

LEXICAL ASPECT AND THE USE OF THIRD-PERSON SINGULAR /S/ IN
AFRICAN AMERICAN ENGLISH-SPEAKING CHILDREN

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by

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ABSTRACT

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The purpose of this investigation is to determine whether the lexical aspect of the verb plays a role in 3rd/s/ marking and whether differences can be observed in rates of 3rd/s/ production between typically developing (TD) AAE-speaking children and their peers with specific language impairment (SLI). Proportions of 3rd/s/ marked-verbs were compared across and within groups. Differences were found in the type of verb that was marked for 3rd/s/ and between the TD and SLI groups of AAE-speaking children's rate of 3rd/s/ production. These findings contribute to our understanding of the role lexical aspect plays in grammatical morphology and that children with SLI may not be sensitive to this role across dialects of English.

CHAPTER I

Introduction

Purpose

This investigation has two purposes. The first is to determine whether the presence of third-person singular /s/ (3rd/s/) in African American English (AAE) is governed by the lexical aspect of the verb. Verb classes will be divided along the class system given by Smith (1991), where states and events are divided and events are subdivided. The second purpose of this investigation is to determine whether typically developing (TD) children and children with specific language impairment (SLI) behave in the same way with regard to their production of 3rd/s/. The significance of our findings will advance research in diagnosing SLI in culturally and linguistically diverse (CLD) populations and provide further insight into the production of 3rd/s/ in AAE.

Third-Person Singular /s/ in AAE

The assignment of 3rd/s/ in AAE has been studied by several researchers (Baugh, 1999; Green, 2002; Johnson, 2005; Johnson, Coles, Ramos, Seymour, & Hall, 1996; Labov, 1969; Washington & Craig, 1994; Wolfram & Schilling-Estes, 1998). The primary reason for investigating it is that it is “variably” produced, meaning that it occurs sometimes but not all the time in AAE. Adult overt productions of 3rd/s/ by speakers of AAE have been found to be between 25% and 50% (Baugh, 1999; Wolfram & Schilling-

Estes, 1998). Typically developing children who speak AAE have been found to produce 3rd/s/ at similar rates (Washington & Craig, 2004). Although 3rd/s/ is used in general American English (GAE) as a clinical marker of SLI (Burns & Camarata, 2006; Camarata, Nelson & Camarata, 1994; Goffman & Leonard, 2000; Leonard, Eyer, Bedore, & Grela, 1997; Rice & Oetting, 1993; Rice, Wexler, & Cleave, 1995). AAE-speaking children's rates of production make it difficult to use 3rd/s/ in any diagnostic endeavor.

Third-Person Singular /s/ in GAE

The use of 3rd/s/ is obligatory in the grammar of speakers of GAE by four years of age (Brown, 1973; Rice & Wexler, 2001). Despite its obligatory nature and usefulness as a diagnostic indicator of SLI, there is some debate over the meaning it carries in GAE. Consistent with the majority of literature, Rice & Wexler (2001) treat it as a tense and agreement marker. Other researchers, such as Enç (1990), argue that 3rd/s/ does not mark the present tense but only third-person agreement. A key part of her evidence comes from the fact that progressive forms indicate a real present whereas 3rd/s/ lends itself to a habitual interpretation. Compare *John lives in Texas* to *John eats ice cream*. For the first sentence to be true, John must, at this moment live in Texas. The stative verb must therefore hold unchanging in this moment. However, *John eats ice cream* does not have to be true at this moment, and therefore has a habitual interpretation. Therefore *John usually or often eats ice cream* has an equivalent meaning. English favors the progressive form to convey events that are occurring in the present moment, so that the previous example would become *John is eating ice cream*. Enç rejects analyses such as those given by Bennett & Partee (1973) in which the habitual interpretation of *John eats*

ice cream comes about through an interaction of present tense and the lexical stativity of the verb.

Despite the dispute over the possible interaction between stativity and tense, the fact of the matter is that 3rd/s/ is obligatory in GAE, even though there are questions about why and how it is used in the manner that it is. These questions go beyond the scope of the current investigation. However, it is important to understand the role aspect plays in the production of 3rd/s/ in English.

Aspect: Lexical vs. Grammatical

Comrie (1976) gives the following general definition of aspect: “Aspects are different ways of viewing the internal, temporal constituency of a situation.” For example, *John was eating ice cream when I entered the room*. The verb *entered* and the verb compound *was eating* contrast, in that the second verb presents the speaker’s entry as a single, unanalyzed whole vs. the *was reading* that refers to the internal part of the situation between the moment the reading began and the moment the reading ended.

We can further subdivide aspect into lexical aspect (aktionsart) and grammatical aspect (Comrie, 1976). Lexical aspect is an invariant property of an eventuality. Take the previous example, *John lives*. *Lives* is stative because the parts are undifferentiated; conversely, *eats ice cream* employs *eats* to describe a change in state. Where lexical aspect is invariant, grammatical aspect can be changed through morphology. In the example *was reading*, *reading* referred to a mid-portion of the eventuality, to a point where the action was in progress. *I entered* referred to the eventuality presented as a whole; in this case the grammatical aspect is progressive for *reading* and perfective for *entered*. In summary, lexical aspect has to do with the kind of eventuality, either state or

event (Bach, 1986), a verb describes and grammatical aspect has to do with perspective taken in viewing that eventuality. This study looks at how lexical aspect influences grammatical morphology.

The intersection of lexical aspect and 3rd/s/

As was the case in GAE, there is dispute as to what 3rd/s/ is in AAE. Some people have argued that it may be related to stativity or habituality (Green, 2002). Green (2002) lists several examples of the verbal *-s* morpheme appearing in conjunction with *we*, *I*, and *it* that all read with recurrent aspect. This provides a useful contrast to the use of tense and aspect between GAE and AAE. The use of verbal *-s* in GAE can only be used in third person singular environments. However, this may not be a constraint of AAE. Therefore, it may be used as a tense and agreement marker, consistent with GAE, but it is not obligatory.

This study's aim is to examine the presence of 3rd/s/ in child AAE to determine whether a difference can be found on the lexical aspect of the verb and the proportion at which these verbs are marked. This will provide insight into possible environments that may constrain or facilitate the use of verbal *-s* in third person contexts as well as shed light on the morphological development of child AAE speakers. As an extension, by comparing TD children and children with SLI, we may be able to more reliably identify morphological deficits in AAE-speaking children with SLI.

