samples from AAE-speaking children, but only 44 met the minimum number of eligible utterances.

A third limitation is the varying elicitation techniques used to obtain the language samples of the children included in the study and the varying setting. Samples were collected

from children through play, clinician-child conversation, or prompts for narratives at either home, school, or clinical setting. Elicitation techniques affect how much a child will speak in a particular setting. For example, a child may talk more during play at home because of their level of comfort versus talking less during a structured task at an office due to unfamiliarity. Future studies should consider using the same elicitation technique(s) in a similar setting for their participants in order to capture the children's natural communicative style. Furthermore, who elicits the language sample (e.g., parent, clinician, teacher) and their racial, linguistic, or cultural background compared to the child may affect the number of utterances within the language sample. A fourth limitation is the degree of LI for children within the diagnostic group for this study. Some of the AAE-speaking children from the DELV corpus had more disordered language than the "late talkers" or DLD MAE-speaking children, which affects language usage and sentence complexity in comparison. Future studies need to control the degree of LI (e.g., all participants in the LI group were diagnosed with mixed receptive-expressive language disorder). Given the limited diagnostic accuracy of BESS and DSS, the two LSA metrics should be included in a diagnostic battery, alongside qualitative measures, such as descriptive data about the child's communication behaviors.

Clinical Implications

There are several clinical implications for SLPs in relation to working with children from diverse linguistic backgrounds. SLPs must develop cultural competence and self-awareness to recognize and mitigate implicit biases. Training and reflection on personal attitudes towards linguistic diversity are crucial to ensure fair assessment of and equitable intervention for Black children. Distinguishing between language differences and language disorders is essential to avoid misdiagnosis of AAE-speaking children and inappropriate intervention goals. SLPs should

incorporate LSA in language assessment protocol as a naturalistic method to evaluate a child's language use. Computer-assisted LSA can help reduce biases and variability that may arise from different interpretations of language norms by providing objective and consistent methods for analyzing language samples However, SLPs should understand how MAE-centric LSA metric may affect analyses of children who speak nonmainstream varieties of English. Engagement in continuous professional development is vital to stay informed about best practices for working with Black children, including learning about new research, assessment tools, and culturally responsive intervention strategies.

There are also clinical implications for differentiating LI children from TD children among AAE-speaking children. Given the limitations of BESS and DSS in predicting disordered language, SLPs should consider using a broader array of assessment tools and methods including dynamic assessment, the DELV (normed-referenced assessment that effectively determines the degree of variation from MAE and assesses the risk of language disorders [Hamilton, 2020]), and language sampling that is sensitive to language differences, to accurately identify language impairments. MLU-W may be a more reliable metric for assessing language abilities in AAE-speaking children and should be incorporated into language assessment protocols. One significant limitation of MLU-W is its use for intervention planning. MLU-W is helpful for assessing language growth, but not for identifying language goals for intervention. The computerized BESS report can help SLPs identify appropriate grammatical targets (e.g., pronouns and wh- questions) for language intervention when working with AAE-speaking children.

Overall, these findings suggest that while BESS and DSS may have some utility, they should not be the sole determinants in diagnosing disordered language, especially in children

who speak AAE. While it appears that BESS is not better than DSS for kids who speak AAE, it is potentially useful to appreciate children's language samples for clinicians who have limited knowledge about AAE. A multidimensional, culturally sensitive approach is necessary for accurate assessment and intervention planning for AAE-speaking children. Creating a differential diagnostic tool that encompasses the assessment of contrastive AAE features across morphology, syntax, phonology, and pragmatics may help with distinguishing language differences from language disorders. Using BESS in conjunction with such a tool would help set appropriate expressive language goals for AAE-speaking children.

Appendix A

Selected AAE Morphological Features

Morphological features refer to linguistic characteristics that are relevant to the structure and form of words.

Feature	Description
Omission of plural -s	Absence of plural -s ("I saw two squirrel." → "I saw two squirrels.")
Omission of Possessive -s	Absence of possessive -s ("I want Jill doll." → "I want Jill's doll.")
Omission of past tense marker -ed	Absence of -ed tense marker ("They play kickball yesterday." → "They played kickball yesterday.")
Omission of third-person regular	Absence of the -s in third-person singular present tense ("She look sick." → "She looks sick.")
Use of "ain't"	Ain't is used as a negative auxiliary for "am not," "is not," "are not," etc.
Use of "done"	Done is used as an auxiliary to indicate the completion of an action ("He done ate." → "He ate.")

Note. This table shows a non-exhaustive list of AAE morphological features with sentence examples (AAE → MAE). AAE = African American English; MAE = Mainstream American English.

Appendix B

Selected AAE Syntactic Features

Syntactic features refer to linguistic characteristics that are relevant to the order of words in sentences.

Feature	Description
Double subject	A noun subject is followed by a pronoun that refers to the same subject ("My sister, she told me to drive." → "My sister told me to drive.")
Habitual/invariant "be"	Using "be" to indicate habitual actions ("He be working." –? "He usually works."
Multiple negation	Using multiple negations for emphasis ("I ain't got no phone charger." → "I don't have a phone charger.")
Unreversed questions	Word order of a question remains the same as that of a declarative sentence ("She going to the cafe?" –? "Is she going to the cafe?")
Zero copula	Omitting the verb "be" in sentences ("She excited." → "She is excited.")

Note. This table shows a non-exhaustive list of AAE syntactic features with sentence examples (AAE → MAE).

Appendix C

Selected AAE Phonological Features

Phonological features refer to distinctive attributes that characterize the systematic organization of sounds within a language. These features include aspects such as voicing (whether the vocal cords vibrate during sound production), place of articulation (point of contact where sound is produced), and manner of articulation (how the sound is produced).

Feature	Description
Consonant Cluster Reduction	Simplification of clusters, particularly at the end of words ("tes" [/tɛs/] →"test" [/tɛst/])
Final Consonant Devoicing	Voiced final consonants may become voiceless ("pick" [/pɪk/]→ "pig" [/pɪɡ/])
Metathesis	Reordering of sounds within a word ("aks" [/æks/] → "ask" [/æsk/])
Deletion of Final Nasals (i.e., /n/, /m/, and /ŋ/)	Final nasals may be deleted, leaving nasalization on the preceding vowel ("ma" [/mæ/] → "man" [/mæn/])
R-Dropping	/r/ may be dropped after vowels ("cah" [/kʰɑ] → "car" [/kɑr/])
L-Dropping	/l/ may be dropped after vowels ("sef" [/sɛf/] → "self" [/sɛlf/])
Th-Fronting	/θ/ and /ð/ may be pronounced as /f/ and /v/, respectively ("baf" [/bæf/] → "bath" [/bæθ/]; "mavah" [/mʌvə/] → "mother" [/mʌðɚ/]

Note. This table shows a non-exhaustive list of AAE phonological features with word examples (AAE [IPA transcription] → MAE [IPA transcription]).

