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**AFRICAN AMERICAN ENGLISH-SPEAKING CHILDREN'S
JUDGMENTS OF GRAMMATICALITY: EFFECTS OF
CLINICAL STATUS AND GRAMMATICAL STRUCTURES**

A Dissertation

Submitted to the Graduate Faculty of
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Communication Sciences and Disorders

by

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Lori E. Vaughn

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Being confident of this very thing, that He who has begun a good work in you will perform *it* until the day of Jesus Christ

-- Philippians 1:6

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LIST OF ACRONYMS

AA	African American
AAE	African American English
AM	Aged-Matched
DELV-NR	Diagnostic Evaluation of Language Variation – Norm Referenced Test
DELV-ST	Diagnostic Evaluation of Language Variation – Screening Test
DLG	Developmental Language Delay
EOI	Extended Optional Infinitive
GAE	General American English
GFTA-2	Goldman Frisloe Test of Articulation – 2 nd Edition
GJ	Grammaticality Judgment
Leiter-R	Leiter International Performance Scale-Revised
MLU	Mean Length of Utterances
NMFD	Nonmainstream Form Density
PPVT-4	Peabody Picture Vocabulary Test - 4 th Edition
PTONI	Primary Test of Nonverbal Intelligence
SALT	Systematic Analysis of Language Transcripts
SLI	Specific Language Impairment
SLP	Speech-Language Pathologist
SWE	Southern White English
TD	Typically Developing
TEGI	Test of Early Grammatical Impairment
TOLD:P-3	Test of Language Development: Primary-3

ABSTRACT

African American English (AAE)-speaking children's ability to judge the grammaticality of sentences was evaluated by their clinical status and grammatical structure. The study originated from a need to understand more about the tense and agreement systems of AAE speakers with specific language impairment (SLI) relative to their typically developing (TD) AAE-speaking peers. Tense and agreement forms are typically excluded from the assessment and treatment of children who speak AAE in fear of misinterpreting a dialect difference as a language disorder. As a result, limited information exists about the tense and agreement systems of AAE-speaking children.

The data were archival and from 91 AAE-speaking kindergartners (SLI = 34; TD = 57). The children's judgments were elicited from the *Rice/Wexler Test of Early Grammatical Impairment* (Rice & Wexler, 2001). This test was designed for General American English (GAE). Given this, I first examined the items using A' values and GAE as the dialect referent. Then I re-analyzed the data using percentages of acceptability and AAE as the dialect referent.

Not surprisingly, the A' values based on GAE did not differ by clinical group. Although both groups earned higher A' for the control forms than the zero forms, both groups performed at chance level on the zero forms. When AAE was used as the dialect referent and percentages of acceptability were examined, clinical differences were found, with the TD group accepting the AAE-appropriate overt forms at higher percentages than the SLI group. The TD group also showed greater discernment within their acceptability percentages when AAE-appropriate forms were compared to AAE-inappropriate forms, although both groups accepted the former forms at higher percentages than the latter.

The findings indicate that AAE-speaking children with SLI are not as discerning as TD controls when asked to judge the grammatical acceptability of AAE-appropriate tense and agreement forms and when asked to judge the acceptability of AAE-appropriate and inappropriate forms. These findings contribute to the growing literature base that shows tense and agreement weaknesses in AAE-speaking children with SLI and calls for the inclusion of tense and agreement structures in dialect-appropriate assessments and treatments of SLI within AAE.

CHAPTER 1. INTRODUCTION

Specific language impairment (SLI) is a type of developmental language disorder that impacts the language skills of children who present with no known neurological, nonverbal intelligence, hearing, or vision impairment (Leonard, 2014). The study of SLI in children is not a novel topic in the field of speech-language pathology. However, this clinical condition has been historically studied within the dialect(s) of General American English (GAE) and other mainstream varieties of other languages. Studies of the SLI profile in nonmainstream dialects of English and other languages are mostly nonexistent, although a growing number of SLI studies can now be found for the dialect of African American English (AAE) and to a lesser extent Southern White English (SWE) (Oetting et al., 2019). The current study focuses on the SLI grammar profile in AAE.

In recent years, a debate has emerged regarding the use of the term SLI to describe children with this clinical condition. The debate was fueled in part by a special volume devoted to the SLI label (Ebbles, 2014), which led to a Delphi consensus study (Bishop et al., 2016), a collection of commentaries about the Delphi study (Bishop et al., 2017), conference panels (e.g., Owen van Horn et al., 2018), opinion papers which were followed by letters to the Editor (e.g., Bishop, 2020; McGregor et al., 2020; Rice, 2020a; 2020b), and a featured article in *The ASHA Leader*, a professional newsmagazine with a readership of 191,544 speech-language pathologists and audiologists (Volkers, 2018a; 2018b). Within these works, Bishop and others argue against the term SLI and in favor of the term, developmental language disorder. Currently, the field remains mixed as to the preferred term, and neither term is recognized by DSM-5 (American Psychiatric Association [APA], 2013) or used within the public schools as a special education classification (Reilly et al., 2014). Given that the current study is based on archival data, and the

children with language impairments were originally classified as SLI, this term will be used throughout this dissertation.

A study of the SLI grammar profile in child AAE requires a good understanding of typically developing (TD) children's acquisition of AAE. Focusing on past tense as an illustrative case and using data from 63 TD children, Lee and Oetting (2014) showed that child AAE shares many of the same grammatical forms as child GAE, including the use of mainstream overt *-ed* forms (e.g., *liked*) to encode regular past tense. However, children and adults who speak AAE can also mark this same structure with dialect-specific nonmainstream overt forms (e.g., *likeded*, *had liked*, *had like*) and nonmainstream zero forms (e.g., *like*∅). The current study focuses on AAE-speaking children's judgments of various grammatical forms, including zero forms, so it is important to understand the nature of these forms in AAE and the historical treatment of these forms within clinical practice.

Zero forms do not carry phonetic content perceived by the listener in the surface structure of an utterance. All languages and all dialects of a language, including AAE and GAE, have zero forms; these forms can be used categorically (i.e., 100% of the time), as in the past tense marking of the verb, *cut*∅, or probabilistically (i.e., more likely in some contexts than others but less than 100% of the time), as in the use of relative clause markers when they refer to the object of the relative clause (e.g., *I wore the hat* ∅ *she gave me* vs. *I wore the hat* *that* *she gave me*). The term zero form is from the field of linguistics, and it does not necessarily imply that anything is omitted or dropped in the logical form or underlying grammatical representation of the utterance (Givón, 2017 [also referred more generally as phonologically silent forms]; Guasti, 2002, pg. 152). Although zero forms are often referred to by various names, including omissions and

dropped forms, these terms are avoided in this dissertation as they reflect the application of deficit terminology to describe the dialect of AAE (Hamilton, 2020).

In AAE, the zero forms of some structures, like past tense are difficult to interpret clinically, because the grammar of AAE allows zero forms at least some of the time (Stockman, 2010; Washington & Craig, 1994; Wolfram & Ward, 2006). This finding contrasts with the grammar of GAE, where the zero form for past tense and other morphemes occurs infrequently after TD children are five or six years of age (Gladfelter & Leonard, 2013; Rice & Wexler, 1996; 2001). As a result, a GAE-speaking child's production of zero forms can be used as a clinical marker of SLI at or after the age of five years. In AAE, the production of zero forms cannot be so easily used as a clinical a marker of SLI because children with and without SLI as well as adults who speak AAE produce these forms.

Seymour, Bland-Stewart, and Green (1998) refer to the zero forms in AAE as creating a diagnostic conundrum for clinicians because they are difficult to interpret. The 1983 American Speech-Language-Hearing Association's (ASHA) position statement on social dialects also notes the difficulty of interpreting nonmainstream dialect forms and encourages clinicians to avoid misinterpreting a child's dialect difference from GAE as a language disorder. To quote ASHA, "accurate assessments of communicative disorders are to distinguish between those aspects of linguistic variation that represent the diversity of the English language from those that represent speech, language, and hearing disorders" (ASHA, 1983; p. 2). Since the 1980s, ASHA's position statement has supported a dialect vs. disorder approach within clinical practice (Cheng, 1997; Kritikos, 2003; Seymour & Seymour, 1977).

Using a dialect vs. disorder approach, Seymour and colleagues encourage clinicians to focus on grammar structures in AAE that do not contrast across dialects, and they refer to these

forms as non-contrastive (Seymour et al., 1998; Seymour & Pearson, 2004; Bland-Stewart, 2005; Pearson et al., 2013; Pearson et al., 2014). An example of a non-contrastive structure is the present progressive *-ing* (e.g., *walking*). In AAE, GAE, and other English dialects, present progressive contexts are often marked with the overt *-ing* or *-in* form 90% of the time, especially when contractions (e.g., *gonna*, *wanna*), and the dialect-specific form *I'ma* (e.g., *I'ma walk*) are excluded from the calculation (Brown, 1973; Vaughn & Oetting, 2018). To help clinicians focus on the non-contrastive structures of English, Seymour and colleagues developed the *Diagnostic Evaluation of Language Variation: Screening Test* (DELV-ST) (Seymour et al., 2003a) and *Diagnostic Evaluation of Language Variation: Norm-Referenced* (DELV-NR) (Seymour et al., 2005). The Risk subtest of the DELV-ST and the DELV-NR target only the non-contrastive structures of English. These tools allow clinicians to focus on grammar structures without running the risk of misinterpreting a child's dialect difference from GAE as a disorder. However, because the contrastive structures of AAE are not targeted within these tools, clinicians who use them learn nothing about the AAE-speaking child's use of these structures.

The dialect vs. disorder approach has also led many speech-language pathologists to modify their scoring of zero forms and dialect-specific overt forms when testing children who speak AAE and other nonmainstream dialects of English. Modified scoring procedures attempt to remove testing biases against nonmainstream dialects by counting the zero forms and dialect specific overt forms as dialect-appropriate and correct. Findings from Hendricks and Adolf (2017) and Oetting et al. (2019; 2021), however, have shown that modified scoring systems lead to low levels of diagnostic sensitivity (i.e., under-identification) when applied to AAE-speaking children with language impairments. Modified scoring systems also lead clinicians to learn nothing about AAE-speaking children's use of their zero forms and dialect-specific overt forms.

For this reason and others that will be discussed in the next chapter, this dissertation does not follow the dialect vs. disorder framework. Instead, it uses an alternative, disorder within dialect framework advocated by Oetting and colleagues (Oetting et al., 2016; Oetting, 2018; Oetting et al., 2019; Oetting et al., 2021). This methodology seeks to better understand the clinical markers of SLI within the context of AAE and without reference to GAE. A clinical marker approach was first introduced by Rice, Wexler, and Cleave (1995) for the dialect of GAE, and it has been successfully applied to a variety of languages (Leonard, 2014; 2017), bilingual learning contexts (Bedore et al., 2018), and the dialects of AAE and SWE (e.g., Garrity & Oetting, 2010; Oetting et al., 2016; Oetting et al., 2019; Oetting & McDonald, 2001; Rivière et al., 2018; Hendricks et al., 2019). In AAE, SWE, and GAE, clinical marker studies have also identified similar grammatical structures as difficult for children with SLI when they are compared to same dialect-speaking TD controls (Oetting et al., 2019; Oetting et al., 2021). The current dissertation further explores these grammatical structures, even though they are considered contrastive grammar structures in AAE. Specifically, the structures examined in this dissertation encode tense and agreement and include copula and auxiliary BE (i.e., *am, is, are*), *regular* verbal-s (e.g., *sees, plays*), and regular past tense (e.g., *mowed*). In keeping with other clinical marker studies, I also examined present progressive *-ing* as a control structure. Unlike the other structures and as noted earlier, this structure is non-contrastive across dialects, and it also has not been found to differentiate children with and without SLI in AAE (Oetting & McDonald, 2001).

Finally, the current study focuses on children's grammaticality judgments of the above listed grammar structures using an existing dataset from children who had been studied previously (McDonald et al., 2018; McDonald & Oetting, 2019; Oetting et al., 2016; Oetting et

al., 2019; Oetting et al., 2021). In previous studies of these children, tense and agreement structures have been examined with language samples (Oetting & McDonald, 2001; Oetting et al., 2021), elicitation probes (Garrity & Oetting, 2010; Oetting et al., 2019), and a sentence recall task (e.g., Oetting et al., 2016). Others who have studied children's use of AAE have examined differences across spoken and written contexts (e.g., Craig & Washington, 2000) and as a function of children's ages (Craig & Washington, 2004; Newkirk, 2010; Terry et al., 2012). Although these tasks have provided invaluable child production data, less is known about AAE-speaking children's comprehension of grammatical structure. Grammatical judgment tasks allow for an examination of children's comprehension abilities. Grammatical judgment tasks involving tense and agreement structures have also been found to differentiate children with and without SLI in GAE (Rice et al., 1999), so it is reasonable to ask whether this type of task can be used to differentiate children with and without SLI in AAE.

The grammaticality judgment data explored in the current study were elicited using a subtest of the *Rice/Wexler Test of Early Grammatical Impairment* (TEGI) (Rice & Wexler, 2001). These data were collected as part of a larger study on the grammatical profiles of children with and without SLI in nonmainstream dialects of English (e.g., Oetting et al., 2016; Oetting et al., 2019; Oetting et al., 2021), but they have not been previously examined. Grammaticality judgments require the ability to access, reflect upon, and manipulate linguistic content (Varghese & Venkatesh, 2012). Awareness of grammaticality in sentences is concerned with the identification of dialect-appropriate and inappropriate productions. Examples of ungrammatical and grammatical sentences for the dialect of GAE are presented in this document on the following page (7) for clarity.