AAE and Specific Language Impairment

The emergence of descriptive linguistics and Chomsky's transformational grammar facilitated the reevaluation of the idea of "improper" forms and emphasized the idea that perceptions of well-formed sentences may differ from dialect to dialect

(Radford, 1998). As a result there has been an expanding awareness that AAE is a rule-governed dialect that provides for differing levels of blending with GAE (American Speech-Language-Hearing Association, 2003; Green, 2002). Despite efforts to reduce bias against culturally and linguistically diverse children, particularly those who speak dialects of GAE, children who speak AAE continue to be over-identified as children with language disorders (Johnson, 2005).

One contributing factor to this issue is that the vast majority of current theories of SLI have not been tested using speakers of other dialects of English. Most research concerning SLI has been conducted on speakers of GAE. Though research has been conducted on non-English-speaking populations (Bedore & Leonard, 2001; Bortolini, Caselli, & Leonard, 1997; Bosch & Serra, 1997; de Jong, 1999; Dromi, Leonard, Zadunaisky-Ehrlich, 1999; Hansson & Nettelbladt, 1995; Leonard & Bortolini, 1998; Rice, Noll, & Grimm, 1997), bilingual children (Jacobson & Schwartz, 2005; Paradis, 2005), and cross-cultural comparisons (Clahsen, Bartke, & Gollner, 1997; Leonard, 1992; Leonard, Sabbadini, Leonard, & Volterra, 1987), limited research has been done on SLI as it pertains to other varieties of English, such as AAE (Oetting & McDonald, 2002). Most research has instead focused on identifying production patterns of AAE (Bland-Stewart, 2003; Burns, Paulk, Seymour, & Pearson, 2000; Craig, Thompson, Washington, & Potter, 2003; Green, 2002; Oetting & McDonald, 2002; Washington & Craig, 1998; Washington & Craig, 2002; Washington & Craig, 2004). For theories of SLI to be valid, they must be applicable to all variations of a language (Burns & Marks, 2008). This includes accounting for the “variability” of features of dialects, in particular 3rd/s/ in AAE. Two theories of SLI that have been widely studied in cross-cultural population

studies are the Extended Optional Infinitive (EOI) account (Rice, Wexler, & Cleave, 1995) and Leonard's (1989; Leonard, McGregor & Allen, 1992) Surface account.

Overview of SLI

Both of the previously mentioned theories are based on measurable deficits in the acquisition and use of grammatical morphemes by children with language impairment, and posit that a delay in morpho-syntactic development is the most salient characteristic of SLI (Paradis, 2005). Children with SLI fall behind their typically developing peers in the overt use of free and bound morphemes, in that they fail to consistently apply them in obligatory contexts and at a decreased frequency even when compared to mean length of utterance (MLU) matched peers (i.e. children who are younger). Grammatical morphemes that pertain to tense and number appear to be of particular difficulty for these children (Pawłowska, Leonard, Camarata, Brown, & Camarata, 2008).

Grammatical morphemes such as copula and auxiliary forms of *be* (*is, am, are, was, were*), past tense *-ed*, 3rd/s/, and auxiliary *do* (*do, does, did*) are considered the most frequently delayed tense and agreement morphemes (Pawłowska, Leonard, Camarata, Brown, & Camarata, 2008). In most varieties of English, the speaker is required to mark tense, which fixes the time an eventuality holds or takes place (Bach, 1980). In GAE, speakers must also mark agreement, which requires matching the number value of the subject to the grammatical morpheme attached to the verb. For example, a speaker must be able to determine whether the subject of the verb is singular (e.g. *I, he/she/it, dog, cake*) or plural (e.g. *we, they, dogs, cakes*) and apply the corresponding tense and agreement inflection to the verb.

Additionally, TD children have been shown to be sensitive to the lexical aspect of a verb for the application of morphemes, and developmental tense-aspect morpheme production seems to be governed by a verb's lexical properties (Anderson & Shirai, 1996; Johnson & Fey, 2006; Li & Sharai, 2000). This sensitivity may provide insight into linguistic abilities of children's developing grammars. TD children are able to apply aspectual "clues" (such as endpoint, duration, and result) to mark past tense *-ed* and progressive *-ing* (Shirai & Andersen, 1995). Johnson & Morris (2007) evaluated several studies that examined both word level (phonological components of words) and sentence level (lexical constraint within the sentence) aspectual features that facilitated the use of past tense *-ed*. However, children with SLI have been shown to be less sensitive to these features of aspect (Leonard, Deevy, Kurtz, Chorev, Owen, Polite, Elam, & Finneran, 2007). Evidence for aspect as a reliable marker of SLI has also been found for Cantonese-speaking children with language impairment (Fletcher, Leonard, Stokes, & Wong, 2005). Cantonese-speaking children with SLI produced fewer aspect morphemes than their TD peers, even after controlling for their knowledge of temporal expression.

Despite the complexity of tense, agreement, and aspect, TD children are able to navigate these morphological forms by the age of five (Hulit & Howard, 2006, p. 209). The following sections provide possible explanations for these deficits, based on the two previously mentioned accounts of SLI.

The Extended Optional Infinitive Account(EOI)

The EOI account (Rice et al., 1995) is based on Wexler's (1994) account of an EOI stage, wherein typically developing children go through a period when they are aware of grammatical finiteness but do not consistently mark tense and number with the

adult target form (e.g. past tense *-ed*). Verb finiteness is conveyed by the presence of the maximum number of required morphological markings. For instance, *she eats* has the maximum available markers: tense (present), person (third), and number (singular), which are all conveyed through the surface feature of 3rd /s/. Due to the morphological sparseness of GAE, a verb may carry finite meaning without an overt morphological marking, also known as a surface form, as in *I go*. Wexler concluded that children develop a fundamental understanding of finiteness only after experimenting with the bare stem form during their linguistic development. Children in the experimentation stage will produce some sentences that carry finite main verbs and some sentences that do not, and these productions indicate that a child has knowledge of tense and agreement but not of their obligatory nature.

Additionally, the EOI account predicts that children may produce sentences that over-generalize a form in a sentence but will not produce a sentence that would not occur in the adult grammar (Rice, et al., 1995). For example, the GAE-speaking child may produce *he go home* but not *I goes home*. The child's experimentation is simultaneously inconsistent in obligatory contexts but also restricted to obligatory contexts. The EOI theory proposes that children with SLI continue to use the nonfinite form of verbs long after TD children have begun to proficiently mark tense and number.