Appendix D

Selected AAE Pragmatic Features

Pragmatics refer to how communicators use language in social interactions and how people receiving the messages interpret utterances based on context. This includes understanding implied meanings, managing turn-taking in conversation, and adapting language according to social norms and situational factors.

Feature	Description
Call and response	A communicative interaction where a speaker's statement ("call") is punctuated by the listener's response (e.g., speaker: "Alright stop…" → listener: "Collaborate and listen!")
Code-switching	Alternating between AAE and MAE depending on the social context and the audience.
Indirect requests	Using indirect language to convey politeness or avoid confrontation (e.g., saying "It's getting late, isn't it?" to convey that it's time for visitors to leave the house without saying it directly).
Signifying	Indirect communication using wordplay, irony, or humor (e.g., "You look casket ready!" implying that a person is dressed in the finest formal attire).
Use of silence	Using pauses or silence to emphasize a point.

Note. This table shows a non-exhaustive list of AAE pragmatic features with descriptions.

Sample BESS and DSS Analyses

Note. IP = indefinite pronouns; PP = personal pronouns; MV = main verbs; SV = secondary verbs; NG = negation; CNJ = conjunctions; IR = interrogative reversals; WHQ = wh-questions; S = sentence point; TOT = total points for utterance.

```
BESS Analysis
Child 07TF0 5;01 Male, TD Group, AAE-speaker from DELV Corpus

             Sentence            |IP |PP |MV |SV |NG |CNJ|IR |WHQ|  S|TOT|
I don't know .                   |   |1  |3 1|   |4  |   |   |   |  1| 10|
can I say something again ?      |3  |1  |3 1|   |   |   |5 3|   |  1| 17|
<I wanna hear you> [>] +/.       |   |1 1|1 1|2  |   |   |   |   |  1|  7|
first you put the bread .        |   |1  |1  |   |   |   |   |   |  1|  3|
put the peanut butter and jelly on it .|1|  |1  |   |   |3  |   |   |  1|  6|
and then you put another bread on it [=|3 1|1|1 |   |   |3  |   |   |  1| 10|
    ! child makes motions with hands] .|  |   |   |   |   |   |   |   |   |   |
how about I could push next ?    |   |1  |5 1|   |   |   |3  |4  |  1| 15|
are these heart shaped ?         |   |3  |2 2|   |   |   |3  |   |  1| 11|
<once upon a time there was a> [<] +/.| |   |2  |   |   |   |   |   |  1|  3|
once upon a time there was a boy who|  |6  |2 1|2  |   |   |   |   |  1| 13|
    wanna get a balloon .        |   |   |1  |   |   |   |   |   |   |   |
he got a balloon .               |   |2  |2  |   |   |   |   |   |  1|  5|
he ask for it .                  |1  |2  |1  |   |   |   |   |   |  1|  5|
and then it popped .             |1  |   |2  |   |   |3  |   |   |  1|  7|
what are those ?                 |   |3  |2  |   |   |   |3  |2  |  1| 11|
he cried .                       |   |2  |2  |   |   |   |   |   |  1|  5|
he got another one .             |3 3|2  |2  |   |   |   |   |   |  1| 11|
he was trying to get it, but he didn't|1 3|2 2|2 1|2|7  |5  |   |   |  1| 32|
    have no money .              |   |   |5 1|   |   |   |   |   |   |   |
he wanna get a balloon .         |   |2  |1 1|2  |   |   |   |   |  1|  7|
it popped .                      |1  |   |2  |   |   |   |   |   |  1|  4|
a boy popped it .                |1  |   |   |4  |   |   |   |   |  1|  6|
he wanted to get another one, but he|3 3|2 2|2 1|5|7  |5  |   |   |  1| 31|
    couldn't .                   |   |   |   |   |   |   |   |   |   |   |
can I keep this shell ?          |1  |1  |3 1|   |   |   |5 3|   |  1| 15|
I'm gonna collect one of these shells .|3|1 3|2 1|2|   |   |   |   |  1| 13|
what happened ?                  |   |   |2  |   |   |   |3  |2  |  1|  8|
I went to the beach .            |   |1  |2  |   |   |   |   |   |  1|  4|
ah I swammed [: swam] [* m:++ed:i] +/.|  |1  |2  |   |   |   |   |   |  0|  3|
I was playing in the sand .      |   |1  |2  |   |   |   |   |   |  1|  4|
I was covered in sand .          |   |1  |7  |   |   |   |   |   |  1|  9|
it's fun .                       |1  |   |1  |   |   |   |   |   |  1|  3|
<it had> [//] we had a sand fight .|  |3  |2  |   |   |   |   |   |  1|  6|
<I throw> [//] I throw a sand ball at|  |1 2|1  |   |   |   |   |   |  1|  5|
    him .                        |   |   |   |   |   |   |   |   |   |   |
he couldn't even catch it back . |1  |2  |5 1|   |7  |   |   |   |  1| 18|
                                 |   |   |1  |   |   |   |   |   |   |   |
I was happy .                    |   |1  |2  |   |   |   |   |   |  1|  4|
because I get to ride my bike .  |   |1 1|1 1|2  |   |6  |   |   |  1| 13|
it looks shiny .                 |1  |   |2  |   |   |   |   |   |  1|  4|
it's gold .                      |1  |   |1  |   |   |   |   |   |  1|  3|
has on it .                      |1  |   |2  |   |   |   |   |   |  1|  4|
is it a three wheel or a two wheel ?|1 3|  |1  |   |   |5  |4 3|   |  1| 21|
                                 |3  |   |   |   |   |   |   |   |   |   |
it's six wheels tall .           |1 3|   |1  |   |   |   |   |   |  1|  6|
and then tomorrow it will be seven feet|1 3|  |1 |   |   |3  |   |   |  1|  9|
    tall .                       |   |   |   |   |   |   |   |   |   |   |
what's happening ?               |   |   |1  |   |   |   |3  |2  |  1|  7|
can I color that ?               |1  |1  |3 1|   |   |   |5 3|   |  1| 15|
she drives a airplane .          |   |2  |2  |   |   |   |   |   |  1|  5|
she takes care of people .       |   |2  |2  |   |   |   |   |   |  1|  5|
ah to get a hair cut .           |   |   |1  |4  |   |   |   |   |  1|  6|
can I collect one of these ?     |3  |1 3|3 1|   |   |   |5 3|   |  1| 20|
I want to color .                |   |1  |1 1|2  |   |   |   |   |  1|  6|
<I get to color> [//] I get to color|  |1  |1 1|2  |   |   |   |   |  1|  6|
    the bike [=! child sings] .  |   |   |   |   |   |   |   |   |   |   |
I want to color the bike any color I|7  |1 1|1 1|2 |   |   |   |   |  1| 15|
    want .                       |   |   |1  |   |   |   |   |   |   |   |