Grammatical	Ungrammatical
“He is behind the box.”	“The bear likes the sweet honey.”
“He behind the box.”	“The bear like the sweet honey.”
“He is mad.”	“She jumped in the pool.”
“He am mad.”	“She jump in the pool.”

In the first set of sentences, the tense and agreement structures are produced as expected for the dialect of GAE. In the second, the same structures are either zero marked in a way that is inappropriate for GAE or produced with a GAE-inappropriate overt form.

For the current dissertation and using data from the TEGI, AAE-speaking children’s ability to judge the grammaticality of sentences with tense and agreement structures was examined by their clinical status (SLI vs. TD) to see if this task was difficult for children with SLI in AAE as it is in GAE. In addition, I examined whether the children’s judgments of grammatically differed depending on the type of tense and agreement structure present in the sentence. Multiple tense and agreement structures (e.g., copula BE, auxiliary BE, past tense, verbal -s) are often included in grammaticality judgment tasks. Fujiki et al. (1987) and Rice et al. (1999) note that a child’s ability to make grammaticality judgments is related to their production of grammatical structures. As previously noted, and further reviewed in the next chapter, AAE permits the above listed grammar structures to be marked in three ways: mainstream overt forms (e.g., *They were happy*), dialect-specific nonmainstream overt forms (e.g., *They was happy*), and nonmainstream zero forms (e.g., *He ∅ happy*). In addition, AAE-speaking children produce different relative frequencies of these various forms as a function of the tense and agreement structure. Given this feature of AAE, children who speak this dialect may have different

grammaticality judgements based on the relative frequency at which they produce mainstream overt and nonmainstream overt forms and zero forms for the different structures.

As background for the study, the literature review is organized into three sections. The first section reviews studies that examined children's acquisition and use of tense and agreement grammar structures in AAE. This literature shows that TD AAE-speaking children learn to use these structures in ways that align with adult's use of AAE. The second section focuses on studies that compared AAE-speaking children with and without SLI, with an emphasis placed on studies of tense and agreement. These studies show that overt forms of these grammar structures are produced at lower percentages by AAE-speaking children with SLI than by AAE-speaking TD controls. Finally, in the third section, I review studies of grammaticality judgment tasks and examine studies from both GAE and AAE child speakers. The chapter concludes with a presentation of the research questions that guided the study.

CHAPTER 2. LITERATURE REVIEW

Studies of Grammatical Morphology in AAE

Beyond GAE, AAE is one of the most studied dialects of American English (Green, 2002; Rickford, 1999). Within the literature, significant strides have been made in the research applied to AAE child language productions, with a considerable emphasis dedicated to the production of nonmainstream forms allowed in the dialect to express morphology and syntax (Baratz, 1969; Craig & Washington, 1994; Oetting & McDonald, 2002; Stockman & Vaughn-Cooke, 1982). The rates of nonmainstream AAE forms produced by a speaker are often related to external factors, such as amount of formal schooling, social economic status (SES), type of community (Debose, 1992; Rickford, 1999; Washington & Craig, 1994; 2002). Within the literature, however, scholars argue that no matter the external factors, child speakers of AAE will differ in their use of morphology and syntax from their GAE-speaking counterparts.

Historically, children's acquisition of grammatical structures has focused on Roger Brown's 14 morphemes (Brown, 1973; de Villiers & de Villiers, 1973). Table 2.1 lists these 14 morphemes and the ages at which Brown estimated them to be mastered by GAE-speaking children. All the tense and agreement structures targeted in the current study are included in Brown's 14. These early studies and many others have focused almost exclusively on child speakers of GAE (Lahey et al., 1992; Paul, 1993; Steckol & Leonard, 1979). This early work also established 90% as the criterion by which to determine GAE-speaking children's mastery of these 14 morphemes. This criterion reflects the percentage at which a child produces a morpheme in contexts that require the morpheme in GAE. As an example, if a child produced the following three utterances, *He is walking*, *She is walking*, and *She Ø walking*, the child's percent

Table 2.1. Age of Mastery for Brown's 14 Morphemes

Brown's 14 Grammatical Morpheme	Example	Age in Months
Present Progressive: /ing	<i>Barking</i>	27 - 30
Prepositions: in	<i>In</i> the house	27 - 30
Prepositions: on	<i>On</i> the floor	27 - 30
Plural: /s	Two dogs	27 - 30
Irregular Past Tense	He <i>drank</i> his juice	31 - 34
Possessive: /z	Christie's shirt	31 - 34
Copula (uncontractible): 's	This <i>is</i> my sock	31 - 34
Articles; a/an/the	<i>A</i> dog, <i>An</i> apple, <i>The</i> cat	35 - 40
Regular Past Tense: /ed	I <i>jumped</i>	35 - 40
Regular Verbal -s	He likes to swim	35 - 40
Irregular Verbal -s	He <i>has</i> a dog	40+
Auxiliary (uncontractible)	<i>Is</i> she walking?	40+
Copula (contractible)	She's a cheerleader	40+
Auxiliary (contractible)	She's walking	40+

of auxiliary *is* would be 67%, whereas a child's percent of use would be 100% if these same three utterances were produced as *He is walking*, *She is walking*, and *She's walking*. As Roger Brown (1973) and many others documented, as GAE-speaking children age, their productions of Brown's 14 morphemes increase to at or above 90%, which is the rate GAE-speaking adults produce these morphemes.

In contrast to GAE, the adult dialect of AAE allows overt forms and zero forms for many morphemes, including many of Roger Brown's 14 morphemes (Fasold, 1972; Green, 2002; Labov, 1969; Bloomquist, J., Green, L. J., & Lanehart, S. L. 2015; Rickford, 1999). Multiple studies have shown that children learning AAE produce their overt forms and zero forms in ways that are consistent with adult AAE at the onset or very early in development (Horton-Ikard & Weismer, 2007; Newkirk-Turner et al., 2014; Newkirk-Turner & Green, 2016). Studies also have shown that as AAE-speaking children age, their use of overt forms and zero forms remain dialect-appropriate (Oetting et al., 2021; Seymour et al., 1998; Seymour & Seymour, 1977; Stockman, 1996; Washington & Craig, 1994; 2004). Recall that the structures examined in the current study are copula and auxiliary BE (i.e., *am, is, are*), regular verbal-s (e.g., *sees, plays*), and regular past tense (e.g., *mowed*). Recall also that these structures, which all encode tense and agreement, have been selected because they are well-established clinical markers of SLI in the dialect of GAE (Leonard, 1997; Rice & Wexler, 1996). They are also the structures targeted in the TEGI, the test that was used to collect the children's data for this study.

In the studies reviewed next, my focus is on AAE form use by TD children. If children who spoke other dialects or AAE-speaking children with SLI were included in the studies, I did not include their findings within this section. The findings within these studies are typically reported as percent of overt forms. As will be evident, some authors have calculated percent overt marking using only the mainstream overt forms (e.g., *They are walking* and *They're walking*), whereas others have calculated percent overt marking using both the mainstream overt forms and nonmainstream overt forms (e.g., those just listed as well as dialect specific forms such as *They was walking*).

Roy et al. (2013) examined language samples in a study of copula and auxiliary BE. Their AAE-speaking TD participants were twelve 4-year-olds and twelve 6-year-olds. Given that the adult AAE literature has shown that overt marking is affected by various linguistic constraints (i.e., contexts), Roy et al. (2013) examined the children's percentages of overt marking (mainstream and nonmainstream forms combined) by these constraints. The constraints were: person, number, and tense, (e.g., *am, is, are, was/were*), contractibility (e.g., contractible: *They are walking and They're walking*; uncontractible: *This is being put right here*) and grammatical function (e.g., copular functions: *Judy is happy*; auxiliary functions: *Judy is playing*).

Results showed variability in the percentages of overt marking for the various BE structures. Specifically, the children's percentages of overt *are* (4-year-olds = 34%; 6-year-olds = 31%) and overt *is* (4-year-olds = 38%; 6-year-olds = 57%) were lower than those of overt *am* (4-year-olds = 100%; 6-year-olds = 91%) and overt *was/were* (4-year-olds = 94%; 6-year-olds = 94%). Effects were also observed for contractibility (contractible 4-year-olds = 56%; 6-year-olds = 53% < uncontractible 4-year-olds = 62%; 6-year-olds = 76%) and grammatical function (copular 4-year-olds = 62%; 6-year-olds = 72% > auxiliary 4-year-olds = 55%; 6-year-olds = 57%). Interestingly, no differences were detected when the children's percentages of overt marking were examined by their age (six vs. four years). The lack of an age effect indicates that the children's rates of overt marking for the various BE forms reflected the dialect they were learning rather than patterns of development.

Berry and Oetting (2017) found results that were comparable to those of Roy et al. (2013). Their study examined auxiliary BE (i.e., *is, are, and was/were*), and they also combined mainstream and nonmainstream overt forms in calculations of the children's overt marking. Data

included 38 AAE-speaking children with and without Gullah/ Geechee heritage. Gullah/Geechee is spoken by descendants of Africans from West Africa. For this study, the AAE speakers with Gullah/Geechee heritage were from rural South Carolina and those without this heritage were from rural Louisiana. For the language sample data of the AAE-speakers without Gullah/Geechee heritage, percentages of overt marking were as follows: *am* (91%), *is* (52%), *are* (31%) and *was/were* (95%). Variable percentages of overt marking across the various BE forms are consistent with those of Roy et al. (2013) as well as other studies of TD children who speak AAE (Garrity & Oetting, 2010; Newkirk-Turner et al., 2014).

In an exploration of regular past tense, Pruitt and Oetting (2009) examined data from 45 AAE-speaking children, aged 5 to 6 years. Data from 30 of the 45 participants (5-year-olds = 15; 6-year-olds = 15) were classified as TD and from a middle-income background. The data came from language samples and elicitation probes. Again, mainstream and nonmainstream overt forms were combined in calculations of overt forms. Results from the language samples indicated that most (78%) of the children's regular past tense productions were overtly marked (e.g., walked) but the 5-year-olds overtly marked regular past tense forms at a lower percentage (66%) than the 6-year-olds (88%). In addition, the 5-year-olds' use of regular past tense (66%) in language samples increased to (85%) within the elicitation probes. The 6-year-olds demonstrated a similar pattern of task effects as the five-year-olds (88% in language samples vs. 94% during the elicitation probes).

Cleveland and Oetting (2013) studied AAE-speaking children's use of verbal-*s* in language samples. Data from 57 children were examined. Presented is the language sample data of the 12 AAE-speaking children identified as TD. Only mainstream forms of verbal-*s* were included in calculations of overt forms; this decision was based on a separate analysis that found

nonmainstream overt forms to be rare to non-existent in the samples. Results from the study were that the AAE-speaking children overtly marked verbal -s at a very low percentage ($M = 21\%$). In other words, nonmainstream zero marking occurred nearly 80% of the time by the TD children. Finding very low rates of overt marking for verbal -s is consistent with the adult AAE literature (Fasold, 1972).

Newkirk-Turner and Green (2016) also investigated verbal -s marking by 26 TD AAE-speaking children, aged three to six years. The children were separated into three groups: three-year-olds, four-year-olds, and five- and six-year-olds. Verbal -s marking was examined within two tasks: sentence repetition and story retell, and results were reported as the percentage of zero forms rather than percentage of overt form. The authors also did not specify whether nonmainstream overt forms were included within their analyses. Results showed that the overall mean percentage of zero verbal -s forms was relatively high and consistent across the two tasks: repetition: $M = 69\%$ and story retell: $M = 69\%$. Analyses of variance also indicated that percentages of zero forms differed by the children's ages: 3-year-olds (77% zero or 23% overt), 4-year-olds (72% zero or 28% overt), and 5- and 6-year-olds (54% zero or 46% overt). Post hoc analysis indicated that the age effect was related to differences between the 3-year-old group and the 5- and 6-year-old group.

Newkirk-Turner and Green (2021) continued their analysis of verbal-s with a detailed study of four AAE-speaking TD children, aged 3- to 5-years. Participants (males = 3; female = 1) in this study performed three tasks: sentence repetition, story retell, and a 20- to 25-min language sample. The results showed that the 5-year-old female produced the lowest percentage of zero forms in each task; sentence repetition (16%), story retell (65%), and language sample (63%). The most comparable percentages of zero marking across the four children were noted in

Table 2.2. Mean Percentages (SD) of Zero Marking as a Function of Age and Task in Newkirk and Green (2016)

	3-year-olds	4-year-olds	5- and 6-year-olds
Sentence Imitation Tasks	77 (13)	72 (20)	54 (24)
Story Retell Tasks	80 (22)	71 (24)	53 (25)

Note. M(SD)

the language sample task (63% - 87%). In addition, the sentence repetition task had the lowest percentage of zero marked forms (16% - 65%) than any other task administered. The study showed that various types of tasks produce different percentages of zero forms and overt forms; however, overt forms appeared to be relatively less frequent for verbal -s than for other grammatical structures in AAE. Low percentages of overt forms for verbal -s was commensurate with Newkirk-Turner and Green (2016) study and the study by Cleveland and Oetting (2013).

Finally, Oetting et al. (2019) examined 70 AAE-speaking children's marking of various tense and agreement grammar structures using elicitation probes. Thirty-five of the AAE-speaking children were classified as TD, and all structures examined in the current dissertation were included. For the 35 AAE-speaking TD children, mainstream overt forms were produced at the following percentages: *is* = 76%; *are* = 54%, regular verbal -s = 36% and regular past tense = 63%. This study, like the others previously reviewed, showed AAE-speaking TD children to produce percentages of overt forms (and by extension zero forms) that vary by the grammatical structure examined. Restated and most relevant for the current dissertation, the study showed that overt forms in AAE are produced relatively more frequently for *is* and regular past tense than for *are* and verbal -s.