The Surface Account

Another description of the morphological production patterns of children with SLI is Leonard's "surface" account (1989; Leonard, McGregor & Allen, 1992), which describes an interaction between processing capacity limitations in the SLI population and GAE language acquisition. The underlying assumption is that the children with SLI

have a generalized difficulty processing incoming grammatical information, such that comprehension of grammatical morphemes will be traded for comprehension of salient syntactic and lexical parts of the sentence. The weight of this theory falls on the physical properties of grammatical morphemes of relative duration (Leonard et al., 1997). Because English morphemes are often of brief duration, sometimes only one consonant or unstressed syllable (e.g. past tense *-ed*, 3rd/s/, progressive *-ing*), and are embedded within verb phrases, a child's ability to process incoming information is being taxed, and the child will have subsequent difficulty both perceiving the information and generalizing the morphemes' uses. For example, in the sentence *he goes home*, the child may focus efforts on processing the noun, verb, and direct object as opposed to the present tense third-person singular marker. Studies of children in more morphologically complex languages, such as German and Hebrew (Clahsen, Bartke, & Gollner, 1997; Dromi, Leonard, Zadunaisky-Ehrlich, 1999) indicate that the salience of verb morphology prevents children from missing these morphological cues.

According the Surface account, grammatical morpheme errors are expected to be errors of omission rather than substitution (Leonard et al., 1997). For example, it is more likely that a child with SLI who speaks GAE will produce the verb phrase *she go* instead of the error *I goes*, where the 3rd/s/ morpheme is omitted instead of added to first person. However, it is possible that substitution errors may occur, particularly on forms of the verb *be*, for copula and auxiliary (*is*, *am*, *are*, *was*, *were*). In this case, the form a child produces more frequently in discourse will be substituted in place of the correct form. For example, Leonard et al. (1997) found that third person singular *is* was frequently substituted for third person plural *are* by children with SLI. The substitution of *is* for *are*

could indicate that the third person plural form has not yet emerged in the child's grammar.

Assessment of SLI in Young AAE Speakers

Another contributing factor to the over-identification of children who speak AAE as SLI is a continued reliance on diagnosing SLI based on grammatical morphemes. Though these grammatical morphemes differentiate children with SLI from their TD peers in GAE-speaking populations, speech-language pathologists' continued reliance on these morpho-syntactic forms as a clinical indicator has created problems for assessment in CLD populations (Seymour, et al., 1998). Consider two linguistic patterns of AAE: (1) the neutralization of singular and plural verbs (Green, 2002, p. 99), and (2) the "zero-form" of the copula and auxiliary. Neutralization refers to the pattern within AAE of using the same verb form for both singular and plural subjects. In AAE the forms *I go*, *you go*, and *she go* are all appropriate and consistent with the rule-governed system of the dialect. The "zero-form" of the copula/auxiliary refers to the optional use of *is*, *am*, *are*, and *were* in sentences like *he here* (copula) and *we skiing* (auxiliary). Assessment becomes problematic because these features create surface similarities between morpho-syntactic impairment in GAE and typical child AAE structure.

If it has been determined that a child speaks AAE as his or her primary dialect, the SLP does not have a comprehensive body of data available to determine whether the neutralization of 3rd/s/ or the zero-form of the copula and auxiliary are reflective of the rules of the dialect or an inability to apply appropriate morpho-syntactic rules (Johnson, 2005). Despite extensive work describing the semantic and lexical environments of the surface features of AAE (Baugh, 1980; Craig & Washington, 1990; Fasold, 1972;

Rickford & Rickford, 2000; Wolfram, 1991; Wyatt, 1991) the SLP community does not have a reliable way of differentiating morpho-syntactic impairment from a language difference. Determining whether a child is consistently applying rules of one dialect and not the other, or neither, remains a major challenge in the clinical setting. The decision must be made regarding which language-based deficits a child has and whether the surface features represent the child's understanding of tense and agreement. In the case of tense marking, the GAE marker for the past tense *-ed* is variably produced in AAE, so the SLP in the clinical setting must be able to quantifiably and qualitatively measure the child's understanding of the past in a manner that is appropriate to the dialect.

Approaches to Assessment

In an attempt to resolve the dilemma of diagnosing language disorder in the face of language difference, several different approaches in the field of speech-language pathology have been taken to provide more adequate research methodologies to identify children with SLI who also speak AAE. One such method is to examine noncontrastive features of the two dialects (i.e. features that are shared between GAE and AAE) (Seymour et al., 1998). Another tack is to examine contrastive features within a dialect to determine what the rules governing a particular morpho-syntactic form may be (Burns et al., 2000; Oetting & McDonald, 2002).

Noncontrastive Assessment

Noncontrastive assessment's aim is to evaluate features of a language that are related to its underlying linguistic principles, which mean that commonalities between language variations are considered, as opposed to features that distinguish one dialect from another. This is particularly important when one considers the obligatory nature of

3rd/s/ in GAE and its variable production in AAE. Seymour et al. (1998) outlined the approaches to noncontrastive assessment based on these principles, and determined that there are several consistent and reliable clinical markers of language disorder that do not take surface features into account. Roeper (2004) reported that children with language disorders have been shown to have difficulty with multiple areas of discourse, which indicates children with SLI have impairments that go beyond surface features of grammatical morphology that greatly impairs communication.

Contrastive Assessment

Another tack has been to determine the linguistic rules of the child's dialectal forms (Burns et al., 2000; Burns & Marks, 2008; Oetting & McDonald, 2002). Assessment employing the linguistic rules of dialectal forms provides an opportunity to assess linguistic skill in the most naturalistic situation for a child, his or her own dialect. Children with language disorders struggle with language, regardless of the primary dialect spoken at home. However, an assessment of such rule-adherence can only be made when dialect-specific rules are known (Burns & Marks, 2008). When linguistic environments for morpho-syntactic forms that are considered "variable" and "optional" are determined, researchers within the field of speech-language pathology will be able to create and employ sensitive and specific assessment methods that examine obligatory contexts of grammatical morpheme production in both TD children and children with SLI who speak AAE.