I can't find the red .           |   |1  |3 1|   |4  |   |   |   |  1| 10|
TOTAL                            | 63| 71|126| 31| 29| 33| 54| 10| 49|466|

BESS score:  9.32
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DSS Analysis
Child 07TFO 5;01 Male, TD Group, AAE-speaker from DELV Corpus
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Sentence	IP	PP	MV	SV	NG	CNJ	IR	WHQ	S	TOT
I don't know .		1	3 1		4				1	10
can I say something again ?	3	1	3 1				6 1		1	16
<I wanna hear you> [>] +/.		1 1	1 1	2					1	7
first you put the bread .		1	1						1	3
put the peanut butter and jelly on it .	1		1			3			1	6
and then you put another bread on it [=	3 1	1	1			3			1	10
! child makes motions with hands] .										
how about I could push next ?		1	5 1				1	4	1	13
are these heart shaped ?		3	2 2				1		1	9
once upon a time there was a boy who		6	2 1	2					1	13
wanna get a balloon .			1							
he got a balloon .		2	2						1	5
he ask for it .	1	2	1						1	5
and then it popped .	1		2			3			1	7
what are those ?		3	2				1	2	1	9
he cried .		2	2						1	5
he got another one .	3 3	2	2						1	11
he was trying to get it, but he didn't	1 3	2 2	2 1	2	7	5			1	32
have no money .			5 1							
he wanna get a balloon .		2	1 1	2					1	7
it popped .	1		2						1	4
a boy popped it .	1			4					1	6
he wanted to get another one, but he	3 3	2 2	2 1	5	7	5			1	31
couldn't .										
can I keep this shell ?	1	1	3 1				6 1		1	14
I'm gonna collect one of these shells .	3	1 3	2 1	2					1	13
what happened ?			2				1	2	1	6
I went to the beach .		1	2						1	4
ah I swammed [: swam] [* m:++ed:i] +/.		1	2						0	3
I was playing in the sand .		1	2						1	4
I was covered in sand .		1	7						1	9
it's fun .	1		1						1	3
<it had> [//] we had a sand fight .		3	2						1	6
<I throw> [//] I throw a sand ball at		1 2	1						1	5
him .										
he couldn't even catch it back .	1	2	5 1		7				1	18
			1							
I was happy .		1	2						1	4
because I get to ride my bike .		1 1	1	2		6			1	12
it looks shiny .	1		2						1	4
it's gold .	1		1						1	3
has on it .	1		2						1	4
is it a three wheel or a two wheel ?	1 3		1			5	1		1	15
	3									
it's six wheels tall .	1 3		1						1	6
what's happening ?			1				1	2	1	5
can I color that ?	1	1	3 1				6 1		1	14
she drives a airplane .		2	2						1	5
she takes care of people .		2	2						1	5
ah to get a hair cut .			1	4					1	6
can I collect one of these ?	3	1 3	3 1				6 1		1	19
I want to color .		1	1 1	2					1	6
<I get to color> [//] I get to color		1	1	2					1	5
the bike [=! child sings] .										
I want to color the bike any color I	7	1 1	1 1	2					1	15
want .			1							
I can't find the red .		1	3 1		4				1	10
you took it .	1	1	2						1	5
you did .		1	2						1	4
TOTAL	60	73	125	31	29	30	34	10	49	441

DSS score: 8.82

BESS Analysis
Child 08JYO 5;07 Male, LI Group, AAE-speaker from DELV Corpus

Sentence	IP	PP	MV	SV	NG	CNJ	IR	WHQ	S	TOT
and Reggie was fightin(g) .			2			3			1	6
Briana kicked me and then I kicked her		1 1	2 2			3			1	12
back .		2								
I went to sandcastle on my birthday .		1 1	2						1	5
<I> [//] I my next birthday came up and	7	1 1	2 2			3			1	18
I went to ah Kiddywood .		1								
ah you know preschool ?		1	1				3		1	6
yeah, I went to a field_trip .		1	2						1	4
then my mother and dad came .		1	2			3			1	7
<you> [/] you should go across the		1	5 1			3			1	11
street and see <sand> [//] sand .										
you eat too .		1	1						1	3
and then you can play in the park .		1	3 1			3			1	9
I went, I went &~tha +...		1 1	2 2	5					1	12
<it's a &~po> [//] me and my mom went		1 1	2			3			1	8
pool .										
we went to the pool up here .		3	2						1	6
she's a cop .		2	1						1	4
go to school .			1						1	2
ah squirt water out of the ah water			1						1	2
thing .										
ah get fire .			1						1	2
he get on the truck and gos somewhere		2	1 2			3			1	9
else .										
I don't know what that is .		1	3 1		4	8		4 2	1	25
			1							
ah that he like to cut people's hair .		2	1 1	5		8			1	18
I know .		1	1						1	3
he gives people the mail and stuff .		2	2			3			1	8
she's at school .		2	1						1	4
she's a teacher .		2	1						1	4
<ah ah> [//] help people .			1						1	2
she painted on ah the board .		2	2						1	5
ah give somebody's birthday .	3		1 1	5					1	11
I don't see no red .	3	1	3 1		4				1	13
there is no red .	1 3		1						1	6
I don't got no red .	3	1	3 2		4				1	14
I'm a silly boy .		1	2						1	4
try ?			1				3		1	5
he fell off the bike .		2	2						1	5
circle it .	1		1						1	3
I have to color this ?	1	1	1				3		1	7
where's the cat ?			1				3	2	1	7
I don't see no cat .	3	1	3 1		4				1	13
no, I don't see none .	4	1	3 1		4				1	14
where is it ?	1		1				3	2	1	8
no, I don't see one .	3	1	3 1		4				1	13
there it is .	1		1						1	3
it's a fake gun .	1		1						1	3
bullets do .			1						1	2
cops have real guns .			1						1	2
(be)cause he do .		2	1			6			1	10
he do look like a fireman .		2	3 1						1	7
turn it .	1		1						1	3
how do you erase it ?	1	1	3 1				5 3	4	1	19
I erased it .	1	1	2						1	5
how you make it ?	1	1	1	5			3	4	1	16
TOTAL	39	54	108	20	24	49	26	18	50	388

BESS score: 7.76

43

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DSS Analysis
Child 08JYO 5;07 Male, LI Group, AAE-speaker from DELV Corpus
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Sentence	IP	PP	MV	SV	NG	CNJ	IR	WHQ	S	TOT
and Reggie was fightin(g) .			2			3			1	6
Briana kicked me and then I kicked her back .		1 1 2	2 2			3			1	12
I went to sandcastle on my birthday .		1 1	2						1	5
<I> [//] I my next birthday came up and I went to ah Kiddywood .	7	1 1 1	2 2			3			1	18
ah you know preschool ?		1	1				1		1	4
yeah, I went to a field_trip .		1	2						1	4
then my mother and dad came .		1	2			3			1	7
<you> [/] you should go across the street and see <sand> [//] sand .		1	5 1			3			1	11
you eat too .		1	1						1	3
and then you can play in the park .		1	3 1			3			1	9
I went, I went &~tha +...		1 1	2 2	5					1	12
<it's a &~po> [//] me and my mom went pool .		1 1	2			3			1	8
we went to the pool up here .		3	2						1	6
she's a cop .		2	1						1	4
go to school .			1						1	2
ah squirt water out of the ah water thing .			1						1	2