Based on the findings of the reviewed studies, AAE-speaking children produce overt and zero marked forms in dialect-appropriate manners, and their percentages of overt forms (and zero forms) vary across grammatical structures. These findings support the assertion that percentages of overt marking and zero marking are structure-specific in child AAE.

Studies of AAE-Speaking Children with and without SLI

Specific language impairment (SLI) is a developmental language disorder demonstrated by significant deficits in receptive and expressive language abilities that are not caused by low cognitive abilities, hearing impairments, or neurological damage (Leonard, 1997; Plante, 1998; Stark & Tallal, 1981; Tomblin et al., 1997). Research has shown that early diagnosis and treatment of SLI can reduce a child's risk for delays in literacy (Mackie & Dockrell, 2004). Nevertheless, the identification of SLI in culturally and linguistically diverse groups can be difficult. Prevalence rates of SLI has been reported as 7.4% in English-speaking kindergartners (Tomblin et al., 1997); however, these authors also report racial/ethnic differences in prevalence rates, with the highest prevalence rates amongst Native American children (12%) and African American children (11%), followed by Hispanic/Latino children (8%) and White children (7%). Regarding these prevalence rates, Tomblin et al. (1997) noted that the variables of race and ethnicity were correlated to the children's socio-economic levels which were also correlated to the children's standardized test scores. The authors further noted that the standardized tests they used to identify children with SLI were based on norms from primarily GAE-speaking children. As a result, tests that the authors used to measure the children's language abilities and identify those with SLI may not have been appropriate for the children who spoke AAE.

Child speakers of various dialects and languages who present with SLI demonstrate overall language deficits, however difficulties with grammatical morphology are often described

as a hallmark feature of the SLI condition (Bedore & Leonard, 2001; Cleave & Rice, 1997; Leonard, 1997; Leonard et al., 1992; Redmond & Rice, 2001; Rice et al., 2000). In this section and focusing on the structures examined in the current dissertation, AAE studies of children with and without SLI are reviewed.

Garrity and Oetting (2010) examined auxiliary BE production by 30 AAE-speaking children, aged four to six years. Ten of the children were classified as SLI, 10 were classified as age-matched TD, and 10 were classified as TD but younger than those with SLI. Results from the SLI and age-matched TD groups are the focus here, and the data were from language samples and elicitation probes. The study involved an analysis of auxiliary BE present in three contexts: *am* (*I am talking*), *is* (*He is walking*), and *are* (*They are singing*). The researchers found that percentages of overt auxiliary BE productions differed between those with and without SLI. Moreover, children classified as SLI overtly marked BE at lower percentages than the TD group across tasks. Presented in Table 2.3 and 2.4 are the percentages of overt marking for the three BE forms for the two groups in the two tasks.

Consistent with Roy et al. (2013) and other AAE child studies, the language sample data and the AAE SLI data for the elicitation task showed the children's percentages of overt marking of BE to vary by structure. Within the language samples, both groups overtly marked *am* at higher percentages than *is* and *are*. The AAE SLI group, but not the AAE TD group also showed this pattern of overt marking within the elicitation task. Finally, higher percentages of overtly marked BE occurred during the elicitation probes. This latter finding was like those reported by Thompson, et al (2004), Newkirk-Turner and Green (2016), and Newkirk-Turner and Green

Table 2.3. Percentages of Overtly Marked Auxiliary BE in Language Samples by Garrity and Oetting (2010)

Clinical Status	Am	Is	Are	Collapsed BE
SLI	96 (8)	21 (21)	7 (11)	24 (15)
TD	100 (0)	55 (29)	39 (34)	47 (25)

Note. M(SD)

Table 2.4. Percentages of Overtly Marked Auxiliary BE in the Elicitation Task by Garrity and Oetting (2010)

Clinical Status	Am	Is	Are	Collapsed BE
SLI	74 (40)	49 (44)	44 (48)	57 (39)
TD	70 (48)	70 (48)	70 (48)	70 (48)

Note. M(SD)

(2021), because these authors also found tasks effects in AAE-speaking children’s use of overt forms and zero forms. These results showed group differences in the marking of BE between children with and without SLI while also further showing children’s percentages of overt marking to vary by grammatical structure and task.

In Hendricks and Adolf (2020), the production of regular verbal -s and regular past tense by first and second grade students with and without SLI was examined with an elicitation task (e.g., *Today the boy is painting. Yesterday he did the same thing. Yesterday he _____*). Thirty-eight of the children (TD = 22; SLI = 16) spoke nonmainstream American English dialects (NMAE) so they are the focus here. Children classified as speakers of NMAE included AA

children (72%), in addition to children of various races (28%) who were classified as NMAE speakers. Descriptive findings from the elicitation task are presented in Table 2.5.

Table 2.5. Percentages of Overtly Marked Forms by Structure and Group by Hendricks and Adolf (2020): Elicitation Probe

Clinical Status Group	Verbal -s	Regular Past Tense
TD	75.2	65.6
(n = 22)	(21.3)	(27.9)
SLI	57.6	44.6
(n =16)	(37.3)	(21.3)

Note. M(SD)

As is evident and surprising, the NMAE-speaking children produced verbal -s at relatively high percentages and at higher percentages than regular past tense. This finding was different from what has been found in previous studies. This unique finding is likely due to the sample including AAE and non-AAE speaking of nonmainstream English in the sample. The NMAE-speaking children’s mean rate of nonmainstream form use was also only 60%, which is lower than what is typically found in AAE studies (e.g., Terry et al., 2010). Nevertheless, the findings showed differences by clinical status in the percentages at which the children overtly marked both grammatical structures. For both, the AAE-speaking children with SLI produced lower percentages of overt forms than their AAE-speaking TD peers.

The earlier reviewed Oetting et al. (2019) study is also re-presented here as it included 35 AAE-speaking children classified as SLI. This study also explored three different scoring systems which varied in how mainstream overt, nonmainstream overt, and zero forms were coded. These scoring approaches were referred to as unmodified, modified, and strategic. Both the unmodified GAE-based scoring approach and the strategic AAE-based scoring approach

were relevant to the current study. The unmodified GAE-based approach calculated percentages of overt marking by dividing the sum of the children’s mainstream overt forms by the sum of all responses. The strategic AAE-based scoring approach calculated percentages of overt marking by dividing the sum of the children’s mainstream and nonmainstream overt forms by the sum of their overt forms and zero forms. Importantly, both the unmodified and strategic scoring approaches resulted in group differences between the children with and without SLI in AAE (see Table 2.6).

Table 2.6. Mean Percent Marking (SD) of Structures within Probes by Scoring Approach and Clinical Status in Oetting et al. (2019)

Structure	Unmodified		Strategic	
	SLI	TD	SLI	TD
Auxiliary BE Present (<i>is</i>)	52 (37)	76 (33)	57 (36)	83 (30)
Auxiliary BE Present (<i>are</i>)	25 (32)	54 (39)	49 (38)	72 (34)
Regular Past tense	38 (31)	63 (36)	46 (31)	70 (33)
Verbal -s	29 (32)	57 (41)	30 (32)	57 (41)

Note. M(SD). Data on *was* and *were* are not included as these are not the current study’s focus.

Finally, Oetting et al. (2021) examined the children’s marking of the same grammatical structures using language samples; however, auxiliary BE forms of *is* and *are* were produced infrequently within language samples, so they were combined into one category. The findings mirrored those of the elicitation tasks and showed both scoring approaches to yield lower percentages of overt marking for the children with SLI as compared to those in the TD group. The children’s percentages of overt marking also varied by the grammatical structure examined (see Table 2.7).

Table 2.7. Mean Percent Overt Marking (SD) of Structures in Language Samples by Scoring Approach and Clinical Status in Oetting et al., (2021)

Structure	Unmodified		Strategic	
	SLI	TD	SLI	TD
Auxiliary BE Present	26 (22)	36 (31)	28 (22)	38 (30)
Regular Past tense	58 (15)	75 (14)	73 (13)	88 (06)
Verbal -s	16 (16)	31 (26)	18 (18)	32 (26)

Note. M(SD)

In sum, at least five studies have shown that AAE-speaking children with SLI demonstrated weaknesses in grammatical morphology, resulting in percentages of overt forms that are lower than percentages produced by their AAE-speaking TD peers. These findings are notably consistent with SLI studies conducted within the dialect of GAE (Leonard, 1989; Rice & Wexler, 1996). Although TD AAE child speakers overtly mark grammatical structures differently than TD GAE child speakers, differences between children with and without SLI are also present within AAE as they are in GAE. These findings speak to the relevance of grammatical structures for differentiating children with and without SLI in AAE. The next

section reviews research that has explored the use of grammaticality judgments tasks in the dialects of GAE and AAE.

Studies of Grammaticality Judgment tasks in GAE and AAE

The ability to judge sentences as grammatical is an early elementary milestone in language development (Sutter & Johnson, 1990). As such, multiple studies have explored the use of grammaticality judgments to understand the morphosyntactic skills of young TD children (de Villiers & de Villiers, 1974; Gleitman et al., 1972), children with SLI (Miller et al., 2008; Redmond & Rice, 2001; Rice et al., 1999), and adults who are learners of a second language (McDonald, 2000). Within GAE, grammaticality judgment tasks require speakers to demonstrate an awareness of grammatical violations within their dialect. When a grammaticality judgment task is created for GAE, this leads to nonmainstream forms of AAE to be classified as grammatical violations, or errors. When GAE tests of grammaticality judgments are given to children who speak AAE, decisions about what is grammatical need to be adjusted to align with the dialect of AAE. The shift to dialects other than GAE also leads to the need to shift terminology from correct vs. incorrect to dialect-appropriate vs. dialect-inappropriate. This shift allows for discussions as to what is and is not appropriate for a dialect, including GAE and AAE, rather than a discussion about what is and is not correct in English, using GAE as the unspoken referent dialect.

Grammaticality judgment tasks are often scored using A' values (Linebarger et al., 1983). To calculate an A' , a child is asked to judge whether dialect-appropriate and dialect-inappropriate sentences are good or not so good. In other words, the task requires a two-alternative, forced-choice decision for every sentence. Perfect discrimination reflects when a child judges dialect-appropriate sentences as good and dialect-

inappropriate sentences as not so good. An A' score takes into consideration the child's ability to judge both types of sentences in a way that aligns with the dialect of his or her community. A' indices range from .5 (chance performance) to 1.00 (perfect discrimination).

Grammaticality Judgment in GAE

The following studies examined the grammaticality judgment skills of GAE-speaking children with and without SLI. Rice et al. (1999) studied the grammaticality judgments of children who had been followed longitudinally by Rice et al. (1998). The children of interest here came from two of the three groups: 21 children with SLI, aged 6.5 to 7.5 years, and 21 TD age-matched controls, aged 6.5 to 7.5 years. The task included the following types of items: GAE-appropriate clauses with overt forms of copula BE (*she is mad*), regular verbal -s (e.g., *Mary looks beautiful*), and regular past tense -ed (e.g., *he bumped his head*) and GAE-inappropriate clauses with zero forms for these same grammatical structures (e.g., *she Ø mad*, "*Mary lookØ beautiful*, and *he bumpØ his head*). These latter types of forms are produced by GAE-speaking children when they were first acquiring their dialect, but by the age of five or six years, TD children typically produce GAE-appropriate overt forms for these grammatical structures (Rice et al., 1999).

Within the Rice et al. (1999) studies, they referred to their stimuli using a theoretical framework called the Optional Infinitive stage for TD children and the Extended Optional Infinitive stage for children with SLI. This theoretical framework describes the SLI deficit as related to a particular type of difficulty with tense-related morphemes that leads to less productive use (i.e., higher rates of omissions) with these morphemes and not others, and without higher rates of errors in use (i.e., errors of commission) relative to TD controls. Table 2.8 provides examples of the items studied by Rice et al. (1999), along with the labels these authors

used to describe their items and the terms I have adopted for the current dissertation. As can be seen in the table, the GAE-inappropriate zero forms are clinical markers of SLI whereas the other two types of GAE-inappropriate forms serve as controls. The control forms are needed to ensure that the children can make grammatical judgments. The ability to judge the control forms as ungrammatical but not the clinical marker forms was predicted by Rice and colleagues (1999).

Table 2.8. Experimental Items from Rice et al. (1999)

Experimental Items	EOI Labels	Current Dissertation
He landed on the box She looks big He is a bear She is growling	Adult utterance	GAE-appropriate mainstream overt forms.
He lookØ happy now He eatØ toast He Ø brown She Ø running away	Optional infinitive	GAE-inappropriate zero forms sensitive to SLI; these are related to tense and agreement marking and reflect errors of omission in GAE.
He are mad He am coming back	Bad agreement	GAE-inappropriate overt control forms not sensitive to SLI; these reflect errors of commission in GAE.
She is cough	Dropped <i>-ing</i>	GAE-inappropriate zero control forms not sensitive to SLI; these reflect errors of omission with a morpheme not related to tense and agreement marking in GAE.

Using the new terms above, results from the Rice et al. study are presented in Table 2.9. As shown, group differences between those with SLI and the TD controls were found for the GAE-inappropriate zero forms that were predicted to be sensitive to SLI (i.e., the clinical marker forms, such as *He eatØ toast; He Ø brown*). By comparison, no differences were detected between these groups when they were asked to judge the GAE-inappropriate overt control forms

(e.g., *They is mad*) and GAE-inappropriate zero control forms (e.g., *He is walkØ*). Restated, as predicted by Rice and colleagues (1999), the children with SLI did not have difficulty judging the structures that were not predicted to be sensitive to their grammatical deficits.

Table 2.9. Group Findings from Rice et al. (1999).