Evidence-Based Intervention

An extension of contrastive assessment is evidence-based intervention. Research that considers obligatory contexts and constraints of AAE is required to more fully

describe the linguistic system of the dialect in order to create evidenced-based intervention strategies (Oetting & McDonald, 2002; Wyatt, 1991). One research study that capitalized on potential linguistic constraints was Burns and Camarata's (2006) intervention study. The researchers knew that verbal *-s* in AAE might be a marker of habituality; the children in the study were not using 3rd/s/ as either a tense/agreement marker or a habituality marker. Instead, the children were using the word "always" and seemed to be marking habituality in that way. By the end of the treatment, two of the children were productively using 3rd/s/, but were no longer using the word "always." Here it seemed that aspect may have been contributing to the retention of 3rd/s/. A logical extension of the Burns & Camarata (2006) study is to more closely examine 3rd/s/ morpheme production in TD children and children with SLI who speak AAE by examining the lexical aspect of verbs form that have been overtly marked for 3rd/s/.

Lexical Properties of Verbs

For the purpose of this investigation, the occurrence of 3rd/s/ will be described based on the lexical property of the verb. This study compares eventive verbs to stative verbs. Eventive verbs are causally structured and indicate at least one change from a preceding situation to a resulting one, while stative verbs signify an unchanging situation (Gennari & Poeppel, 2003; Torrence, 2000). Stative verbs have no discernable endpoint and lack duration. For instance, *am*, *like*, and *feel* are all stative verbs.

Partee (2000) distinguished states from events based on time intervals. States are true for a single moment, whereas events can only be true at time intervals bigger than moments. Therefore eventive verbs describe actions with both habitual occurrence and actions that can be completed, while stative verbs have an absence of dynamism, in that

they exist in one moment in an unchanging manner. This absence of dynamism means that a state can hold for some period of time without change.

It is important to further distinguish the categories of eventive verbs, particularly as they pertain to completion and duration. Telicity indicates whether a verb has an endpoint, and duration describes whether a verb phrase can be conceptualized as occurring over some period of time or as being instantaneous (measurable but brief). These two components can further divide eventive verbs into four subcategories: activity, accomplishment, semelfactives, and achievement (Dowty, 1979; Smith, 1991; Verkuyl, 1972). For example, in the verb phrase *drive around the block*, *drive* is atelic, in that there is no outcome or goal encoded in the verb; *drive to work* is telic, for the final outcome of the verb *drive* is the arrival at work. Furthermore, the verb *drive* in both of these situations encodes an aspect of duration, in that it is necessary for some amount of time to pass to accomplish the verb. Therefore, *drive around the block* is an activity while *drive to work* is an accomplishment.

Verbs that occur without this time component are instantaneous. The verb *smell* occurs in an instant but has no discernable endpoint, and is therefore semelfactive. *Win* also has an instantaneous time-frame but there is a definite endpoint, and so it is an achievement. By applying the concepts of duration, telicity, and dynamism, a matrix of eventive and stative verb properties can be constructed by situation type (Smith, 1991).

Table 1: Lexical categories of verbs by situation type (Smith, 1991)

Situation Type	Duration	Telicity	Dynamic
Activity <i>drive around</i>	Durative	Atelic	Yes
Accomplishment <i>drive to work</i>	Durative	Telic	Yes
Semelfactive <i>smell</i>	Instantaneous	Atelic	Yes
Achievement <i>win</i>	Instantaneous	Telic	Yes
State <i>love</i>	n/a	n/a	No

By contrasting these distinctions and comparing the presence of 3rd/s/ inflection with regard to these categories, we may determine whether or not they constrain the use of 3rd/s/ in AAE.

Purpose & Summary

The purpose of this investigation is to 1) investigate whether the overt marking of 3rd/s/ in child-AAE may be influenced by subdivisions of eventive verbs or stative verbs, and 2) see if a distinction can be found in the marking of 3rd/s/ between TD children who speak AAE and children who speak AAE who also have SLI. If the presence of the 3rd/s/ occurs more consistently on a particular type of verb, the underlying linguistic constraints of overt 3rd/s/ marking may be clarified and increase our understanding of its use.

Furthermore, if TD children show more overt productions in a lexical context, it may be an indication that children who are not producing 3rd/s/ may not yet have internalized the productive rules of the dialect, which may support a clinical diagnosis of SLI. These findings are relevant for selection of assessment probes and training targets during intervention that capitalize on the obligatory rules of a dialect so that SLPs may more adequately assess and treat the linguistically diverse child who has SLI. Lastly, results of

this study may help extend current SLI research to populations of children who do not speak GAE.

CHAPTER II

Methods

Subjects

Data were obtained from the language sample transcripts used to determine concurrent validity (Seymour, Roeper, de Villiers, de Villiers, & Pearson, 2005) of the Diagnostic Evaluation of Language Variation (DELV) (Seymour, Roeper, de Villiers & de Villiers, 2003) and the DELV-Screening Test (Seymour, et al., 2003). The subjects were 78 African American male ($n=43$) and female ($n=35$) TD children ($n=57$) and children with SLI ($n=21$) who ranged in age from 5;0 to 6;9. The children were subdivided based on dialect strength, as determined by Language Variation Status (LVS – see Language Samples & Determination of Dialect Strength and Risk section below). There were a total of 48 children in the Strong Variation (StV) group, 13 in the Some Variation (SmV) group, and 17 in the No Variation (NoV) group. TD children and children with SLI were also subdivided by dialect status such that there were the following groups: StVTD ($n = 34$), SmVTD ($n = 7$), NoVTD ($n = 16$), StVS LI ($n = 14$), SmVS LI ($n = 6$), and NoVS LI ($n = 1$).

The following information was taken directly from Seymour et al. (2005) and describes the demographic features of the original validity sample participants.

Table 2: Participants (Seymour et al., 2005)

Demographic Characteristics	Ageband				Overall Sample
	5:0 to 5:5	5;5 to 5;11	6;0 to 6;5	6;6 to 6;11	
n	18	20	20	20	78
Age					
Mean	5;3	5;8	6;3	6;8	6;0
Language status					
Typically developing	14	14	16	14	58
Language Impaired (receiving language services)	4	6	4	6	20
Gender					
Female	11	11	7	6	35
Male	7	9	13	14	43
Female Clinical					5
Male Clinical					15
Race/Ethnicity					
African American					100%
Parent Education					
	3.3	3.8	3.2	3.4	3.4
(2 = hs diploma; 3 = up to two years of college; 4 = college)					
Region					
NorthCentral					19
Northeast					5
South					30
West					1
n with AA examiner					
	10	8	6	8	32

Language Samples

The language samples were collected from January 2003 to March 2004 throughout four geographic regions of the United States: north central ($n = 19$), northeast ($n = 5$), south ($n = 30$), and west ($n = 1$). The DELV-Screening Test was developed as a means of determining dialect strength in order to screen for risk of a language disorder in the presence of a possible language difference (Seymour, 2005). The DELV was

developed to assess language impairment in an unbiased and culturally sensitive manner by employing noncontrastive forms of assessment.