ah get fire .			1						1	2
he get on the truck and gos somewhere else .		2	1 2			3			1	9
I don't know what that is .		1	3 1 1		4	8		4 2	1	25
ah that he like to cut people's hair .		2	1 1	5		8			1	18
I know .		1	1						1	3
he gives people the mail and stuff .		2	2			3			1	8
she's at school .		2	1						1	4
she's a teacher .		2	1						1	4
<ah ah> [//] help people .			1						1	2
she painted on ah the board .		2	2						1	5
ah give somebody's birthday .	3		1 1						1	6
I don't see no red .	3	1	3 1		4				1	13
there is no red .	3		1						1	5
I don't got no red .	3	1	3 2		4				1	14
I'm a silly boy .		1	2						1	4
try ?			1				1		1	3
he fell off the bike .		2	2						1	5
circle it .	1		1						1	3
I have to color this ?	1	1	1				1		1	5
where's the cat ?			1				1	2	1	5
I don't see no cat .	3	1	3 1		4				1	13
no, I don't see none .	4	1	3 1		4				1	14
where is it ?	1		1				1	2	1	6
no, I don't see one .	3	1	3 1		4				1	13
there it is .	1		1						1	3
it's a fake gun .	1		1						1	3
bullets do .			1						1	2
cops have real guns .			1						1	2
(be)cause he do .		2	1			6			1	10
he do look like a fireman .		2	3 1						1	7
turn it .	1		1						1	3
how do you erase it ?	1	1	3 1				6 1	4	1	18
I erased it .	1	1	2						1	5
how you make it ?	1	1	1	5			1	4	1	14
TOTAL	38	54	108	15	24	49	13	18	50	369

DSS score: 7.38

44

BESS Analysis
Child noraimee 5;04 Female, TD Group, MAE-speaker from Bliss Corpus

Sentence	IP	PP	MV	SV	NG	CNJ	IR	WHQ	S	TOT
there's a little gum machine .	1		1						1	3
&-um (.) I'm really good at opening things .		1	2						1	4
there is bubble gum in it !	1 1		1						1	4
that really came out !	1		2						1	4
maybe the cat's gonna chew bubble gum .			1 1	2					1	5
I'm not sure .		1	2						1	4
let's try !		3	1 1	2					1	8
I dunno [: don't know] .		1	3 1		4				1	10
would you like one ?	3	1	5 1				5 3		1	19
think &-um little oops little bit long .			1						1	2
she's cute .		2	1						1	4
maybe we could make some cookies for her .	3	3 2	5 1						1	15
but I can't use the oven .		1	3 1		4	5			1	15
I can't use the top .		1	3 1		4				1	10
I can't use the bottom .		1	3 1		4				1	10
my sleeves don't roll .		1	3 1		4				1	10
one thing we hafta use is butter .	3	3	1 1	2			4		1	15
and we need oatmeal .		3	1			3			1	8
she probably wants to make some of the cookies .	3	2	2 1	5					1	14
but she's too little .		2	1			5			1	9
she'll just stir it .	1	2	1						1	5
I can reach don't you think ?		1 1	3 1		4		5 3		1	23
			3 1							
is that a chef's book ?			1			8	3		1	13
oh she just bakes in her head .		2 2	2						1	7
we need measuring cups I know that .	1	3 1	1 1						1	8
for a girl I sure am smart .		1	2						1	4
I think you should wash your hands before you do it .	1	1 1	1 5			8			1	21
		1 1	1							
okay where is it ?	1	6	1				3		1	12
I can't touch that .	1	1	3 1		4				1	11
to wash them .		3	1						1	5
I think we should get the cup from there the measuring cup .		1 3	1 5						1	12
			1							
here's one .	1 3		1						1	6
I can do this .	1	1	3 1						1	7
that's enough flour .	1 3		1						1	6
stir it ?	1		1				3		1	6
the dogs are cute .			2						1	3
so are the cats .			2						1	3
I like that name .	1	1	1						1	4
now pour it right into the bowl right ?	1		1				3		1	6
sweetens it up .	1		2						1	4
you're missing a measuring cup ?		1	1				3		1	6
is this one it ?	1 3		1				3		1	10
	1									
prob(ab)ly your husband's got them .			1 3	7	4				1	16
this isn't too heavy .	1		1		1 5				1	9
it's tickling my bubble gum .	1	1	1						1	4
sure does !			2						1	3
and some of it went on the floor .	3 1		2			3			1	10
I thought so .		1	2						1	4
we have lots_of brown sugar at home .	3	3	1						1	8
I like cream of wheat .		1	1						1	3
TOTAL	48	72	123	15	34	32	38	0	50	412

BESS score: 8.24

DSS Analysis
Child noraimee 5;04 Female, TD Group, MAE-speaker from Bliss Corpus

Sentence	IP	PP	MV	SV	NG	CNJ	IR	WHQ	S	TOT
there's a little gum machine .			1						1	2
&-um (.) I'm really good at opening things .		1	2						1	4
there is bubble gum in it !	1		1						1	3
that really came out !	1		2						1	4
maybe the cat's gonna chew bubble gum .			1	1	2				1	5
I'm not sure .		1	2						1	4
let's try !		3	1	1	2				1	8
I dunno [: don't know] .		1	3	1		4			1	10
would you like one ?	3	1	5	1			6 1		1	18
think &-um little oops little bit long .			1						1	2
she's cute .		2	1						1	4
maybe we could make some cookies for her .	3	3 2	5	1					1	15
but I can't use the oven .		1	3	1		4	5		1	15
I can't use the top .		1	3	1		4			1	10
I can't use the bottom .		1	3	1		4			1	10
my sleeves don't roll .		1	3	1		4			1	10
one thing we hafta use is butter .	3	3	1	1			4		1	13
and we need oatmeal .		3	1			3			1	8
she probably wants to make some of the cookies .	3	2	2	1	5				1	14
but she's too little .		2	1			5			1	9
she'll just stir it .	1	2	1						1	5
I can reach don't you think ?		1 1	3	1		4	6 1		1	22
			3	1						
is that a chef's book ?			1			8	1		1	11
oh she just bakes in her head .		2 2	2						1	7
we need measuring cups I know that .	1	3 1	1	1					1	8
for a girl I sure am smart .		1	2						1	4
I think you should wash your hands before you do it .	1	1 1	1	5			8		1	21
		1 1	1							
okay where is it ?	1	6	1				1		1	10
I can't touch that .	1	1	3	1		4			1	11
to wash them .		3	1						1	5
I think we should get the cup from there the measuring cup .		1 3	1	5					1	12
			1							
here's one .	3		1						1	5
I can do this .	1	1	3	1					1	7
that's enough flour .	1 3		1						1	6
stir it ?	1		1				1		1	4
the dogs are cute .			2						1	3
so are the cats .			2						1	3
I like that name .	1	1	1						1	4
now pour it right into the bowl right ?	1		1				1		1	4
sweetens it up .	1		2						1	4
you're missing a measuring cup ?		1	1				1		1	4
is this one it ?	1 3		1				1		1	8
	1									
prob(ab)ly your husband's got them .		1 3	7	4					1	16
it's tickling my bubble gum .	1	1	1						1	4
sure does !			2						1	3
and some of it went on the floor .	3 1		2			3			1	10
I thought so .		1	2						1	4
we have lots_of brown sugar at home .	3	3	1						1	8
I like cream_of wheat .		1	1						1	3
we're gonna bake good cookies aren't we ?		3	1	1	2	1	1		1	10
TOTAL	44	75	124	15	29	32	25	0	50	394