GAE-inappropriate zero sensitive to SLI	GAE-inappropriate overt control not sensitive to SLI	GAE-inappropriate zero control not sensitive to SLI
SLI < TD	SLI = TD	SLI = TD

Given that the study was longitudinal, A' values were also examined at five different time periods. The TD group earned A' values of $\geq .90$ across all five time periods. This finding was consistent with other studies of grammaticality judgment conducted with TD children who speak mainstream dialects of English (Karanth & Suchitra, 1993; Varghese & Venkatesh, 2012). In contrast, the SLI group demonstrated minimal improvement in their A' values, with their A' values ranging from .65 to .70 across the five time periods.

Redmond and Rice (2001) further examined GAE-speaking children's abilities to judge the grammaticality of sentences. Their participants were GAE-speaking children, aged 5 to 8 years with and without SLI. Results from 39 of the children are presented here. Participants were procured from the Kansas Longitudinal Study of Morphosyntactic Development. The participants were classified into two groups: 19 children with SLI, aged 7;9 to 8;6 years, and 20 TD children, aged 7;8 to 8;8 years. The stimuli presented to the children included 15 GAE-appropriate sentences and 25 GAE-inappropriate sentences that contained irregular verb forms. The dialect-appropriate sentences included overt forms (e.g., The space guy robot *fell* off a block), and the dialect-inappropriate sentences included zero forms (e.g., The space guy robot

fall into the pool) and overt forms (e.g., The space guy robot *fal*led down) that were predicted to be sensitive to the SLI deficit, as well as sentences with control forms (e.g., I *is* happy and He *is* cry \emptyset) not predicted to be sensitive to SLI.

Results indicated that both groups (SLI: $M = .85$; TD: $M = .98$) demonstrated a high level of accuracy in judging dialect-inappropriate control forms that were not predicted to be sensitive to SLI (e.g., *is* vs. *am*, zero present progressive *-ing*); however, only the TD group, and not the SLI group was able to accurately judge the dialect-inappropriate sentences that were predicted to be sensitive to SLI. Specifically, the mean A' value of the SLI group for dialect-inappropriate overregularizations (e.g., “*He falled*” vs. “*He fell*”) was near chance (i.e., .57). In contrast, the TD group was able to accurately judge these dialect-inappropriate overregularizations ($A' = .82$). The SLI group’s ability to judge dialect-inappropriate zero forms ($A' = .54$) was also lower than the TD group’s ability ($A' = .96$). Taken together, the two studies revealed grammatical deficits involving tense and agreement forms for the GAE-speaking children with SLI. This deficit was found to be specific to tense and agreement as these children demonstrated the ability to judge the grammaticality of the control structures (*am* vs. *is* and zero present progressive).

Grammaticality Judgment in AAE

A few studies of grammaticality judgment have been completed with AAE-speaking children. In addition, there has been one study of AAE-speaking children's comprehension of verbal -s that is relevant to the current dissertation.

Johnson (2005) examined 30 AAE-speaking TD children's comprehension of verbal -s. The children ranged in age from 4 to 6 years. The task was a picture-choice comprehension task. As noted earlier in the literature review, verbal -s is a tense and agreement structure that is often zero marked in AAE (Green, 2002; Cleveland & Oetting, 2013; Newkirk-Turner & Green, 2016; 2021; Washington & Craig, 1994). Test items were designed to elicit comprehension of subject number (single-subject vs plural-subject). Based on the dialect of GAE, verbs with the verbal -s overt form were designed to correspond to a picture with a singular referent (e.g., *The cat sleeps on the bed.*) and verbs without a verbal -s form were designed to correspond to a picture with a plural subject (e.g., *The cats sleep on the bed.*). Also unique to this study was the selection of the subjects and verbs, because all subjects ended with -s when in the plural form and all the verbs started with an -s. This allowed the -s morpheme on the subject to blend with the beginning of the verb, thereby making it impossible for the children to use the plural -s morpheme on the subject to determine which picture to select.

Results indicated that the verbal -s overt form (e.g., *The cat sleeps on the bed*) did not lead the children to select the picture with the singular subject. In fact, the children's mean number of singular subject referents when presented with a verbal -s overt form was: 4-year-olds = 2.91; 5-year-olds = 2.00; 6-year-olds = 3.00. Similarly, their mean number of plural subject referents when the verbal -s morpheme was not produced was: 4-year-olds = 2.73; 5-year-olds = 2.80; 6-year-olds = 2.33. The total number of singular and plural items within the task was 10,

equally distributed. Analyses of these means indicated that all three ages of AAE-speaking children did not differ from each other in their selection of pictures corresponding to the presence of the verbal -s form. Selection of pictures based on the verbal -s forms by all three groups was also at chance levels.

These findings indicate that the AAE-speaking children's comprehension of subject number was not tied to the presence of an overt verbal-s form. Recall, that in other studies, AAE TD child speakers have produced low percentages of overt forms for this morpheme. In language samples, percentages of overt forms were reported as 21% (Cleveland & Oetting, 2013) and 32% (Oetting et al., 2021), and in elicitation tasks, they were reported as 46%, 47% (Newkirk-Turner & Green, 2016) and 57% (Oetting et al., 2019). These low percentages of overt forms for verbal -s for most of the AAE studies reviewed may help explain why Johnson's (2005) AAE-speaking children did not interpret the overt verbal -s forms as a marker of subject-verb number agreement. If this is true, then it is possible that AAE-speaking children, both with SLI and TD, may not judge the grammaticality of overt and zero verbal -s forms in the same way as GAE-speaking children.

In addition to Johnson's (2005) study, three studies have examined the grammaticality judgments of AAE-speaking children (Garrity 2007; Lee, 2017; Pruitt, 2006). Pruitt (2006) examined children's grammaticality judgments of regular and irregular past tense forms by AAE TD child speakers. The participants were TD 5-year-olds ($n = 15$) and 6-year-olds ($n = 15$). Within the task, dialect-appropriate and dialect-inappropriate productions of past tense forms were based on GAE as the referent dialect. Data collection and the calculation of A' values followed Redmond and Rice (2001) and

Rice et al. (1999). Correct acceptances and rejections were based on expectations of GAE.

Table 2.10. Five Types of Sentence Items, Examples, and Coding (Pruitt, 2006)

Sentence Types	Examples	Correct Based on GAE
Control Sentence Items	He am mad., She is cry \emptyset .	Reject
GAE-appropriate overt regular past tense	Yesterday, she jumped.	Accept
GAE-inappropriate zero regular past tense	Yesterday, she dance.	Reject
GAE-appropriate overt irregular past tense	Yesterday, he ran.	Accept
GAE-inappropriate overt irregular past tense	He hided.	Reject

Results first showed that the AAE-speaking TD children, especially the 6-year-old group, judged the control sentences in a way that aligned with GAE. Percentages of GAE-inappropriate control items scored as *not so good* (i.e., reject) were 63% for the 5-year-old group and 75% the 6-year-old group. Pruitt then calculated A' values for the regular and irregular past tense forms. The children accepted GAE-appropriate and inappropriate regular past tense forms (walked vs. walk \emptyset) and irregular past tense forms (fell vs. felled) at chance levels (regular: 5-year-old group $A' = .54$; 6-year-old group $A' = .41$; irregular: 5-year-old group $A' = .55$; 6-year-old group $A' = .59$). In other words, both groups of AAE-speaking TD children accepted all the past tense forms within the experiment at chance levels. Of relevance, the zero forms for past tense, while not produced at high percentages in AAE are acceptable in AAE. This might explain why the children judged these sentences at chance levels.

Garrity (2007) studied AAE TD children's grammaticality judgments of auxiliary BE forms (i.e., *am*, *is*, and *are*). Her participants were 4- to 6-year-old AAE-speaking children with and without SLI. The data of twenty of the children (SLI = 10; TD = 10) are presented here. In

contrast to the methods used by Pruitt (2006), A' values were not calculated. Instead, percentages of acceptable responses which were based on the dialect of AAE were examined. The AAE forms were: AAE-appropriate overt BE forms and AAE-appropriate zero BE forms. Mean percentages of acceptable responses showed some differences between the various items. For example, percentages of acceptable overt forms of *is* (SLI= 79%; TD = 93%) and *are* (SLI = 86%; TD = 87%) were higher than those obtained for dialect-appropriate zero forms of *is* (SLI = 57%; TD = 67%) and *are* (SLI = 58%; TD = 78%). However, when these percentages were examined statistically, no differences were observed for either group.

Moreover, the results for *am* contrasted those of *is* and *are*. Mean percentages of acceptable responses for dialect-inappropriate zero forms of *am* (SLI = 82%; TD = 81%) were higher than those of dialect-appropriate overt forms of *am* (SLI = 70%; TD = 33%). This finding was unexpected as AAE-speaking children and adults produce high percentages of overt *am* forms. Recall also that Garrity and Oetting (2010) reported that these same AAE-speaking TD children produced overt forms for *am* 100% of the time. Statistical analyses of the *am* data showed that the SLI and TD also differed on this structure, but the group difference was in the wrong direction with the TD group accepting zero *am* at higher percentages than did the SLI group.

The findings for *am* are difficult to explain. Garrity (2007) hypothesized that it may have been the way overt *am* was produced in the sentences that led to the children to judge it as “not so good”. Specifically, the overt forms were presented in an uncontractible context (e.g., *I am walking*) rather than the more common contractible context (e.g., *I'm walking*).

Finally, Lee (2017) examined the grammaticality judgments of 273 AAE-speaking children, aged 8 to 11 years old. A battery of subtests (e.g., Elision, Blending Words, Memory for Digits, Nonword Repetition, and Rapid Letter Naming) from the *Comprehensive Test of Phonological Processing-Second Edition* (CTPP-2) (Wagner et al., 2013) was utilized to measure language ability. The Morphological Comprehension subtest from the *Test of Language Development-Intermediate: 4* (TOLD-I:4) (Hammill & Newcomer, 2008) was administered to examine the children's judgments of dialect-appropriate and dialect-inappropriate sentences based on the dialect of GAE. The construction of the TOLD-I is comprised of 56 test items (GAE and AAE appropriate = 6, AAE appropriate only = 25, inappropriate in GAE and AAE = 25); however, as outlined in the TOLD-I's test manual, the first 10 items were administered to all children, and then the examiners discontinued testing when a child missed three (3) out of five (5) items. As a result, not all children completed the same number of items. In fact, two thirds of the participants within the study reached a ceiling before item 16. Given this, the items analyzed for all children included three (3) that were dialect appropriate in GAE and AAE, nine (9) that were dialect appropriate in AAE only, and six (6) that were inappropriate in both GAE and AAE.

To score the data, Lee (2017) gave each child a 1 for accurate responses and a 0 for inaccurate responses. Accurate responses included judging GAE and AAE appropriate items (*he is tall*) as correct and judging items appropriate in AAE only (*they was all here for breakfast*) and items inappropriate in both GAE and AAE (*we haven't no candy to give her*) as incorrect. For each type of item, the sum of the children's accurate responses was divided by the number of items tested (appropriate in GAE and AAE = 3; appropriate in AAE only = 9, inappropriate in GAE and AAE = 6). The children's average percentages of accurate responses were 93% for the items appropriate in both GAE and AAE, 50% for the items appropriate in AAE only, and 48%

for the items inappropriate in both GAE and AAE. These findings show that the AAE-speaking children were most accurate at judging the items that were appropriate in both GAE and AAE. By comparison, they judged items appropriate in AAE only and items not appropriate in both GAE or AAE with lower accuracies and at accuracies that did not differ from each other.

Summary

Studies of child AAE have included tense and agreement structures that have also been studied in child GAE studies. These structures have included: copula and auxiliary BE, regular verbal -s, and regular past tense. Studies of these structures show that AAE-speaking children produce them with mainstream overt forms, nonmainstream overt forms, and nonmainstream zero forms. In addition, AAE-speaking children, both with SLI and TD, produce these various tense and agreement forms with different relative frequencies (i.e., percentages) depending on the grammatical structure examined. The literature also indicates that AAE-speaking children with SLI produce lower percentages of overt forms for these grammatical structures than their AAE-speaking TD peers.

Finally, the three grammaticality judgment studies completed with AAE-speaking children did not yield a clear set of findings. Pruitt (2006) found that the TD AAE speakers accepted all types of past tense forms at chance levels. Garrity focused on acceptability based on AAE and found that the TD and SLI AAE speakers accepted mainstream overt auxiliary BE forms at higher rates than nonmainstream zero marked forms for *is* and *are*, but then found an unexpected and opposite finding for *am*. Finally, Lee (2017) found that AAE-speaking children produced the highest percentages of accurate judgments when given items that were appropriate in both GAE and AAE. The

accuracies of the children's judgements were lower for items appropriate in AAE only, and their judgments of these did not differ from their judgments of items that were inappropriate in both GAE and AAE. Importantly, each of these studies have focused on different types of grammatical structures, and they have examined the children's judgments in different ways. Pruitt (2006) calculated A' values based on GAE, Garrity (2007) calculated percentages of acceptability based on AAE, and Lee (2017) calculated percentages of accuracy based on GAE but divided the structures by the appropriateness in GAE and AAE.

The current study examined grammaticality judgments by AAE-speaking children. Using items from the TEGI grammaticality subtest, analyses included tense and agreement structures that are known to be sensitive to SLI in AAE (copula and auxiliary BE, regular verbal -s, and regular past tense) and grammatical structures that are not known to be sensitive to SLI in AAE (i.e., control structure = present progressive *-ing*). For all structures, the children's grammaticality judgments were examined using both A' values based on GAE, and percentages of acceptability based on AAE to align the work to the previous GAE and AAE studies. I also examined effects of the children's clinical status (SLI vs. TD) and the children's judgments by the type of grammatical structure presented.

Questions and Predictions of the Current Study

The questions and predictions that guided the study were as follows:

1. When given AAE dialect-appropriate overt forms and zero forms of grammatical structures that have been found to be sensitive to SLI in AAE, do AAE-speaking children with SLI and

TD controls differ in their grammaticality judgments using A' values and based on the dialect of GAE?