Language Samples & Determination of Dialect Strength and Risk

The participants in the validity study were examined using the DELV; the following is a description of tests. The DELV-Screening Test was developed to determine Language Variation Status (LVS) and assess Diagnostic Risk Status (DRS) for children in culturally and linguistically diverse populations. Results are intended to ascertain the strength of a child's dialect, relative to GAE, and to prevent unnecessary referrals for speech-language evaluation in children who speak a dialect of English by determining how well the child adheres to rules of their dialect and performs on tasks regarding underlying principles of language.

The author's of the DELV determined LVS by comparing the use of seven contrastive features between GAE and AAE in the domains of phonology (eg., substitution of *f* for *th*, as in *baf* for *bath*) and morpho-syntax (3rd person present tense zero marking; plural subject with *was/were* as in "they *was* sick."). This score indicated whether a child had *strong* variation from GAE (StV), *some* variation from GAE (SmV), or *no* variation from GAE (NoV). DRS was determined by examining noncontrastive features of English. These features included morpho-syntax (singular subject *was* copula or auxiliary, possessive pronouns *hers* and *theirs*), and *wh*-movement (*when did the boy say where he fell?*). Additionally, another theory of SLI highlights children with language disorder's difficulty processing incoming speech, as tested by non-word repetition tasks (Campbell, Dollaghan, Needleman & Janosky 1997; Dollaghan & Campbell 1998). Therefore a non-word repetition task was also included.

The DELV was developed by Seymour, Roeper, & de Villiers (2003) to be a “non-biased and comprehensive assessment tool for determining the presence or absence of a language disorder in students who speak a nonmainstream dialect of English, such as AAE.” The DELV assesses linguistic ability across the domains of syntax, pragmatics, semantics, and phonology, and yields domain-specific scores, total raw scores, and a standard score (phonology is not included in the raw score or standard score). A standard score less than 1.5 standard deviations below the mean (77 and below) is indicative of a language disorder. Noncontrastive features of English are assessed (eg, auxiliary *was*); expressive language standard scores are based on scores from the pragmatics, article use, and verb and preposition contrasts subtests. Receptive language is assessed through the use of *wh*-syntax, passive voice, quantifiers, and a child’s ability to learn novel words through fast-mapping, which is the capacity to learn a novel word based on limited exposure (Alt, Plante, & Creusere, 2004; Gershkoff-Stowe & Hahn, 2007), and syntactic bootstrapping (Carr & Johnston, 2001; Landau & Gleitman, 1985; Oetting, 1999), which is the ability to use argument structure and morphological cues to learn a new word’s meaning.

Therefore, at the time language samples were collected, each child had previously received a LVS rating, a DRS rating, and a DELV standard score. To ascertain clinical status from the language transcripts, each transcript was hand-coded by two listeners and a third-examiner, who resolved discrepancies between the two transcribers, finalized the transcripts, and typed them into Excel (Seymour, 2005).

The following syntactic domains were evaluated for each transcript: number of utterances, percent of one-word utterances, percent of child’s utterances in response to

questions, percent imitations, percent spontaneous sentences, number of different words in a transcript, number of different words in the first 50 utterances, mean length of utterance (MLU) in words, MLU in morphemes, Brown's stage, mean sentence length with one-word utterances excluded, phrasal complexity measure, clausal complexity measure, percent of complex sentences, sentence complexity, and an IPSyn Total Score (Seymour, 2005). Furthermore, a pragmatics composite was determined based on reference contrasting, problem solving, requesting, use of mental states, and narrative prompting.

The language samples ranged from 49 to 284 utterances with a mean length of 175 utterances (Seymour, 2005). One-word utterances for the set of language samples comprised a mean of 25% of the samples with a range of 4 to 51%. Twelve samples had fewer than 100 utterances, and when one-word utterances were excluded, 17 samples had fewer than 100 utterances. The effect of the short samples was not statistically significant. Analysis of the syntactic measures indicated that there were significant correlations between the DELV score for each child and almost all of the language sample measures.

To validate scores from the LVS, each child's use of AAE tokens was divided by the number of total utterances produced (Seymour, 2005). A list of AAE tokens used for this measure is reprinted from the original Wolfram & Fasold list in Washington & Craig (1994). Agreement for this measure was found to be 97%, with only two true discrepancies. Based on the concurrent validity of the DELV and the language samples, the labels applied to the language sample transcripts regarding language ability and dialect status will also be used for this study.

Materials:

The coded language transcripts were used for this study. Two columns for each of the four eventive categories and stative verb category were created (e.g., activity marked, activity unmarked).

Analysis:

Linguistic:

Each transcript was contextually analyzed for the presence or absence of 3rd/s/. Verbs that occurred in third-person singular context were coded as either marked or unmarked for the verb category to which the verb belonged. This required identifying instances when a third-person singular-subject either immediately preceded the verb (*it drives; the lady laugh*) or when the response to a question demanded the use of third-person.

For example, several exchanges in the transcript are based on the presentation of picture stimuli, and the examiner asks the child what the person in the picture “does.” The response required the child to either overtly produce the subject or use subject ellipsis, wherein a third-person form of the verb was obligatory. In these instances, both inflected and uninflected verbs standing alone without a subject were coded as third-person singular, based on discourse-level anaphora (Nariyama, 2004). Therefore, these utterances were unambiguously meant to be third-person singular contexts to be included in the analysis.

Reliability:

Coding agreement of presence/absence of 3rd/s/ and category of verb were examined by an independent examiner; inter-rater reliability was initially 92.8%. Discrepancies were resolved by a third judge, the principal investigator of this study.

Statistics:

Total numbers of opportunities for each marked and unmarked verb type were summed for each transcript. Transcript sums were then combined into two language-status based groups, TD and SLI. An independent samples t-test was conducted to compare group means of verb opportunities between the aggregated typically developing group and the language disordered group.