DSS score: 7.88

46

BESS Analysis
Child a-2-61pre 6;02 Female, LI Group, MAE-speaker from Gillam Corpus

Sentence	IP	PP	MV	SV	NG	CNJ	IR	WHQ	S	TOT
just the <&~w> [/] way I said .		1	2						1	4
<um &-uh I don't> [/] I don't know .		1	3 1		4				1	10
and the girls go 0to Mcdonald .			1			3			0	4
<and> [/] the boy go 0to Mcdonald .			1						0	1
<and they go> [/] they go 0to Mcdonalds .		3	1						0	4
&-um they could go for at the Mcdonalds for her mom for at the kids .		3 2	5 1						1	12
and they go at school .		3	1			3			1	8
<and> [/] we hafta go for Mcdonalds for her mom .		3 2	1	2					1	9
<and> [/] they could go .		3	5 1						1	10
<and and> [/] it say five more minutes .	1 3		1						1	6
<and> [/] we can go &-uh home .		3	3 1						1	8
<and and> [/] we hafta watch movies and games and puzzles and toys and videogames .		3	1	2		3 3 3 3			1	19
and watch <um &~r> [/] rascal and watch the movies and eat popcorn and watch the movies .			1 1 1			3 3 3 3			1	16
<they> [<] hafta go home to eats [% ew: eat] .		3	1 2	2					1	9
to wake up and go at school .			1 1			3			1	6
and they can do the clock .		3	3 1			3			1	11
and he got sleep and hurt his head .		2 2	2 1			3 3			1	14
<and> [/] that boy spilled milk .	1			4					1	6
and he got trouble .		2	2			3			1	8
and he &-uh couldn't spank .		2	5 1		7	3			1	19
<and> [/] that boy Eddie can't tie his shoe .	1	2	3 1		4				1	12
<and> [/] he got broked [: broke] [* m: +ed] off .		2	2						0	4
<and> [/] that boy waiting 0on the bus .	1			4					0	5
and his bus is going .		2	1			3			1	7
<and he say and> [/] he said wait .		2	2						1	5
<and he could and> [/] they can go <at school xxx> [/] at school [/] school school .		3	3 1						1	8
<and> [/] they could go at the teacher what are you doing what are you doing .		3 1 1	5 1 2 2				4 4	4 2 2	1	32
<and> [/] they can go at school .		3	3 1						1	8
<and they> [/] they go as bussers@n .		3	1			8			1	13
and [/] and he [/] he forgot wait .		2	2			3			1	8
and he [/] he rans [: ran] [* m:+es] .		2	2			3			0	7
<and> [/] the teacher and she came at the outside .		2	2			3			1	8
<and the boy &-uh go at &~s and> [/] he go at school .		2	1						1	4
<uh the> [/] we can do that .	1	3	3 1						1	9
and they go to airplane up &-uh space .		3	1			3			1	8
<and the> [/] that girl ran as fast 0as she could .	1	2	2						0	5
<and she go and> [/] and she go .		2	1			3			1	7
<and> [/] she see the dog and the hairy .		2	1			3			1	7
<and> [/] she could turn to girl .		2	5 1						1	9
<and> [/] she's a big .		2	1						1	4
<and> [/] she's big .		2	1						1	4
[^ burps] just like her .		2	1						1	4
and [/] and <he> [/] she go for <at the > [/] at to +...		2	1			3			1	7
<and and the &~gir> [/] that mom said welcome to Beautiful_Day_Beautiful_Day .	1		2						1	4
<and> [/] that girl said let me see you .	1	1 1	2 1 1	5					1	13
let's [/] <let's look> [/] <let's look> [/] <let's look> [/] let's look .		3	1 1	2					1	8
and that dog and she does woof_woof woof_woof .	1	2	1 3 1 1			3 3			1	16
<and and> [/] he bark .		2	1						1	4
<and> [/] he say ahhh@c ahhh@c .		2	1						1	4
<and> [/] they could go for the airplane .		3	5 1						1	10
TOTAL	12	107	128	21	15	86	8	8	43	428

BESS score: 8.56

DSS Analysis
Child a-2-61pre 6;02 Female, LI Group, MAE-speaker from Gillam Corpus

Sentence	IP	PP	MV	SV	NG	CNJ	IR	WHQ	S	TOT
just the <&~w> [/] way I said .		1	2						1	4
<um &-uh I don't> [/] I don't know .		1	3 1		4				1	10
and the girls go 0to Mcdonald .			1			3			0	4
<and> [/] the boy go 0to Mcdonald .			1						0	1
<and they go> [/] they go 0to Mcdonalds .		3	1						0	4
&-um they could go for at the Mcdonalds for her mom for at the kids .		3 2	5 1						1	12
and they go at school .		3	1			3			1	8
<and> [/] we hafta go for Mcdonalds for her mom .		3 2	1						1	7
<and> [/] they could go .		3	5 1						1	10
<and and> [/] it say five more minutes .	1 3		1						1	6
<and> [/] we can go &-uh home .		3	3 1						1	8
<and and> [/] we hafta watch movies and games and puzzles and toys and videogames .		3	1			3 3 / 3 3			1	17
and watch <um &~r> [/] rascal and watch the movies and eat popcorn and watch the movies .			1 1 / 1			3 3 / 3 3			1	16
<they> [<] hafta go home to eats [% ew: eat] .		3	1 2						1	7
to wake up and go at school .			1 1			3			1	6
and they can do the clock .		3	3 1			3			1	11
and he got sleep and hurt his head .		2 2	2 1			3 3			1	14
<and> [/] that boy spilled milk .	1			4					1	6
and he got trouble .		2	2			3			1	8
and he &-uh couldn't spank .		2	5 1		7	3			1	19
<and> [/] that boy Eddie can't tie his shoe .	1	2	3 1		4				1	12
<and> [/] he got broked [: broke] [* m: +ed] off .		2	2						0	4
<and> [/] that boy waiting 0on the bus .	1			4					0	5
and his bus is going .		2	1			3			1	7
<and he say and> [/] he said wait .		2	2						1	5
<and he could and> [/] they can go <at school xxx> [/] at school [/] school school .		3	3 1						1	8
<and> [/] they could go at the teacher what are you doing what are you doing .		3 1 / 1	5 1 / 2 2					4 2 / 2	1	24
<and> [/] they can go at school .		3	3 1						1	8
<and they> [/] they go as bussers@n .		3	1			8			1	13
and [/] and he [/] he forgot wait .		2	2			3			1	8
and he [/] he rans [: ran] [* m:+es] .		2	2			3			0	7
<and> [/] the teacher and she came at the outside .		2	2			3			1	8
<and the boy &-uh go at &~s and> [/] he go at school .		2	1						1	4
<uh the> [/] we can do that .	1	3	3 1						1	9
and they go to airplane up &-uh space .		3	1			3			1	8
<and the> [/] that girl ran as fast 0as she could .	1	2	2						0	5
<and she go and> [/] and she go .		2	1			3			1	7
<and> [/] she see the dog and the hairy .		2	1			3			1	7
<and> [/] she could turn to girl .		2	5 1						1	9
<and> [/] she's a big .		2	1						1	4
<and> [/] she's big .		2	1						1	4
[^ burps] just like her .		2	1						1	4
and [/] and <he> [/] she go for <at the > [/] at to +...		2	1			3			1	7
<and and the &~gir> [/] that mom said welcome to Beautiful_Day_Beautiful_Day .	1		2						1	4
<and> [/] that girl said let me see you .	1	1 1	2 1 / 1	5					1	13
let's [/] <let's look> [/] <let's look> [/] <let's look> [/] let's look .		3	1 1	2					1	8