Prediction: Pruitt's study (2006) of AAE-speaking TD children found that dialect-appropriate overt forms and zero forms were judged at chance levels when measured with A' values. Given Pruitt's 2006 findings, I predicted that both groups of AAE-speaking children would make grammaticality judgments at chance levels and earn A' values that do not differ from .50.

2. When given AAE dialect-inappropriate overt forms and zero forms, which served as control structures, do AAE-speaking children with SLI and TD controls differ in their grammaticality judgments using A' values?

Prediction: 2a. Considering studies performed in GAE (Rice et al., 1998; Rice et al., 1999), it was predicted that a group difference between AAE-speaking children with SLI and TD controls would not be detected with A' values when control forms were examined. In other words, AAE-speaking children with SLI, like their AAE TD peers should not have difficulty judging the control structures.

2b. Given this, I also predicted there to be a difference between the children's A' values for the control forms and those that are classified as sensitive to SLI, with the A' values higher for the latter. This prediction was made for both the SLI and TD groups.

3. When given AAE dialect-appropriate overt forms and zero forms of grammatical structures that have been found to be sensitive to SLI in AAE, do AAE-speaking children with SLI and TD controls differ in their percentages of acceptable responses based on the dialect of AAE?

Prediction: Garrity's 2007 research is relevant to this research question. In her study, a statistical difference in percentages of acceptability between the SLI and TD

groups was visually apparent but not statistically different for dialect-appropriate overt forms and zero forms of *is* and *are*. A statistical difference was found for *am*, but it was in the opposite direction, with the SLI group producing higher percentages of acceptability for overt *am* than the TD group. Based on Garrity's 2007 findings, I did not have a clear prediction as to whether a clinical status difference would be observed in percentages of acceptability when AAE is used as the referent standard.

4. When given AAE dialect-inappropriate overt forms and zero forms, which served as control structures, do AAE-speaking children with SLI and TD controls differ in their percentages of acceptability?

Prediction: Pruitt's 2006 study demonstrated that AAE-speaking TD children were able to judge the control forms in the manner that aligned with GAE, but children with SLI were not included within her study. In studies of GAE speakers, however, children with SLI have shown the ability to judge control forms. Given this, I predicted that a clinical status difference would not be detected for acceptable responses of dialect-inappropriate overt and zero control forms. AAE-speaking children with SLI and TD controls should not have difficulty judging these forms.

5. Do the AAE-speaking children with SLI and TD controls vary their grammaticality judgments of different structures in ways that parallel percentages of overt forms previously documented for child AAE?

Prediction: Garrity's 2007 grammaticality judgment study included three different forms of BE, *is*, *are*, and *am*, and the results showed different percentages of acceptability for the three forms. Based on this study, I predicted that children with SLI and TD

controls would judge grammatical structures that are often overtly marked in AAE (i.e., copula is) differently than those that are often zero marked (i.e., copula and auxiliary are and verbal -s) in AAE.

CHAPTER 3: METHODOLOGY

Participant Profiles

Data came from 91 participants who participated in a larger multi-year study of AAE- and SWE-speaking kindergartners within rural southeastern Louisiana (Oetting et al., 2016; McDonald et al., 2018; 2019; Oetting et al., 2019; Oetting et al., 2021). The number of kindergartners enrolled in the schools during data collection was 834, and of these, 669 returned a consent form, and 106 were selected as matched SLI and TD groups within the dialects of AAE and SWE. Of these, 70 were classified as speakers of AAE. In addition to these children, others were enrolled in the study from those with consent forms and administered various experimental batteries and assessments as time allowed. The TEGI was an optional assessment that was administered during the last session(s) of data collection, and the grammaticality judgment subtest was the last subtest of the TEGI administered.

Of the 91 participants, 86 were classified as Black or AA and one as mixed race by their caregiver. The remaining four children did not have caregiver race information, but they were classified as AA based on school records. Forty-nine (53%) were females, and 42 (47%) were males. All participants passed a school-administered pure-tone hearing screening at 30 dB for 1000, 2000, and 4000 Hz in each ear. As shown in Table 3.1, the children's ages averaged 65.79 ($SD = 3.64$), and their maternal education (MED) level, which was based on 87 children with this information, averaged 12.57 years ($SD = 2.53$). A one-way analysis of variance (ANOVAs) indicated that the children's ages varied by their clinical status (TD < SLI), $F(1, 89) = 7.71, p = .007, \eta_p^2 = .080$, as did their MED levels (TD > SLI), $F(1, 85) = 5.66, p = .020, \eta_p^2 = .062$.

Table 3.1. Participant Profiles by Clinical Status

Clinical Status	Age	MED
SLI (<i>n</i> = 34)	67.12 (3.65) 61-74	11.75 (2.25) 6 -7
TD (<i>n</i> = 57)	65.00 (3.43) 60 -71	13.05 (2.57) 8 -17
Combined	65.79 (3.64) 60 -74	12.57 (2.53) 6 -17

Note. M(SD) followed by the children’s ranges.

Dialect Profile

The nonmainstream nature of the children’s AAE dialects were confirmed using the DELV-ST (Seymour et al., 2003a). The DELV-ST contains 15 items that can be used to classify a child’s dialect as MAE, some variation from MAE, or strong variation from MAE. With the DELV-ST, researchers also often calculate a percentage of nonmainstream form use by dividing the sum of the children’s nonmainstream responses by the sum of their nonmainstream and mainstream responses. As shown in Table 3.2, the classification of the children’s nonmainstream form use based on the DELV-ST scoring system indicates a relatively high percentage (81%) of nonmainstream responses produced by the participants. The distribution of low, medium, and high producers of nonmainstream forms within the AAE-speaking children is consistent with other dialect studies (Craig & Washington, 1994; McDonald et al., 2018; Terry et al., 2010; Washington & Craig, 1994). In addition, the AAE-speaking participants within the current study produced a comparable mean rate of nonmainstream form use as the AAE-speaking children studied by Terry et al. (2010); current study = 81% vs. Terry et al. (2010) = 79%).

Table 3.2. DELV- ST Degree of Dialect Variation

Degree of Variation	AAE = 91
Mainstream (low)	9 (10%)
Some Variation from Mainstream (medium)	16 (18%)
Strong Variation from Mainstream (high)	66 (72%)
DELV-ST % of Nonmainstream Responses out of Mainstream and Nonmainstream Responses	.81 (.22) .13-1.00

Note. Number reported first with rounded percentage in parentheses for DELV-ST dialect categories. M(SD) and range reported for DELV-ST % of nonmainstream responses out of mainstream and nonmainstream responses.

Clinical Status

Within the present study, 34 of the 91 children were classified as SLI, and 57 were classified as TD. The clinical status of the participants was confirmed through standardized testing and school records. The standardized tests included a nonverbal intelligence test, an articulation test, a receptive vocabulary test, and a syntax subtest from a language test (See Table 3-3). The tests were administered by trained graduate students.

The *Primary Test of Nonverbal Intelligence* (PTONI) (Erhler & McGhee, 2008) was used to measure the children' nonverbal intelligence. It was designed for children ages 3;0 to 9;11 and it was normed on 1,010 children residing in 38 states. The PTONI utilizes raw scores to attain a standard score, which has a normative mean of 100 ($SD = 15$). Scores between 85-115 are considered within normal limits, although for this study, children were included in the analyses if

they scored ≥ 82 (-1.2 SD from the normative mean). Average scores for the SLI and TD groups were 93.35 and 100.98, respectively. Although not planned, the mean difference between the two groups was statistically significant, (SLI < TD), $F(1, 89) = 10.06, p = .002, \eta^2 = .102$

The *Goldman-Fristoe Test of Articulation -II* (GFTA-II; Goldman & Fristoe, 2000) sounds-in-words subtest was used to evaluate the children's articulation skills. This test was designed for children, ages 2;0 to 21;11. The standardization sample of 2,350 children reflected the 1998 Census demographic of the United States population. Sound productions in words correspond to picture targets. The normative mean for the GFTA-II standard score is 100 ($SD = 15$). To be included in the analyses, children were required to score ≥ 85 . Although not planned, the GFTA-II group averages were statistically different, (SLI < TD), $F(1,89) = 7.535, p = .007, \eta^2 = .078$.

The syntax subtest of the *Diagnostic Evaluation of Language Variation: Norm Referenced* (DELV-NR) (Seymour et al., 2005) was administered to assess syntactic ability. This test was designed for children, ages 4;0 to 9;11. The standardization sample of 1,014 children was based on the 2000 U.S. Census Population Survey. The construction of DELV-NR syntax subtest is comprised of 28 test items that targets a child's knowledge of Wh- questions, passive sentence structure, and articles. The syntax subtest DELV-NR normative mean is 10 ($SD = 3$). Standard scores of 7 and above are within normal limits. Children were classified as SLI if they earned a score ≤ 7 and as TD if they earned a score ≥ 8 . The average DELV-NR standard score was 4.85 for the SLI group and 9.84 for the TD group. As implied, there was a clinical status difference in the children's DELV-NR scores, (SLI < TD), $F(1, 89) = 306.67, p = < .005, \eta^2 = .775$.

The *Peabody Picture Vocabulary Test -IV* (PPVT-IV) (Dunn & Dunn, 2007) is an untimed test of receptive ability for individuals, aged 2;6 to 90. The standardization sample of 3,540 examinees was designed to represent the demographics of the English-speaking U.S. population. The test requires the examiner to say a word and the child to select the picture that best reflects the word’s meaning. The PPVT-IV utilizes raw scores to attain a standard score, which has a normative mean of 100 ($SD = 15$). Scores between 85-115 are considered within normal limits. Given concerns related to the effect of the children’s socio-economic status on their standardized vocabulary test scores, this test was used for descriptive purposes rather than to determine the children’s SLI vs. TD status. The average PPVT-IV standard score was 82.32 for the SLI group and 101.46 for the TD group. The mean difference between the two groups was statistically significant, (SLI < TD), $F(1,89) = 86.51, p = < .005, \eta^2 = .493$

Table 3.3. Test Scores of Participants by Clinical Status.

Clinical Status	PTONI	GFTA-II	DELV-NR	PPVT-IV
SLI (34)	93.35 (9.55) 82-125	104.35 (5.75) 89-113	4.85 (1.01) 3-7	82.32 (9.55) 66-111
TD (57)	100.98 (11.91) 82-139	107.33 (4.51) 92-114	9.84 (1.46) 8-14	101.46 (9.45) 85-117
Combined	98.13 (11.64) 82-139	106.22 (5.18) 89-114	7.98 (2.75) 3-14	94.31 (13.25) 66-117

Note. M(SD) followed by the children’s ranges.

Additional information concerning family history of communication disorders was also collected when caregivers signed the consent form. Ninety families completed the family history question on the consent form, and of those, 65 reported a negative family history of impairments and 25 (SLI = 15; TD = 10) indicated a positive family history of speech, language, and reading impairments.

TEGI Grammaticality Judgment (GJ) Probe

The GJ probe is the fifth subtest of the TEGI (Rice & Wexler, 2001). The GJ probe is appropriate for children, ages 4;0 to 8;11. The test items are listed in Table 3.4.

Table 3.4. TEGI GJ Probe Test Items

1. He is hiding.	19. I drinks milk
2. He behind the box.	20. He are spitting it out.
3. Wow, he looks big.	21. He is cough.
4. And he furry.	22. Maybe he like juice better.
5. He brown.	23. I wants juice.
6. He is a bear.	24. He is jump.
7. The bear is look for something.	25. He landed on the box.
8. No, he is quiet.	26. He am way up there.
9. Now he is growling.	27. You jumps on the box.
10. He are mad.	28. He is cry,
11. He running away.	29. Maybe he bumped his head.
12. He am coming back.	30. He are hurt.
13. Maybe he hungry	31. You needs to help him.
14. He eat hamburger too.	32. Maybe he need a Band-Aid.
15. I likes hamburger too.	33. He is smile.
16. He is eating all of it.	34. He look happy now.
17. Now the bear want a drink.	35. Maybe he love you.
18. Maybe he drinks milk.	

The TEGI test items listed in Table 3-4 include sentences with GAE-appropriate overt forms (e.g., *Maybe he bumped his head.*), GAE-inappropriate zero forms that are sensitive to SLI (e.g., *He brown.*), and GAE-inappropriate overt forms (e.g., *I wants juice.*) that serve as control sentences. Recall from the literature review that GAE-speaking children, by the age of 6 years often overtly mark the grammatical structures on the TEGI at high percentages so combining the structures can be done in GAE. Recall also from the literature review that AAE-speaking children produce different percentages of overt marking for various structures so it may not be appropriate to combine them as done in the TEGI. Given this, the TEGI items are re-presented in Table 3.5 for the dialects of GAE and AAE. As shown, the number of TEGI items were not the same across the grammatical structures of interest (i.e., copula BE, auxiliary BE, regular verbal -s, regular past tense). There were also not equal numbers of GAE- or AAE- appropriate and inappropriate items. Whereas an unequal number of structures and appropriate and inappropriate items is not a problem for testing children who speak GAE (because items can be combined), it may be a problem for testing children who speak AAE, especially if their judgments are structure specific and tied to percentages of overt marking in their dialect.