A proportion of marked to unmarked verbs for each verb category was calculated using the plus-one sample proportion statistic for each language status groups. The z-test (normal test) for two proportions was used to compare differences in marked verses unmarked verb proportions between the two groups. After initial analysis of the TD vs SLI groups was completed, the transcript sums were then divided based on language status by dialect strength for a total of six groups. The z-test (normal test) for two proportions was used to compare differences in marked verses unmarked verbs between and within the six language status-by-dialect groups. Additional analysis was also completed to compare proportions of marked to unmarked verb forms across groups that were not paired for language status or dialect status.

In total, comparisons were made for the following groups:

Table 3: List of groups compared in this study

TD	SLI
Strong Variation TD (StVTD)	Strong Variation SLI (StVSLI)
Some Variation TD (SmVTD)	Some Variation SLI (SmVSLI)
No Variation TD (NoVTD)	No Variation SLI (NoVSLI)
StVTD	SmVTD
StVTD	NoVTD
SmVTD	NoVTD
StVSLI	NoVTD
StVSLI	SmVSLI
SmVSLI	NoVTD
SmVSLI	NoVSLI
StVSLI	NoVSLI
St&SmTD	St&SmSLI
St&SmVTD	NoVTD

Significance was set at the .05 level for all tests. Confidence intervals, set at 95%, were obtained for all tests to provide an interval of where the true expected proportion would be if there were no difference between the groups, and post-hoc power analyses was also conducted using GPower*3 software (Faul, 2007).

CHAPTER III

Results

Differences were found between stative verbs, durative verbs, and instantaneous verbs. Eventive verbs that convey duration (activities, accomplishments) and stative verbs were marked more than instantaneous verbs, and stative verbs were marked more than activities and accomplishments.

Table 4 summarizes the lexical categories that were examined.

Table 4: Lexical categories

Situation Type	Duration	Telicity	Dynamic
Activity (ACT) <i>drive around</i>	Durative	Atelic	Yes
Accomplishment (ACC) <i>drive to work</i>	Durative	Telic	Yes
Semelfactive (SEM) <i>smell</i>	Instantaneous	Atelic	Yes
Achievement (ACH) <i>win</i>	Instantaneous	Telic	Yes
State (STS) <i>love</i>	n/a	n/a	No

Results of this study also indicate that overall TD children overtly produce 3rd/s/ in greater proportion than children with SLI. Furthermore, TD children who speak AAE overtly mark 3rd/s/ in greater proportion than children with SLI who speak AAE. Therefore, children with SLI do not appear to be sensitive to these environments and do

not mark 3rd/s/ at rates that are similar to their TD peers. Dialect density also plays a significant role in the overt marking of 3rd/s/.

Verb Opportunities

The language samples yielded a total number of 998 verb opportunities for the TD group and 292 verb opportunities for the SLI group. The mean number of verb opportunities for the TD group was 17.46 ($SD = 1.70$) and 13.90 ($SD = 8.99$) for the SLI group. The two groups did not differ significantly in number of verb opportunities ($t(76) = 1.354, p = .09$), as seen in Table 5.

Table 5: Opportunities by group

	Verb Opportunities	Mean	Standard Deviation
TD	998	17.46	1.70
SLI	292	13.90	8.99

Typically Developing Children's 3rd/s/ Marking

The results below summarize the number of marked and unmarked verbs by lexical aspect category and also provide the proportion of verbs that were marked for the overall group of TD children. Comparisons of overt marking by verb type will also be provided.

The TD children produced 269 marked activities and 353 unmarked activities, 49 marked accomplishments and 68 unmarked accomplishments, 15 marked semelfactives and 14 unmarked semelfactives, 24 marked achievements and 24 unmarked achievements, and 107 marked statives and 75 unmarked statives. Table 5 shows the number of marked and unmarked verbs for each activity type and stative verbs as well as the proportion of marked verbs. As can be seen, overall the TD children did not mark any verb for at rates higher than 60%, which is consistent with previous research.

Table 6: TD opportunities by lexical category and proportion

Verb Type	Typically Developing Children <i>n</i> =57			
	Marked	Unmarked	Total Opportunities	Proportion of Marked
ACT	269	353	622	.43
ACC	49	68	117	.42
SEM	15	14	29	.52
ACH	24	24	48	.50
STS	107	75	182	.59
Total	464	534	998	-

The majority of the verb opportunities were for activity events, which accounted for 58% and 66% of the marked and unmarked verb forms for the TD group respectively. Stative verbs comprised 23% and 14% of the marked and unmarked samples respectively. Semelfactives and achievements combined only accounted for 8.46% of the marked sample and 7.13% of the unmarked sample.

Significant differences were observed in the type of verb that was marked by the TD children. TD children marked significantly more stative verbs than eventive verbs in the activities and accomplishments categories. Table 7 shows the *p*-value for significance tests that compared the observed proportion of marked to unmarked verbs between categories of verbs and corresponding confidence interval (CI) that shows the space where the true difference in proportion may be with 95% confidence. CIs that range from a positive to negative number illustrate the insufficiency of the sample size to detect a true difference between the two groups.

Table 7: Within TD group comparisons of lexical categories

TD <i>p</i> -values (CI) <i>n</i> =57	ACT	ACC	SEM	ACH
ACC	.40 (.11 to .08)	-	-	-
SEM	.18 (.26 to -.10)	.17 (.29 to -.10)	-	-
ACH	.18 (.21 to -.08)	.17 (.24 to -.09)	0.44 (.24 to -.21)	-
STS	<0.001 (.24 to .07)	0.002 (.28 to .05)	.23 (.12 to -.26)	.14 (.07 to -.24)

The TD children marked stative verbs at a significantly greater proportion than activities ($p < .001$) with a 95% *CI* that ranged from .24 to .07, and accomplishments ($p = .002$) with a 95% *CI* that ranged from .28 to .05. However, activities were not marked at a significantly greater proportion than accomplishments ($p = .40$) with a 95% *CI* that ranged from .11 to .08. There were no significant differences between: semelfactives and achievements ($p = .44$) with a 95% *CI* of .24 to -.21, semelfactives and activities ($p = .18$) with a 95% *CI* of .26 to -.10; semelfactives to accomplishments ($p = .17$) with a 95% *CI* of .29 to -.10; semelfactives to statives ($p = .23$) with a 95% *CI* of .12 to -.26; achievements to activities ($p = .18$) with a 95% of .21 to -.08; achievements to accomplishments ($p = .17$) with a 95% *CI* of .24 to -.09; and achievement to statives ($p = .14$) with a 95% *CI* of .07 to -.24.