and that dog and she does woof_woof woof_woof .	1	2	1 3 / 1 1			3 3			1	16
<and and> [/] he bark .		2	1						1	4
<and> [/] he say ahhh@c ahhh@c .		2	1						1	4
<and> [/] they could go for the airplane .		3	5 1						1	10
TOTAL	12	107	128	15	15	86	0	8	43	414

DSS score: 8.28

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References

Agbenyega, S., & Jiggetts, J. (1999). Minority children and their over-representation in special
education. *Education Indianapolis*, *119*(4), 619–632.

American Speech-Language-Hearing Association. (2003). *American English dialects* [Technical
Report]. Available from www.asha.org/policy.

American Speech-Language-Hearing Association. (2025). *2024 Member and affiliate profile*.
www.asha.org

Baker-Bell, A. (2020). *Linguistic justice: Black language, literacy, identity, and pedagogy.*
(1st ed.). Taylor & Francis Group.

Barragan, B., Castilla-Earls, A., Martinez-Nieto, L., Restrepo, M. A., & Gray, S. (2018).
Performance of low-income dual language learners attending English-only schools on the
Clinical Evaluation of Language Fundamentals–Fourth Edition, Spanish. *Language
Speech and Hearing Services in Schools, 49*(2), 292.
https://doi.org/10.1044/2017_LSHSS-17-0013

Beneke, M., & Cheatham, G. A. (2015). Speaking up for African American English: Equity and
inclusion in early childhood settings. *Early Childhood Education Journal*, *43*(2),
127–134. https://doi.org/10.1007/s10643-014-0641-x

Bernstein Ratner, N., & MacWhinney, B. (2023). Assessment and therapy goal planning using
free computerized language analysis software. *Perspectives of the ASHA Special
Interest Groups*, *8*(1), 19–3. https://doi.org/10.1044/2022_PERSP-22-00156

Bernstein Ratner, N., MacWhinner, B., Hong, Y, & Yang, J. S. (In review). Developmental
Sentence Scoring (DSS) for preschool language sample analysis: A psychometric update.
American Journal of Speech-Language Pathology.

Bland-Stewart, L. M. (2005). Difference or deficit in speakers of African American English?: What every clinician should know…and do. *ASHA Leader*, *10*(6), 6–31. https://doi.org/10.1044/leader.FTR1.10062005.6

Bliss, L. S. (1988). Modal usage by preschool children. *Journal of Applied Developmental Psychology, 9*(3), 253-261.

Bloomquist, J. L., Green, L. J., & Lanehart, S. L. (Eds.). (2015). *The Oxford handbook of African American language*. Oxford University Press.

Boutte, G. S., Earick, M. E., & Jackson, T. O. (2021). Linguistic policies for African American language speakers: Moving from anti-blackness to pro-blackness. *Theory into Practice*, *60*(3), 231–241. https://doi.org/10.1080/00405841.2021.1911576

Burns, F. A., de Villiers, P. A., Pearson, B. Z., & Champion, T. B. (2012). Dialect-neutral indices of narrative cohesion and evaluation. *Language, Speech & Hearing Services in Schools*, *43*(2), 132–152. https://doi.org/10.1044/0161-1461(2011/10-0101)

Bushnell, L. (2021). Educational disparities among racial and ethnic minority youth in the United States. *Ballard Brief*, *2021*(2), 9.

Castilla-Earls, A., Bedore, L., Rojas, R., Fabiano-Smith, L., Pruitt-Lord, S., Restrepo, M. A., & Peña, E. (2020). Beyond scores: Using converging evidence to determine speech and language services eligibility for dual language learners. *American Journal of Speech-Language Pathology, 29*(3), 1116–1132. https://doi.org/10.1044/2020_AJSLP-19-00179

Clark, E. L., Easton, C., & Verdon, S. (2021). The impact of linguistic bias upon

    speech-language pathologists' attitudes towards non-standard dialects of English.

    Clinical Linguistics & Phonetics, *35*(6), 542–559.

    https://doi.org/10.1080/02699206.2020.1803405

Condron, D. J. (2009). Social class, school and non-school environments, and Black/White

    inequalities in children's learning. *American Sociological Review*, *74*(5), 683–708.

    https://doi.org/10.1177/000312240907400501

Connor, C. M., & Craig, H. K. (2006). African American preschoolers' language, emergent

    literacy skills, and use of African American English: A complex relation. *Journal of*

    Speech, Language, and Hearing Research, *49*(4), 771–792.

    https://doi.org/10.1044/1092-4388(2006/055)

Craig, H. K., Thompson, C. A., Washington, J. A., & Potter, S. L. (2004). Performance of

    elementary-grade African American students on the Gray Oral Reading Tests.

    Language, Speech & Hearing Services in Schools, *35*(2), 141–154.

    https://doi.org/10.1044/0161-1461(2004/015)

Cruz, R. A., & Firestone, A. R. (2022). Understanding the empty backpack: The role of timing

    in disproportionate special education identification. *Sociology of Race and Ethnicity*

    (Thousand Oaks, Calif.), *8*(1), 95–113. https://doi.org/10.1177/23326492211034890

Diamond, J. B., & Huguley, J. P. (2011). Black/White disparities in educational outcomes:

    Rethinking issues of race, culture, and context. *African American children and mental*

    health, *1*, 63-94.

Dickinson, D. K., & Tabors, P. O. (2001). *Beginning literacy with language: Young children*

    learning at home and school. P.H. Brookes Pub. Co.

Diehm, E. A., & Hendricks, A. E. (2021). Teachers' content knowledge and pedagogical

    beliefs regarding the use of African American English. *Language, Speech & Hearing*

    Services in Schools, *52*(1), 100–117. https://doi.org/10.1044/2020_LSHSS-19-00101

de Villiers, J. G., Liberman, M., & Partee, B. (2017). Unbiased language assessment:

    Contributions of linguistic theory. *Annual Review of Linguistics*, *3*(1), 309–330.

    https://doi.org/10.1146/annurev-linguistics-011516-033854

Dunn, L. M. (1968). Special education for the mildly retarded: Is much of it justifiable?

    Exceptional Children, *35*(1), 5–22. https://doi.org/10.1177/001440296803500101

Dyson, O. L., Jeffries, J. L. (Judson L.), & Brooks, K. L. (Eds.). (2020). *African American*

    culture: An encyclopedia of people, traditions, and customs. Greenwood, an imprint of

    ABC-CLIO, LLC.

Easton, C., & Verdon, S. (2021). The influence of linguistic bias upon speech-language