TEGI Administration

The TEGI was administered according to the procedures outlined in the Examiner's Manual (Rice & Wexler, 1996). The children were presented with a script to elicit judgments on the grammatical accuracy of each presented item. The examiner instructed each participant,

Table 3.5. TEGI GJ Probe Test Items Categorized by Grammatical Structures and Dialect Appropriateness

Structures	Test Item	GAE- Appropriate	GAE- Inappropriate	AAE- Appropriate	AAE- Inappropriate
Overt Copula BE (<i>am</i>)	He am way up there.		X		X
Zero Copula BE (<i>am</i>)	N/A				
Overt Copula BE (<i>is</i>)	He is a bear. No, he is quiet.	X X		X X	
Zero Copula BE (<i>is</i>)	And he furry. He behind the box. He brown. Maybe he hungry.		X X X X	X X X X	
Overt Copula BE (<i>are</i>)	He are mad. He are hurt.		X X		X X
Overt Copula BE (<i>are</i>)	N/A				
Overt Auxiliary BE (<i>am</i>)	He am coming back.		X		X
Zero Auxiliary BE (<i>am</i>)	N/A				

Table cont'd.

Structures	Test Item	GAE- Appropriate	GAE- Inappropriate	AAE- Appropriate	AAE- Inappropriate
Overt Auxiliary BE (<i>is</i>)	He is hiding.	X		X	
	Now he is growling.	X		X	
	He is eating all of it.	X		X	
Zero Auxiliary BE (<i>is</i>)	He running away.		X	X	
Overt Auxiliary BE (<i>are</i>)	He are spitting it out.		X		X
Zero Auxiliary BE (<i>are</i>)	N/A				
	Wow, he looks big. I likes hamburger too.	X		X	
Overt Regular Verbal -s	Maybe he drinks milk.	X		X	
	I drinks milk.		X		X
	I wants juice.		X		X
	You jumps on the box.		X		X
	You needs to help him.		X		X
	Maybe he loves you.	X		X	

Structures	Test Item	GAE- Appropriate	GAE- Inappropriate	AAE- Appropriate	AAE- Inappropriate
Zero Regular Verbal -s	Maybe he like juice better.		X	X	
	He eat hamburger		X	X	
	Now the bear want a drink.		X	X	
	Maybe he need a Band- Aid.		X	X	
	He look happy now.		X	X	
Overt Regular Past Tense	He landed on the box.	X		X	
	Maybe he bumped his head.	X		X	
Zero Regular Past Tense	N/A				
Overt Present Progressive	N/A				
Zero Present Progressive Control Structure	The bear is look for something.		X		X
	He is cough.		X		X
	He is jump.		X		X
	He is cry.		X		X
	He is smile.		X		X

following a script involving two robots that have come down to Earth and landed in a forest. The script explains that the two robots are learning English and do not always know how to say things. The children were prompted to listen carefully and make a judgment about the grammatical accuracy of the robots' English. Responses by the children of "right" and "not so good" were encouraged by the examiners.

TEGI Scoring

The children's TEGI responses were first scored according to the manual. As per the TEGI manual, responses were coded based on GAE using the following codes: R (Right), NSG (Not So Good), U (Unscorable), or NR (No Response). The TEGI GJ probe utilized a binary system to score responses, and A' were calculated from the manual. Nevertheless, and as background, given that there are grammatical and ungrammatical items, A' values are typically calculated by scoring the 1 and 0 responses as reflecting one of four categories (see Table 3.6).

Table 3.6. A' Scoring Used in the TEGI

Item and Response	Category in A' Formula	Score on TEGI
GAE-appropriate; child responds Right	Hit	1
GAE-appropriate; child responds Not so Good	Miss	0
GAE-inappropriate; child responds Right	False Alarm	1
GAE-inappropriate; child responds Not so Good	Correct Rejection	0

Subtotals from each of these categories are then added together, and these values are used to calculate A' values using the formula: $.05 + (y - x)(1 + y - x) / 4y(1-x)$, taken from Linebarger, et al. (1983). In this formula, the x refers to the proportion of false alarms and the y refers to the proportion of hits. Given this background, it is important to note that the TEGI, treats all unscorable responses and no responses as misses or correct rejections, depending on the item.

The TEGI test manual also provides referent criterion A' values that are based on the test's normative sample (see Table 3.7). For descriptive purposes, I also compared the AAE-

speaking children’s A’ values to these criterion values from the TEGI to see if their performance resembled data of the GAE-speaking TD children in the normative sample.

Table 3.7. Criterion A’ Values for GJ Probe Items

GJ Probe Items	Criterion A’ Values				
	Age Group				
	5.00 –5.05	5.06 -5.11	6.00 -6.05	6.06 -6.11	7.00-7.11
GAE-inappropriate zero forms (Sensitive to SLI)	.71	.76	.81	.84	.94
GAE-inappropriate overt forms (Not sensitive to SLI)	.81	.86	.94	.95	.95
GAE-inappropriate zero forms (Not sensitive to SLI)	.91	.91	.91	.91	.90

Next, I rescored the items according to AAE. Recall that the TEGI items are scored based on appropriateness in GAE, so it does not allow for an examination of grammaticality in AAE. To do this, percentages of acceptable responses were calculated for each grammatical structure. This scoring approach followed the methods of Garrity (2007). The children’s responses were distinguished by indicating Y(Yes) or N (No) for each grammatical judgment provided by the participants. Y responses earned a score of 1 and N responses earned a score of 0. Percentages of Yes responses were calculated for each type of item on the TEGI (e.g., overt forms for *is*, zero forms for *is*).

Reliability

Reliability of the TEGI scoring was evaluated by asking a second examiner to independently score 20% ($n = 18$) of the SLI ($n = 34 * 20\% = 7$) and TD ($n = 57 * 20\% = 11$) groups' grammatical judgments. Results of the two scorers were compared. There were 630 (18 children x 35 scores) opportunities for agreement. The rate of agreement was 98% (621/630).

CHAPTER 4: RESULTS

Analyses of the data were organized in the following way. First, the children's grammaticality judgements of the items were analyzed using A' values. Then, percentages of acceptability based on AAE were examined. Percentages reflected the relative frequency of forms the children identified as "acceptable" for each grammatical structure, with the structures classified as sensitive or not sensitive to SLI in AAE.

As noted earlier, the types of grammatical structures and control forms (e.g., AAE-appropriate overt and zero, AAE-inappropriate overt and zero) were not evenly distributed within the data. Given this, descriptive statistics were utilized. Due to violations of the normality assumption, nonparametric statistics were conducted for all analyses, with Mann-Whitney *U* tests employed when between-group differences were examined, and Wilcoxon signed rank tests performed when within-group differences were examined.

Grammaticality Judgment

Grammaticality Judgments Based on A' Values

Table 4.1 provides A' values for the TEGI items by three categories of items: GAE- and AAE-inappropriate zero forms (e.g., *He is sleep∅*, control forms), GAE- and AAE-inappropriate overt forms ((e.g., *He am mad*, control forms), and AAE-appropriate zero forms that are inappropriate in GAE (e.g., *He ∅ brown*, sensitive to SLI). For each A' calculation, GAE- and AAE-appropriate overt forms (e.g., *He is a bear*, sensitive to SLI) were also included as the grammatical items. Shown are data for the 91 participants (SLI = 34; TD = 57) collapsed across both groups. As can be seen, A' values were highest for the GAE- and AAE-inappropriate zero control forms ($M = .73$), which were followed by the GAE- and AAE inappropriate overt control forms ($M = .65$) and GAE-inappropriate but AAE-appropriate zero forms ($M = .60$). The low A'

values of forms sensitive to SLI ($M = .60$) show that these items were not judged by the children at levels significantly greater than chance. The chance level finding for these forms is consistent with the acceptability of these forms in AAE. By comparison, the children earned higher A' values for the GAE- and AAE-inappropriate zero control forms ($M = .73$) and overt control forms ($M = .65$). With the groups combined, A' values for the control forms were higher than the AAE-appropriate zero forms predicted to be sensitive to SLI: control overt vs. zero sensitive to SLI ($M = .65$ vs. $.60$), $Z = 3.08$, $p < .002$; control zero vs. zero sensitive to SLI ($M = .73$ vs. $.60$), $Z = 4.40$, $p < .001$.

Table 4.1. A' Values by Grammatical Category with Groups Combined

Grammatical Category	M (SD)
GAE- and AAE-inappropriate overt forms (control)	.65 (.20)
GAE- and AAE-inappropriate zero forms (control)	.73 (.29)
AAE- appropriate zero forms (sensitive to SLI in GAE)	.60 (.20)

Next, the data from the SLI and TD groups were examined separately (see Table 4.2). The SLI group did not demonstrate a difference between A' values for the AAE-inappropriate overt control and AAE-appropriate zero predicted to be sensitive to SLI ($M = .65$ vs. $.59$), $Z = 1.90$, $p < .057$, but they earned higher A' values for the zero control forms than for the AAE-appropriate zero forms that were predicted to be sensitive to SLI ($M = .76$ vs. $.59$), $Z = 2.96$, $p < .003$. By comparison, A' values for the TD group for both control forms were higher than for the AAE-appropriate zero forms that were predicted to be sensitive to SLI: overt control vs. zero predicted to be sensitive to SLI ($M = .71$ vs. $.60$), $Z = 2.28$, $p < .023$; and zero control vs. zero predicted to be sensitive to SLI ($M = .66$ vs. $.60$), $Z = 3.18$, $p < .001$.

Finally, three Mann-Whitney *U* tests were conducted to determine whether the *A'* values of the clinical groups differed from each other. All three tests yielded nonsignificant results.

Table 4.2. *A'* Values by Grammatical Category and Clinical Group

<i>A'</i>	SLI		TD Controls		<i>n</i>	<i>U</i>	<i>Z</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
GAE- and AAE-inappropriate overt (control)	.65	.04	.66	.03	90	924	-.20	.84
GAE- and AAE-inappropriate zero (control)	.76	.05	.71	.04	90	881	-.61	.54
AAE-appropriate zero (sensitive to SLI)	.59	.03	.60	.03	90	951	-.01	1.0

Note. *n* = Number of participants; *M* = Mean; *SD* = Standard Deviation

Recall that the TEGI manual offers criterion scores from TD GAE speakers from the normative samples. The TEGI criterion scores are re-presented here in Table 4-3 along with the percentages of AAE-speaking children in the SLI and TD groups who would have failed the TEGI items if they would have been evaluated with the GAE criterion scores. As can be seen, for all TEGI items and both clinical groups, many of the AAE-speaking children would have failed the TEGI with the GAE criterion scores.

Table 4.3. Criterion A' values for Normative Sample Based on GAE and Percent of Children who Failed the TEGI by Clinical Status

GJ Probe Items	Criterion A' Values by Age Groups		
	5.0 – 5.5	5.6 – 5.11	6.0 – 6.5
GAE-inappropriate zero forms (Sensitive to SLI)	.71	.76	.81
SLI: Percent who failed based on criterion	8/12 = 67%	13/18 = 72%	4/4 = 100%
TD: Percent who failed based on criterion	22/32 = 69%	18/24 = 75%	-
GAE-inappropriate overt forms (Not sensitive to SLI)	.81	.86	.94
SLI: Percent who failed based on criterion	9/12 = 75%	14/18 = 78%	2/4 = 50%
TD: Percent who failed based on criterion	21/ 32 = 65%	17/24 = 71%	-
GAE-inappropriate zero forms (Not sensitive to SLI)	.91	.91	.91
SLI: Percent who failed based on criterion	8/12 = 67%	12/18 = 67%	2/4 = 50%
TD: Percent who failed based on criterion	22/32 = 69%	15/24 = 63%	-

Grammaticality Judgments of Grammatical Categories Based on AAE Acceptability

Table 4.4 shows mean acceptance rates for the AAE-appropriate overt forms (e.g., *He is a bear*) and zero forms (e.g., *He Ø brown*) with the clinical groups collapsed. Recall that these are the structures that are predicted to be sensitive to SLI. The children gave higher average

acceptability ratings to the AAE-appropriate overt forms ($M = .76$) than for the AAE-appropriate zero forms ($M = .57$), $Z = 4.74$ $p < .001$.

Table 4.4. AAE-Appropriate Forms: Acceptability Percentages with Groups Combined

Item Category	M (SD)
AAE-appropriate overt	.76 (.25)
AAE-appropriate zero	.57 (.28)

Next, the data were examined for the groups separately (see Table 4-5). For the SLI group, their acceptability percentages did not differ between the AAE-appropriate overt forms and zero forms (both $M = .61$), $Z = .219$ $p < .827$, but for the TD group, their acceptability percentages differed ($M = .85$ vs. $.55$), $Z = 5.18$ $p < .001$.

Finally, two Mann-Whitney U tests were conducted to determine if differences existed between the SLI and TD groups' percentages of acceptability on the two categories of AAE-appropriate forms. Results showed a significant difference for the AAE-appropriate overt forms, with the percentage higher for the TD group ($M = .85$) than for the SLI group ($M = .61$), $U = 463$, $p < .001$. No clinical status difference was detected for the AAE-appropriate zero forms: SLI group ($M = .61$) vs. TD group ($M = .55$), $U = 830$, $p = .25$. A summary of the results is presented in Table 4.5.

Table 4.5. AAE-Appropriate Forms: Acceptability Percentages by Clinical Group

Item Category	SLI		TD Controls		<i>n</i>	<i>U</i>	<i>Z</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
AAE-appropriate overt	.61	.05	.85	.02	91	463	-4.22	<.001*
AAE-appropriate zero	.61	.05	.55	.04	91	830	-1.14	0.253

Note. *n* = Number of participants; *M* = Mean; *SD* = Standard Deviation

Next, mean percentages of acceptability were examined for the AAE-inappropriate overt (e.g., *He am mad*) and zero forms (e.g., *He is sleepØ*) with the groups collapsed. Recall, that these forms served as control structures. The average AAE-inappropriate overt forms for the combined group was higher ($M = .46$) than the average of their AAE-inappropriate zero forms ($M = .32$), $Z = 491$, $p < .001$. A summary of the results is presented in Table 4.6.