Children with SLI's 3rd/s/ marking

The results will again summarize the number of marked and unmarked verbs by lexical aspect category and also provide the proportion of verbs that were marked for the overall group of children with language impairments. Comparisons of overt marking by verb type are also provided.

Table 8 shows the number of verb opportunities for each category and the proportion of marked forms. The children with SLI produced 37 marked activities and

139 unmarked activities, 10 marked accomplishments and 38 unmarked accomplishments, two marked semelfactives and five unmarked semelfactives, four marked achievements and six unmarked achievements, and 13 marked statives and 38 unmarked statives. The children with SLI did not mark any verb type at a rate higher than 45%.

Table 8: SLI opportunities by lexical category and proportion

Verb Type	Children with SLI <i>n</i> =21			
	Marked	Unmarked	Total Opportunities	Proportion of Marked
ACT	37	139	176	43
ACC	10	38	48	.42
SEM	2	5	7	.52
ACH	4	6	10	.50
STS	13	38	51	.59
Total	66	226	292	-

However, similar to the TD children, activities accounted for the majority of the verb productions, with 56% and 62% of the marked and unmarked forms respectively. Stative verbs accounted for 20% and 17% of the marked and unmarked forms respectively. Semelfactives and achievements combined only accounted for 9.09% of the marked sample and 4.87% of the unmarked sample.

Unlike the TD group there were no significant differences between any type of marked verbs within the SLI group. Table 9 shows the *p*-values for significance tests that compared proportions of marked verbs within the SLI group *p*-value for significance tests that compared the observed proportion of marked to unmarked verbs between categories of verbs and corresponding confidence interval (CI), which estimates the space where the true difference in proportion may be with 95% confidence. CIs that range from a positive to negative number are evidence for a lack of statistical reliability for the test: the sample size was therefore too small to detect a true difference for all of these tests.

Table 9: Within SLI group comparisons of lexical categories

SLI <i>p</i> -values (CI) n=21	ACT	ACC	SEM	ACH
ACC	.46 (.12 to -.14)	-	-	-
SEM	.20 (.43 to -.19)	.23 (.44 to -.22)	-	-
ACH	.05 (.50 to -.08)	.08 (.50 to -.11)	.35 (.33 to -.50)	-
STS	.22 (.08 to -.18)	.30 (.12 to -.21)	.33 .40 to -.26	.15 (.46 to -.15)

Two things are notable based on confidence intervals (CI). The first is that even though one test looked as if it approached significance, as in the comparison between activities and achievements, ($p = .05$) with a 95% *CI* of .50 to -.08, the wide interval spans from a relatively high positive number to negative number. The same is true for comparisons between activities and semelfactives ($p = .20$) with a 95% *CI* of .43 to -.19, statives and accomplishments ($p = .30$) with a 95% *CI* of .12 to -.21, statives and semelfactives ($p = .33$) with a 95% *CI* of .40 to -.26, statives and achievements ($p = .15$) with a 95% *CI* of .46 to -.15, semelfactives and achievements ($p = .35$) with a 95% *CI* of .33 to -.50, semelfactives and accomplishments ($p = .23$) with a 95% *CI* of .44 to -.22, and achievements and accomplishments ($p = .08$) with a 95% *CI* of .50 to -.11. These *CI*'s indicate insufficient sample size to detect a difference between the different verb types within the SLI group.

The second notable *CI* pattern is that for some tests, even though the lower boundary is a negative number, the interval is small, which means it is possible that the true proportion lies somewhere close to zero. This is seen in comparisons between activities and accomplishments ($p = .46$) with a 95% *CI* of .12 to -.14 and activities and statives ($p = .22$) with a 95% *CI* of .08 to -.18.

Comparisons between the TD and SLI groups

The overall language groups were compared to see if any differences could be detected in 3rd/s/ marking by language status. Table 10 shows the comparison in proportions between the TD group and SLI group by lexical aspect category. The CIs are reported next to the corresponding p -value and indicate where the expected proportion would be found if there were no difference between the two groups. It can be seen that TD children marked significantly more activities, accomplishments, and stative verbs than their peers with SLI.

Table 10: Comparisons between TD & SLI marking by verb type

Verb Type	Proportion of TD Marked	Proportion of SLI Marked	C.I.	p -value
ACT	.43	.21	.29 to .15	<0.001
ACC	.42	.22	.35 to .05	0.008
SEM	.52	.33	.54 to -.17	.18
ACH	.50	.42	.34 to -.23	.30
STS	.59	.26	.46 to .19	<0.001

The proportion of marked to unmarked activities was .43 for the TD group compared to .21 for the SLI group. The difference in proportion of marked verbs between the two groups was significant ($p < .001$), and is corroborated by the confidence interval (CI) at the 95% level, which ranged from .29 to .15. The upper boundary of the confidence interval is lower than the observed proportion, indicating that the difference between the two groups would not be expected unless there was a true difference between the two groups.

The TD group's proportion of marked accomplishments was .42 compared to the SLI group's proportion of .22. The CI at 95% was .35 to .06, and the difference was statistically significant ($p = .008$). The TD group's proportion of marked stative verbs

was .59 compared to .26 for the SLI group. The *CI* at 95% was .46 to .18, and the difference was again statistically significant ($p < .001$).

There were no significant differences between the TD and SLI groups' marking of semelfactives ($p = .19$), with a *CI* that 95% ranged from .54 to -.17. Results were similar for achievements ($p = .30$) with a 95% *CI* of .40 to -.23. Again we see the negative lower boundary for a significance test of a proportion as an indication of a sample size that is too small to approximate a normal distribution, as demonstrated by the comparatively reduced number of opportunities for both the semelfactive and achievement verb types across both groups.

All further discussion of tests will be for the groups that have been subdivided by dialect strength. It should be expected that if the sample size was too small to produce statistically valid results for the event types semelfactives and achievements that the subdivided groups will not show a change in trend. Therefore, results pertaining to these two lexical aspect categories will not be discussed in detail.

Results of comparisons between subdivided groups

Table 11 summarizes groups where tests showed a significant differences between overt markings of 3rd/s/. The groups with significantly greater overt markings have been highlighted. It should be noted that the NoVSLI group had one participant. Therefore, conclusions about this population cannot be drawn upon from this study.