    pathologists' attitudes toward clinical scenarios involving nonstandard dialects of

    English. *American Journal of Speech-Language Pathology*, *30*(5), 1973–1989.

    https://doi.org/10.1044/2021_AJSLP-20-00382

Ferri, B. A., & Connor, D. J. (2005). In the shadow of "Brown": Special education and

    overrepresentation of students of color. *Remedial and Special Education, 26*(2), 93–100.

Franca, M. C., Smith, L. M., Nichols, J. L., & Balan, D. S. (2016). Culturally diverse attitudes

    and beliefs of students majoring in speech-language pathology. *CoDAS, 28*(5), 533–545.

    https://doi.org/10.1590/2317-1782/20162015245

Francois, I., Lapka, S., Berstein Ratner, N., & Mills, M. T. (2023). Assessing for developmental

    language disorder in the context of African American English. *EBP Briefs*, *16*(2).

Gillam, R. B. & Pearson, N. (2004). *Test of Narrative Language*. Austin, TX: Pro-Ed Inc.

Guiberson, M., & Atkins, J. (2012). Speech-language pathologists' preparation, practices, and

    perspectives on serving culturally and linguistically diverse children. *Communication*

    Disorders Quarterly, *33*(3), 169–180. https://doi.org/10.1177/1525740110384132

Hamilton, M.-B. (2020). An informed lens on African American English. *ASHA Leader*, *25*(1),

    46–53. https://doi.org/10.1044/leader.FTR1.25012020.46

Hammond, C., Mitchell, P., & Johnson, M. (2009). Academic and clinical preparation for

    cultural and linguistic diversity in speech-language pathology: Program director

    perspectives. *Contemporary Issues in Communication Science and Disorders*, *36*(1),

    63–76.

Harris, Y. R., & Schroeder, V. M. (2013). Language deficits or differences: What we know

    about African American Vernacular English in the 21st century. *International Education*

    Studies, *6*(4), 194-. https://doi.org/10.5539/ies.v6n4p194

Heilmann, J., Tucci, A., Plante, E., & Miller, J. F. (2020). Assessing functional language in

    school-aged children using language sample analysis. P*erspectives of the ASHA Special*

    Interest Groups, 5(3), 622–636. https://doi.org/10.1044/2020_PERSP-19-00079

Hendricks, A. E., & Adlof, S. M. (2017). Language assessment with children who speak

    nonmainstream dialects: Examining the effects of scoring modifications in

    norm-referenced assessment. *Language, Speech & Hearing Services in Schools*, *48*(3),

    168–182.

Hendricks, A. E., & Adlof, S. M. (2020). Production of morphosyntax within and across

    different dialects of American English. *Journal of Speech, Language, and Hearing*

    Research: JSLHR, 63(7), 2322–2333. https://doi.org/10.1044/2020_JSLHR-19-00244

Hendricks, A. E., Watson-Wales, M., & Reed, P. E. (2021). Perceptions of African American

    English by students in speech-language pathology programs. *American Journal of*

    Speech-Language Pathology, *30*(5), 1962–1972.

    https://doi.org/10.1044/2021_AJSLP-20-00339

Hyter, Y. D. (1984). *Reliability and validity of the Black English Sentence Scoring System*

    [Unpublished master's thesis]. Western Michigan University.

    https://scholarworks.wmich.edu/masters_theses/1490

Jackson, J. & Pearson, B. Z. (2004, November 20). Contrastive versus non-contrastive features

    in African American English child speech, ages 4-12 [PowerPoint slides]. UMass

    Amherst. https://www.umass.edu/aae/Asha04-features%20wJJ.ppt

Kallay, J. E., & Redford, M. A. (2020). Clause-initial AND usage in a cross-sectional and

    longitudinal corpus of school-age children's narratives. *Journal of Child Language*, *48*(1),

     88-109.

Lanehart, S. L. (2001). *Sociocultural and historical contexts of African American English* (1st

    ed.). John Benjamins Pub. Co.

Lee, L. L., & Canter, S. M. (1971). Developmental sentence scoring: a clinical procedure for

    estimating syntactic development in children's spontaneous speech. *The Journal of*

    Speech and Hearing Disorders, *36*(3), 315–340. https://doi.org/10.1044/jshd.3603.315

Lee-James, R., Johnson, L., McBride, C., Laks, L., & Saiegh-Haddad, E. (2022). Impact of

    nonmainstream dialect use in language assessment with young African American

    English-speaking children. In *Handbook of Literacy in Diglossia and in Dialectal*

    Contexts (pp. 425–449). Springer International Publishing.

    https://doi.org/10.1007/978-3-030-80072-7_18

MacWhinney, B. (1991). *The CHILDES project: Tools for analyzing talk*. Lawrence Erlbaum
    Associates, Inc.

Marencin, N. C., Edwards, A. A., & Terry, N. P. (2024). African American preschoolers'
    performance on norm-referenced language assessments: Examining the
    effect of dialect density and the use of scoring modifications. *Language,*
    Speech & Hearing Services in Schools, *55*(3), 918–937.

McGregor, K. K., Williams, D., Hearst, S., & Johnson, A. C. (1997). The use of contrastive
    analysis in distinguishing difference from disorder: A tutorial. *American Journal of*
    Speech-Language Pathology, *6*(3), 45–56. https://doi.org/10.1044/1058-0360.0603.45

Morgan, M. (1994). Theories and politics in African American English. *Annual Review of*
    Anthropology, *23*(1), 325–345. https://doi.org/10.1146/annurev.an.23.100194.001545

Morgan, P. L., Farkas, G., Hillemeier, M. M., Mattison, R., Maczuga, S., Li, H., & Cook, M.
    (2015). Minorities are disproportionately underrepresented in special education:
    Longitudinal evidence across five disability conditions. *Educational Researcher*,
    44(5), 278–292. https://doi.org/10.3102/0013189X15591157

Murray, B. K., Rhodes, K. T., & Washington, J. A. (2024). The growth of complex syntax in
    school-age African American children who speak African American English. *Journal*
    of Speech, Language, and Hearing Research, *67*(6), 1832–1849.
    https://doi.org/10.1044/2024_JSLHR-23-00494

Nicolopoulou, A., Ilgaz, H., & Shiro, M. (2021). "And they had a big, big, very long fight:" The
    development of evaluative language in preschoolers' oral fictional stories told in a peer-
    group context. *Journal of child language*, *49*(3), 522-551.