Table 4.6. AAE-Inappropriate Forms: Acceptability Percentages with Groups Combined

Item Category	<i>M</i> (<i>SD</i>)
AAE-inappropriate overt	.46 (.31)
AAE-inappropriate zero	.32 (.32)

As shown in Table 4.7, both groups of children also accepted the AAE-inappropriate overt forms than the AAE-inappropriate zero forms; SLI: $Z = -2.59$, $p < .010$; TD: $Z = -4.29$, $p < .001$. Interestingly, clinical group differences were also found for both types of controls forms. For these comparisons, the TD group's percentages of acceptability were lower than those of the SLI group: AAE-inappropriate overt forms, $U = -690$, $p < .021$, and zero forms, $U = -614$, $p < .003$. This indicates that the TD group was more likely to judge these forms as inappropriate than the SLI group.

Table 4.7. Acceptability Percentages of AAE-Inappropriate Forms by Clinical Group

Item Category	SLI		TD Controls		<i>n</i>	<i>U</i>	<i>Z</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
AAE-appropriate overt	.56	.05	.40	.04	91	690	-2.30	.021
AAE-appropriate zero	.43	.05	.25	.04	91	614	-3.01	.003

Note. *n* = Number of participants; *M* = Mean; *SD* = Standard Deviation

Finally, I compared the children's percentages of acceptability of the AAE-acceptable overt forms and zero forms predicted to be sensitive to SLI to their percentages of acceptability of the AAE-inappropriate control forms. To do this, I used the percentages of acceptability previously reported in Tables 4.5 and 4.7; these data are re-presented in Table 4.8. What is striking about these percentages is the larger range of percentages observed for the TD controls than for the SLI group. This suggests that the TD group was more discerning in their acceptability judgments of the various categories of items than the SLI group. This conclusion was further supported by the statistical analyses as the SLI group showed differences for two of the comparisons between items, whereas the TD group showed differences for all three comparisons between items: SLI AAE-appropriate overt vs. AAE-inappropriate overt control (.61 vs. .56), $Z = .916$, $p = .360$; SLI AAE-appropriate overt vs. AAE-inappropriate zero control (.61 vs. .43), $Z = 4.94$, $p < .001$; SLI AAE-appropriate zero vs. AAE-inappropriate zero control (.61 vs. .43), $Z = 3.53$, $p < .001$; TD AAE-appropriate overt vs. AAE-inappropriate overt control (.85 vs. .40), $Z = 6.03$, $p < .001$; TD AAE-appropriate overt vs TD zero control (.85 vs. .25), $Z = 6.58$, $p < .001$; TD zero vs. zero control (.55 vs. .25), $Z = 5.70$, $p < .001$.

Table 4.8. Acceptability Percentages of Grammatical Categories by Clinical Group

Item Category	SLI		TD Controls	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
AAE-appropriate overt sensitive to SLI	.61	.05	.85	.02
AAE-appropriate zero sensitive to SLI	.61	.05	.55	.04
AAE-inappropriate overt control	.56	.05	.40	.04
AAE-inappropriate zero control	.43	.05	.25	.04

Grammaticality Judgments of Items by Grammatical Form and Structure

The final research question focused on the children's acceptability ratings of each type of form for each type of grammatical structure. To examine this research question, the seven AAE-appropriate forms for the grammatical structures sensitive to SLI were individually examined. For the seven forms, the average for overt copula BE yielded the highest acceptability percentage with a mean of .82, and zero copula BE yielded the lowest average with a mean of .41. A series of Wilcoxon tests were also completed to examine differences in the children's judgments of the overt and zero forms. With the clinical groups combined, there were differences between the overt and zero copula BE ($M = .82$ vs. $.41$), $Z = 6.30$, $p < .001$, overt and zero auxiliary BE ($M = .70$ vs. $.44$), $Z = 4.17$, $p < .001$, and overt and zero verbal -s, ($M = .79$ vs. $.73$), $Z = 2.03$, $p < .043$.

Table 4.9. Acceptability Percentages of Grammatical Structure with Groups Combined

Grammatical Structures	<i>M</i> (<i>SD</i>)
Overt Copula BE	.82 (.30)
Zero Copula BE	.41 (.35)
Overt Auxiliary BE	.70 (.35)
Zero Auxiliary BE	.44 (.50)
Overt Verbal -s	.79 (.28)
Zero Verbal -s	.73 (.29)
Overt Regular Past	.73 (.37)

When the clinical groups were examined separately, the TD group showed a significant difference between overt and zero copula BE, $Z = -5.58$, $p < .001$, overt and zero auxiliary BE, $Z = -4.87$, $p < .001$, and overt and zero verbal -s, $Z = -3.55$, $p < .001$. By comparison, the SLI group showed a difference for only one of the structures, overt vs. zero copula BE, $Z = -2.93$, $p < .003$. This finding further shows the TD group more discerning in their acceptability percentages between the overt and zero forms of the structures than the SLI group.

Finally, to determine if there were significant clinical group differences in the seven forms of the grammatical structures, seven Mann-Whitney U tests were also conducted (see Table 4.10). There were statistically significant differences between the SLI and TD groups for all overt forms, but none for the zero forms. In addition, for each structure showing a clinical group difference, the percentage of acceptability was higher for the TD group than for the SLI group.

Table 4.10. Acceptability Rates of Individual Forms by Clinical Group

Grammatical Structures	SLI		TD Controls		<i>n</i>	<i>U</i>	<i>Z</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Overt Copula BE	.71	.06	.89	.03	91	723	-2.52	.012*
Zero Copula BE	.49	.05	.37	.05	91	772	1.65	.098
Overt Auxiliary BE	.49	.06	.83	.03	91	475	-4.36	<.001*
Zero Auxialry BE	.53	.09	.39	.07	91	830	1.33	.185
Overt Verbal -s	.66	.06	.87	.03	91	623	-3.19	.007*
Zero Verbal -s	.74	.05	.72	.04	91	931	.326	.745
Overt Regular Past	.60	.07	.80	.04	91	706	-2.48	.013*

Note. *n* = Number of participants; *M* = Mean; *SD* = Standard Deviation

CHAPTER 5: DISCUSSION

The current study focused on AAE-speaking children's grammatical judgments of structures that encode tense and agreement. These structures were copula and auxiliary BE, regular verbal -s, and regular past tense. Like studies of GAE, the literature indicates that AAE-speaking children with SLI produce lower percentages of overt forms for these grammatical structures than their AAE-speaking TD peers. Relative to GAE, fewer studies have been conducted on AAE-speaking children's comprehension of tense and agreement structures, and of the three that have done this with grammaticality judgments, the results have been mixed. Given this, the current study was designed to examine AAE-speaking children's judgments of grammaticality as a function of their clinical status (SLI vs. TD).

Unlike GAE, the literature also shows that in AAE, the various grammatical structures that encode tense and agreement are overtly marked at different percentages, so there is a need to learn more about how the profile of SLI in AAE varies as a function of these grammatical structures. The current study was also designed to address this gap in the literature by examining AAE-speaking children's judgments of grammaticality by grammatical structure.

The study made use of an existing dataset of grammaticality judgments. These data came from a subtest of the TEGI, a test designed for children who speak GAE. Given this, the children's judgments were examined in two ways. First, I examined their judgments using A' values based on the dialect of GAE. These A' values were derived from the TEGI as this was the default approach for this test. Secondly, I examined the children's judgments using their

percentages of acceptability and based on the dialect of AAE. Five research questions guided the study.

1. When given AAE dialect-appropriate overt forms and zero forms of grammatical structures that have been found to be sensitive to SLI in AAE, do AAE-speaking children with SLI and TD controls differ in their grammaticality judgments using A' values and based on the dialect of GAE?
2. When given AAE dialect-inappropriate overt forms and zero forms, which served as control structures, do AAE-speaking children with SLI and TD controls differ in their grammaticality judgments using A' values?
3. When given AAE dialect-appropriate overt forms and zero forms of grammatical structures that have been found to be sensitive to SLI in AAE, do AAE-speaking children with SLI and TD controls differ in their percentages of acceptable responses based on the dialect of AAE?
4. When given AAE dialect-inappropriate overt forms and zero forms, which served as control structures, do AAE-speaking children with SLI and TD controls differ in their percentages of acceptability?
5. Do the AAE-speaking children with SLI and TD controls vary their grammaticality judgments of different structures in ways that parallel percentages of overt forms previously documented for child AAE?

The discussion is divided into four sections. In the first section, the findings are presented as they apply to the research questions. In the second section, the findings are compared to the literature on AAE-speaking children with and without SLI. In the third section, the results are

discussed as they relate to the SLI profile in AAE. In the final section, limitations of the current study and directions for future research are addressed.

Findings of the Current Study

The first and second questions focused on grammatical judgments using A' values based on the dialect of GAE. Given that AAE-dialect overt and zero forms of grammatical structures have been found to be sensitive to SLI in AAE, grammatical judgments based on group differences between the SLI and TD groups were examined. Recall that rates of grammaticality judgements using A' values computed by the TEGI utilize a binary system to score responses. I also had to change the TEGI labels (i.e., OI/EOI labels, Rice et al., 1999) of the items to describe them relative to their appropriateness for the dialects of GAE and AAE. Using my terms, three types of sentences were presented to the children: GAE-inappropriate but AAE-appropriate overt forms (e.g., *Steven skipped school*) and zero forms (e.g., *Steven skip \emptyset school*), GAE- and AAE-inappropriate overt control forms (e.g., *He am hurt*) and GAE- and AAE-inappropriate zero control forms (e.g., *He is cry \emptyset*).

Results showed that when the GAE-inappropriate but AAE-appropriate overt and zero forms were considered together, the A' values earned by the SLI and TD groups did not differ from each other. These forms, which are sensitive to SLI in GAE yielded A' values close to .50, which indicated chance performance by both groups. The control forms, which were inappropriate in both GAE and AAE generated higher A' values than the GAE-inappropriate but AAE-appropriate zero forms. Finally, when clinical groups were separated, the SLI group earned higher A' values for the zero control forms than for the zero forms sensitive to SLI.

Comparatively, the TD controls earned higher A' values for both types of AAE-inappropriate control forms than for the zero forms that are sensitive to SLI in GAE.

Taken together, these findings indicate that AAE-speaking children regardless of their clinical status, do not make grammatical judgments like GAE-speaking children, especially when A' values are calculated and GAE is used as the dialect referent. Moreover, A' values and use of GAE as the dialect referent do not help distinguish AAE-speaking children with SLI from those without SLI.

The third question examined whether clinical status differences were found for AAE-appropriate overt forms and zero forms based on percentages of acceptability. Here AAE was used as the dialect referent. Results showed that both groups produced higher acceptability percentages for the AAE-appropriate overt forms (76%) than for the AAE-appropriate zero forms (57%). The TD group also accepted the AAE-appropriate overt forms at significantly higher percentages than the SLI group. Conversely, the AAE-appropriate zero forms demonstrated no difference between the SLI group and TD controls. This finding shows the TD group more discerning of the appropriateness of overt forms in the judgment task than the SLI group. Although overt and zero forms are both appropriate in AAE, the judgment task was administered at school, where overt forms are likely preferred by teachers and other school personnel.

The fourth question examined whether clinical status differences occurred for the AAE-inappropriate overt and zero control forms. Results showed that both groups judged these dialect-inappropriate forms as less acceptable than the dialect-appropriate forms. Further, the children's produced lower acceptability percentages for the dialect-inappropriate zero forms (32%) than dialect-inappropriate overt forms (46%). These findings show that both the SLI and TD groups were sensitive to the dialect-appropriateness of the sentences. A statistically significant clinical group difference was also identified for the dialect-inappropriate overt and zero control forms.

For these, the TD group's percentages of acceptability were lower than the percentage produced by the SLI group. This finding further shows the TD group to be more discerning than the SLI group regarding the dialect-appropriateness of the items, even though both groups showed dialect-appropriate sensitivity to the items.

The fifth question of this study focused on whether children vary their grammaticality judgments by the various tense and agreement structures (i.e., copula BE vs. auxiliary BE vs. verbal -s). When the clinical groups were combined, the structural form that demonstrated the highest percentage of acceptability was overt copula BE and the lowest was zero copula BE. When the clinical groups were separated, the TD group showed a significant difference between the overt and zero forms for all three structures (i.e., copula BE, auxiliary BE, and verbal -s), whereas the SLI group showed a difference for only overt and zero copula BE forms only. For each of the overt forms, the percentage of acceptability was also higher for the TD group than for the SLI group. Together these findings show the TD group to be more discerning in their acceptability percentages between the overt and zero forms of the structures than the SLI group.

Additional planned comparisons of the various structures (i.e., *is* vs. *are*, past tense vs. verbal -s) could not be completed, because the TEGI did not have a sufficient number of items to make across-structure comparisons. Recall that there was only one item on the TEGI that targeted past tense and there were not a sufficient or equal number of items targeted copula and auxiliary *is* and *are* forms.

Comparisons to Previous Studies

Grammatical judgment tasks have been used to examine the grammar systems of children who speak AAE in previous studies. Findings from the current study are important to consider relative to these previous studies. Studies most like the one conducted here include Pruitt (2006)

who focused on A' values and GAE as the dialect referent and Garrity (2007) who focused on percentages of acceptability using AAE as the dialect referent. Lee (2017) also used a grammaticality judgment task to examine AAE-speaking children's grammars, but the structures differed from those examined here.

The 30 typically developing AAE-speaking children, aged 5 to 6-years-old studied by Pruitt (2006) produced A' values that were consistent with those earned by the children of the current study. Both studies found that dialect-appropriate overt forms and zero forms were judged at chance levels when measured by A' and with GAE as the dialect referent. This finding is perhaps not too surprising as both overt and zero forms of tense and agreement structures are acceptable in AAE. Also, Pruitt's children earned higher A' values for AAE-dialect inappropriate overt and zero control forms, and this same result was obtained here. In other words, both studies showed that AAE-speaking children demonstrate sensitivity to grammatical violations of AAE.