Nelson, N. W., & Hyter, Y. D. (1990). How to use Black English Sentence Scoring (BESS) as a

    tool of non-biased assessment. A short course presented at the American

    Speech-Language- Hearing Association, Seattle, WA, United States.

Oetting, J., Cantrell, J., & Horohov, J. (1999). A study of specific language impairment (SLI) in

    the context of non-standard dialect. *Clinical Linguistics & Phonetics*, *13*(1), 25–44.

    https://doi.org/10.1080/026992099299220

Oetting, J. B., Lee, R., & Porter, K. L. (2013). Evaluating the grammars of children who speak

    nonmainstream dialects of English. *Topics in Language Disorders, 33*(2), 140–151.

    https://doi.org/10.1097/TLD.0b013e31828f509f

Overton, C., Baron, T., Pearson, B. Z., & Ratner, N. B. (2021). Using free computer-assisted

    language sample analysis to evaluate and set treatment goals for children who speak

    African American English. *Language, Speech & Hearing Services in Schools*, *52*(1),

    31–50. https://doi.org/10.1044/2020_LSHSS-19-00107

Parveen, S., & Santhanam, S. P. (2021). Speech-language pathologists' perceived

    competence in working with culturally and linguistically diverse clients in the United

    States. *Communication Disorders Quarterly*, *42*(3), 166–176.

    https://doi.org/10.1177/1525740120915205

Pavelko, S. L., Owens Jr, R. E., Ireland, M., & Hahs-Vaughn, D. L. (2016). Use of language

    sample analysis by school-based SLPs: Results of a nationwide survey. *Language,*

    speech, and hearing services in schools, *47*(3), 246-258.

Pearson, B. Z. (2004). Theoretical and empirical bases for dialect-neutral language

    assessment: Contributions from theoretical and applied linguistics to communication

    disorders. *Seminars in Speech and Language*, *17*(1), 13–25.

    https://doi.org/10.1055/s-2004-824822

Pearson, B. Z. (2018). The legacy of the Diagnostic Evaluation of Language Variation (DELV).

    TOM and grammar (Thoughts on Mind and grammar), *41*.

Pearson, B. Z., Conner, T., Jackson, J. E., Jaswal, V. K., Eccles, J., & Akhtar, N. (2013).

    Removing obstacles for African American English-speaking children through greater

    understanding of language difference. *Developmental Psychology*, *49*(1), 31–44.

    https://doi.org/10.1037/a0028248

Pearson, B. Z., Jackson, J. E., & Wu, H. (2014). Seeking a valid gold standard for an

    innovative, dialect-neutral language test. *Journal of Speech, Language, and Hearing

    Research*, *57*(2), 495–508. https://doi.org/10.1044/2013_JSLHR-L-12-0126

Pearson, B. Z., Velleman, S. L., Bryant, T. J., & Charko, T. (2009). Phonological milestones for

    African American English-speaking children learning mainstream American English as

    a second dialect. *Language, Speech & Hearing Services in Schools*, *40*(3), 229–244.

    https://doi.org/10.1044/0161-1461(2008/08-0064)

Privette, C., & Saechao, K. R. (2025). Black languaging IS translanguaging: We not just

    talkin bout it, we bout it bout it. *Perspectives of the ASHA Special Interest Groups*,

    10(1), 64–73. https://doi.org/10.1044/2024_PERSP-23-00297

Quach, W., & Tsai, P. T. (2017). Preparing future SLPs for the clinical world of

    cultural-linguistic diversity. *Perspectives of the ASHA Special Interest Groups*, *2*(14),

    82–102. https://doi.org/10.1044/persp2.SIG14.82

Ramos, M. N., Collins, P., & Peña, E. D. (2022). Sharpening our tools: A systematic review to identify diagnostically accurate language sample measures. *Journal of Speech, Language, and Hearing Research, 65*(10), 3890–3907. https://doi.org/10.1044/2022_JSLHR-22-00121

Robinson, G. C., & Norton, P. C. (2019). A decade of disproportionality: A state-level analysis of African American students enrolled in the primary disability category of speech or language impairment. *Language, Speech & Hearing Services in Schools*, *50*(2), 267–282. https://doi.org/10.1044/2018_LSHSS-17-0149

Seymour, H. N. (2004). The challenge of language assessment for African American English-speaking Children: A historical perspective. *Seminars in Speech and Language*, *17*(1), 3–12. https://doi.org/10.1055/s-2004-824821

Seymour, H. N., Bland-Stewart, L., & Green, L. J. (1998). Difference versus deficit in child African American English. *Language, Speech & Hearing Services in Schools*, *29*(2), 96–108. https://doi.org/10.1044/0161-1461.2902.96

Seymour, H. N., & Seymour, C. M. (1977). A therapeutic model for communicative disorders among children who speak Black English vernacular. *The Journal of Speech and Hearing Disorders*, *42*(2), 247–256. https://doi.org/10.1044/jshd.4202.247

Shifrer, D., Muller, C., & Callahan, R. (2011). Disproportionality and learning disabilities: Parsing apart race, socioeconomic status, and language. *Journal of Learning Disabilities, 44*(3), 246–257. https://doi.org/10.1177/0022219410374236

Smitherman, G., & Baugh, J. (2002). The shot heard from Ann Arbor: Language research and public policy in African America. *Howard Journal of Communication*, *13*(1), 5-24.

Stockman, I. J. (2010). A review of developmental and applied language research on African

    American Children: From a deficit to difference perspective on dialect differences.

    Language, Speech & Hearing Services in Schools, *41*(1), 23–38.

    https://doi.org/10.1044/0161-1461(2009/08-0086)

Voniati, L. (2015). School based speech and language therapists' perceptions of MLU-w and its

    use. *Science Journal of Education*, *3*(6), 119-125.

Williams, R. L. (1997). The Ebonics controversy. *Journal of Black Psychology*, *23*(3), 208–214.

    https://doi.org/10.1177/00957984970233002

Weismer, S. E., Venker, C. E., Evans, J. L., & Moyle, M. J. (2013). Fast mapping in late-

    talking toddlers. *Applied Psycholinguistics, 34*(1), 69–89.

    https://doi.org/10.1017/S0142716411000610

Woods Jr, I. L., & Graves Jr, S. L. (2021). The fortieth anniversary of Larry P. v. Riles:

    Cognitive assessment and Black children. *Contemporary School Psychology*, *25*(2), 137-

    139.