Pruitt's study did not include children with SLI. The current study did and showed that those with SLI earned A' values that did not differ from the A' of the TD controls. This finding demonstrates the inappropriateness of using A' values and the dialect of GAE as the referent when examining AAE-speaking children's grammatical judgements of tense and agreement. Interestingly, the A' values calculated for the control forms also did not show a clinical group difference. A lack of clinical differences with the control forms was also found in GAE by Rice et al. (1998) and Rice et al. (1999). This finding demonstrates some across-dialect similarity in the findings related to the control forms. Nevertheless, it would be wrong to conclude that the AAE-speaking children studied here were completing the TEGI task in the same way as the GAE-speaking children who were part of the TEGI norms. Recall that more than half of the AAE-speaking children in the SLI and TD groups studied here earned A' values that were lower

than the GAE-based criterion A' scores provided in the TEGI manual. This finding underscores the need to interpret the findings of this dissertation as showing the inappropriateness of using A' values based on GAE and GAE-speaking children as the normative benchmark when evaluating the grammar abilities of AAE-speaking children. Findings with the control forms further indicate that the inappropriateness of GAE as the dialect reference for AAE applies to the grammatical judgments of all types of grammatical forms and structures, including those that are and are not grammatical in AAE.

Garrity's (2007) study included AAE-speaking children with SLI and TD controls like the current study, but her structures were limited to auxiliary BE forms (i.e., *am*, *is*, and *are*). Her findings were also difficult to interpret because the results for *is* and *are* differed from those for *am*. In the current study, the results consistently showed AAE-appropriate overt forms to earn higher acceptability percentages than zero forms by both clinical groups, and higher percentages of acceptability of the overt forms by the TD group than by the SLI group. The current study also included many more structures than the three studied by Garrity (2007) and many more participants. Although the findings of the current study were more consistent than those of Garrity (2007), it is important to note that Garrity's task included many more items of auxiliary *am*, *is*, and *are* than examined on the TEGI the current work, the TEGI only included five forms for auxiliary *is*, one for auxiliary *are*, and two for auxiliary *am*. Given this, a future study should examine the grammatical structures targeted in the current study but with many more items for each type of structure.

Parallels between Children's Grammaticality Judgements and Productions

One of the motivators for examining AAE-speaking children's grammaticality judgments of various tense and agreement structures related to findings from previous AAE production studies. Recall that in the literature review, many studies of AAE-speaking children's tense and agreement productions have been completed. These studies have shown that unlike GAE, AAE-speaking children produce different percentages of overt marking for various tense and agreement structures. These findings led me to reason that AAE-speaking children's grammaticality judgments might vary in ways that parallel the AAE production data.

Unfortunately, the TEGI data did not offer enough items for each grammatical structure to fully examine my research question or hypothesis. In fact, there was only one regular past tense item on the TEGI and unequal numbers of the other structures. Nevertheless, the production data in Table 5-1 (which came from the literature review) show higher percentages of overt marking by AAE-speaking children classified as TD than by those classified as SLI. This same pattern of findings was observed in the current study because the TD group also produced higher percentages of acceptability for the AAE-appropriate overt forms than did the SLI group. This finding supports the claim that there are at least some parallels between AAE-speaking children's production of tense and agreement structures and their comprehension of these structures.

Implications for the Profile of SLI within AAE and Future Grammaticality Judgment

Tasks

The current investigation focused on the grammaticality judgments of AAE-speaking children with and without SLI. Using a clinical marker approach by Rice et al. (1995), the structures examined encoded tense and agreement. The items were also taken from the TEGI, a

Table 5.1. Percentages of Overt Marking for Six Tense and Agreement Structures from Four AAE Studies.

Structure	Garrity & Oetting (2010)		Berry & Oetting (2017)		Oetting et al. (2019)		Hendricks & Adolf (2020)	
	SLI	TD	SLI	TD	SLI	TD	SLI	TD
Auxiliary BE (is)	49 (44)	70 (48)	-	-	57 (36)	83 (30)	-	-
Auxiliary BE (are)	44 (48)	70 (48)	-	-	49 (38)	72 (34)	-	-
Regular verbal -s	-	-	-	-	30 (32)	57 (41)	57.6 (37.3)	75.2 (21.3)
Regular past -ed		-	-	-	46 (31)	70 (33)	44.6 (21.3)	65.6 (27.9)

Note. - indicates no data for the structure; () parenthesis indicates standard deviation.

test designed by Rice and Wexler (1996) for the dialect of GAE. Although use of A' values and GAE as the dialect referent was uninformative, a number of interesting and informative findings were revealed when percentages of acceptability and AAE was used as the dialect referent. In fact, when this latter approach was taken, the results showed tense and agreement structures to be difficult for children with SLI relative to their TD AAE-speaking peers. This finding is consistent with others who have found tense and

agreement structures to be difficult for children with SLI in AAE and GAE. Together, these studies support a profile of SLI across dialects of English that includes tense and agreement deficits.

Key to these findings and the characterization of SLI across dialects is the use of AAE as the referent dialect and the use TD AA-speaking peers as the control group. Recall that when GAE was used as the referent dialect and A' values from the TEGI were calculated, both the SLI and TD group performed at chance levels when asked to judge the tense and agreement structures. These results fortify the assertion that AAE-speaking children's linguistic systems acknowledge both overt and zero forms as grammatical. This finding also indicates that the use of GAE and a paired design of "grammatical vs. ungrammatical" choices with AAE-appropriate overt and zero forms in tasks are ill-equipped to adequately differentiate AAE-speaking children with SLI from their AAE-speaking TD peers. In other words, asking children to make judgments of grammaticality using GAE as the referent dialect is at odds with the underlying morphosyntactic characteristics of AAE.

Limitations of the Present Study and Directions for Future Studies

As with all studies, the current dissertation had limitations that need to be considered when interpreting the findings. First, use of the TEGI to examine the children's grammaticality judgments was a major limitation of the study. The TEGI included an unequal distribution of grammatical structures and forms, so I was unable to examine each structure with rigor. In the future, a task should be created with equal numbers of sentences targeting AAE-appropriate overt and zero forms involving tense and agreement (sensitive to SLI), AAE-appropriate overt and zero forms not involving tense and agreement (control forms), and AAE-inappropriate overt forms and zero forms that do and do not involve tense and agreement (control forms). This task

should also include equal numbers of items targeting all forms (i.e., dialect appropriate overt forms and zero forms, and dialect-inappropriate overt forms and zero forms) of copula and auxiliary BE (*is, are, was, were, am*), verbal -s, and past tense.

Secondly, the study did not include the children's production data, so I was unable to examine correlations between the children's production data and their grammaticality judgments. I also focused the analyses on group findings rather than examined the results of each child. A future study should determine how each child performs to better understand and estimate the diagnostic accuracy of grammaticality judgment tasks when they are created for the dialect of AAE. This is needed to determine if a grammaticality judgement task yields high enough levels of sensitivity (percent of children with SLI identified as SLI) and specificity (percent of children with TD classified as TD) to be used in clinical practice.

Thirdly, the current study was limited to five- and six-year-old kindergartners. This narrow age range is too small to generalize the findings to all AAE-speaking children. Future research should include different age groups and older children. Considering that previous investigations have focused on changes in AAE use across grades (Craig & Washington, 2004; Hendricks & Adolf, 2020), age may explain possible variation in AAE-speaking children's grammaticality judgments. It would also be very interesting to learn at what age children (both TD and SLI) begin to show differences in their acceptability percentages across various types of AAE-appropriate and inappropriate structures.

Fourthly, the AAE-speaking children came from one rural area in one southern state. AAE is not spoken by all children in the same way across all communities and all regions of the country. In fact, the production data by Hendricks and Adolf (2020) conducted in South Carolina showed percentages for verbal-s forms (75%) to be significantly higher than previously reported

percentages for TD controls at 21% (Cleveland & Oetting, 2013) and 36% (Oetting et al., 2019), which were obtained from rural Louisiana communities. Recall that the Hendricks and Adolf study included children of various races and who were classified as nonmainstream English speakers rather than speakers of AAE. Their average nonmainstream form density from the DELV-ST was also lower than average density of the AAE-speaking children studied here in as reported in other studies (e.g., Terry et al., 2010). Nevertheless, researchers and clinicians should factor in speaker residency (both region and community) when interpreting AAE-speaking children's tense and agreement data. Future research should also focus more directly on learning more about how AAE varies across communities and regions of the country.

General Conclusions

The current study examined the grammatical judgments of AAE-speaking children by their clinical status and grammatical structure. Results showed that grammaticality judgment as measured by A' values and based on GAE failed to differentiate AAE-speaking children with SLI from their same dialect-speaking TD controls. In addition, both groups of AAE-speaking children made grammaticality judgments of tense and agreement overt forms and zero forms near chance levels. These findings support the recognized appropriateness of overt and zero forms to mark tense and agreement within the AAE linguistic system. These findings also underscore the inappropriateness of using GAE as the dialect referent and GAE norms when assessing the language skills of children who speak AAE.

Use of AAE as the dialect referent and calculations of acceptability percentages for the various grammatical structures in the TEGI provided greater insight into the grammatical weaknesses (and strengths) of the AAE-speaking children with SLI. Analyses of these percentages also consistently showed the TD controls demonstrating higher preferences for

AAE-appropriate overt forms over zero forms than those with SLI. Dialect-inappropriate control forms were also found to be less acceptable to the TD group than to the SLI group. Together, these findings indicate that relative to the TD controls, the SLI group was less discerning of grammatical variation within the dialect of AAE.

Clinical Implications

Following the work of Rice and colleagues (1995; 1996), the current study focused on a set of tense and agreement morphemes as a clinical marker of SLI. This was done because the production of tense and agreement overt forms has been found to be difficult for children who speak various dialects of English, including GAE, AAE, and SWE. In GAE, grammatical judgments of tense and agreement have also been found to be difficult for children with SLI relative to TD controls. When AAE was used as the dialect referent and acceptability percentages were calculated, findings from the current grammatical judgment study can be viewed as complementing those done in GAE, because the AAE-speaking children with SLI showed less discernment in their grammatical judgments of tense and agreement forms than the AAE-speaking TD controls. For clinical practice, these findings show that the tense and agreement production deficits previously documented in AAE SLI studies extend to their comprehension.

The current study was also conducted from a disorder within dialect framework as advocated by Oetting and colleagues (Oetting et al., 2016; Oetting, 2018; Oetting et al., 2019; Oetting et al., 2021). This framework encourages researchers and clinicians to examine the language abilities of children with SLI within their dialect and to use same dialect-speaking TD peers to identify normative benchmarks. Consistent with a disorder within dialect framework, the children with SLI studied here were classified as speakers of AAE, and AAE-speaking TD

children were used as the controls. The disorder within dialect framework also encourages researchers and clinicians to use materials that are informed by a child's dialect and to score children's responses in a way that maximizes differences between those with and without SLI within the child's dialect. In the current study, the TEGI was not designed for AAE, but it was rescored for the dialect of AAE. When this was done, important differences between those with and without SLI were revealed.

Although findings from the current study support the use of a clinical marker approach and a disorder within dialect framework for future studies of SLI within AAE, they also have important implications for clinical practice. Specifically, the findings implicate the inclusion of both production and comprehension (i.e., grammaticality judgments) probes of tense and agreement within the assessments and treatments of AAE-speaking children with SLI. The current set of findings also indicate that future assessment and treatment materials should be informed by the dialect of AAE, and that norms should be created using typically developing AAE-speaking children. More research is needed to help clinicians learn how to implement each of these recommendations. Recall that limited information exists about AAE-speaking children's tense and agreement systems because clinicians routinely exclude these forms from clinical practice when a child speaks AAE. Recall also that classification of SLI in the current study was based on the DELV-NR, the only test designed for children who speak various dialects of English including AAE. The current findings do not suggest that this tool should be replaced with measures of tense and agreement. Instead, the findings suggest that tense and agreement measures should be administered along with the DELV-NR. The DELV-NR does not target tense and agreement, so additional measures are needed to learn about the tense and agreement systems of AAE-speaking children with SLI.

It is interesting to note that the current set of clinical recommendations for children who speak AAE are similar to what is currently recommended for children who are bilingual or multilingual. Specifically, best practice for children who speak more than one language is to assess all of their languages rather than a subset of their languages (Thordardottir et al., 2006; White & Jin, 2011; Boerma & Blom, 2017) and to use typically developing bilingual or multilingual speakers as the normative benchmark rather than speakers who are monolingual (Bedore & Peña, 2008; O'Toole & Hickey, 2012). There is also a growing literature base that seeks to better understand how bilingual and multilingual language acquisition differs from monolingual language acquisition (Paradis & Genesee; 1996; Bedore & Peña, 2008; Privette, 2021). Researchers who seek to further study children's acquisition of AAE and the identification of SLI within AAE may benefit from working collaboratively with researchers who study these same topics in bilingual and multilingual language learning contexts.

Finally, before closing it is important to think about the barriers researchers and clinicians may face trying to implement the current set of clinical recommendations. A clinical marker approach to SLI and the disorder within dialects framework are relatively new to the field. Thus, more dissemination of these approaches and frameworks are needed. In addition, the recommendation to include tense and agreement within clinical practice for children who speak AAE goes against a long history of teaching within the field of speech-language pathology that recommends the opposite – to exclude these structures in fear of misinterpreting a dialect difference as a language disorder. Yet, to not work to make clinical change is NOT an option given the findings of the current study and others implicating tense and agreement as difficult for children with SLI and given the lack of information that is learned about tense and agreement in AAE when these structures are excluded from clinical practice.

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VITA

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