Table 11: Comparisons with significant results

TD	SLI
Strong&Some Variation TD	Strong&Some Variation SLI
St&SmVTD	NoVTD
Strong Variation TD (StVTD)	Strong Variation SLI (StVSLI)
Some Variation TD (SmVTD)	Some Variation SLI (SmVSLI)
No Variation TD (NoVTD)	<i>No Variation SLI (NoVSLI)</i>
StVTD	SmVTD
StVTD	NoVTD
SmVTD	NoVTD
StVSLI	NoVTD
StVSLI	SmVSLI
SmVSLI	NoVTD
SmVSLI	<i>NoVSLI</i>
StVSLI	<i>NoVSLI</i>

AAE-Speaking Children's Marking of 3rd/s/

When the No Variation group was removed from the overall groups of TD children and children with SLI, a similar pattern of overt marking was also seen, indicating that TD children who speak AAE are marking 3rd/s/ at a greater proportion than their language-disordered peers. The TD dialect groups marked significantly more activity events and stative verbs than their peers with SLI. Table 12 shows the differences between the two groups.

Table 12: AAE-speaking children's marking of verb by lexical category

	Strong & Some Variation Typically Developing Children <i>n</i> =42				Strong & Some Variation Children with SLI <i>n</i> =20					
Verb Type	Marked	Unmarked	Total	Proportion Marked	Marked	Unmarked	Total	Proportion Marked	C I.	<i>p</i> -value
ACT	142	291	433	0.33	32	138	170	0.19	.21 to .06	<0.001
ACC	19	53	72	0.27	8	38	46	0.19	.23 to -.07	.15
SEM	4	13	17	0.26	1	5	6	0.25	.37 to -.35	.47
ACH	9	21	30	0.31	3	6	9	0.36	.28 to -.38	.38
STS	47	63	110	0.43	12	38	50	0.25	.33 to .03	.01

It is interesting to note that the pattern of marking trends in a different direction in this test. The difference in activity marking is more significant than the difference in stative marking between the two groups; this is due to a subtle shift in the SLI group in stative marking, such that the children with SLI are marking a greater proportion of statives, so the difference between the two groups is not as large. However, when the StV and SmV groups were further divided, the two groups did not mark 3rd/s/ in similar patterns. No differences were found between the language groups within the StV group, but differences were found between the TD and children with SLI within the SmV group.

Strong Variation TD and Strong Variation SLI

There were no statistical differences between the TD and SLI groups within the strong variation dialect category. Table 13 shows the number of verb opportunities for the StV groups, the proportion of marked to unmarked forms, corresponding CI for expected proportion if there were no difference in proportion and *p*-value for significance tests.

Table 13: Comparison of StV AAE-speaking children's verb marking by lexical category

	Strong Variation Typically Developing Children <i>n</i> =34				Strong Variation Children with SLI <i>n</i> =14					
Verb Type	Marked	Unmarked	Total	Proportion Marked	Marked	Unmarked	Total	Proportion Marked	CI	<i>p</i> -value
ACT	68	235	303	.23	19	107	126	.16	.15 to .01	.05
ACC	13	51	64	.21	5	26	31	.18	.81 to .12	.37
SEM	2	11	13	.2	1	4	5	.29	.83 to .50	.33
ACH	5	17	22	.25	1	4	5	.29	.51 to .51	.43
STS	16	54	70	.24	12	30	42	.30	.89 to .44	.24

Negative lower-boundary confidence intervals are present for every test, as well as a wide range in the confidence intervals, all of which indicate a small sample size

across all tests. There were no statistical differences between the StVTD and StVSLI groups' marking for activities ($p = .05$) with a 95% *CI* of .15 to -.01, accomplishments ($p = .36$) with a 95% *CI* of .20 to -.13, semelfactives ($p = .33$) with a 95% *CI* of .31 to -.48, achievements ($p = .43$) with a 95% *CI* of .34 to -.41, or stative verbs ($p = .24$) with a 95% *CI* of .11 to -.23.

There were also no differences within either the StVTD or the StVSLI groups for differences in marked to unmarked verbs by verb category. Tables 14 & 15 show the p -value and *CI*s for within group differences in marking of lexical aspect categories.

Table 14: StVTD comparisons of lexical categories

StVTD p -value & (CI) $n=34$	ACT	ACC	SEM	ACH
ACC	.40 (.12 to -.10)	-	-	-
SEM	.41 (.18 to -.23)	.46 (.21 to -.24)	-	-
ACH	.39 (.20 to -.16)	.35 (.24 to -.16)	.36 (.22 to -.32)	-
STS	.43 (.10 to -.12)	.37 (.12 to -.16)	.33 (.40 to -.26)	.45 (.21 to -.19)

Table 15: StVSLI comparisons of lexical categories

StVSLI p -value & (CI) $n=14$	ACT	ACC	SEM	ACH
ACC	.36 (.12 to -.17)	-	-	-
SEM	.18 (.47 to -.21)	.27 (.46 to -.26)	-	-
ACH	.18 (.47 to -.21)	.27 (.46 to -.26)	.50 (.47 to -.47)	-
STS	.02 (.01 to -.29)	.13 (.07 to -.30)	.48 (.35 to -.37)	.48 (.35 to -.37)

Some Variation TD and SLI

Significant differences were found between the SmVTD and SmVSLI groups that are similar to the results obtained from the aggregated data set. The TD group marked a

significantly greater proportion of activities, accomplishments, and stative verbs. Table 16 shows the marked and unmarked proportions, CIs, and p -values for each lexical category.

Table 16: Comparison of SmV AAE-speaking children's verb marking by lexical category

Verb Type	Some Variation Typically Developing Children <i>n</i> =7				Some Variation Children with SLI <i>n</i> =6				C I	p -value
	Marked	Unmarked	Total	Proportion Marked	Marked	Unmarked	Total	Proportion Marked		
ACT	77	57	134	.57	13	31	44	.30	.23 to -.39	.001
ACC	6	2	8	.70	3	12	15	.24	.36 to -.54	.009
SEM	2	2	4	.50	0	1	1	.33	.76 to -.38	.32
ACH	4	4	8	.50	2	2	4	.50	.70 to -.43	.50
STS	31	9	40	.76	0	8	8	.10	.70 to -.38	<.001

Statistical differences between the StVTD and StVSLI groups' marking of 3rd/s/ were found for activities ($p = .001$) with a 95% CI of .43 to .11, accomplishments ($p = .009$) with a 95% CI of .81 to .12, and stative verbs ($p < .001$) with a 95% CI of .88 to .44.

Again, results for within group comparisons were similar to the aggregated groups for the SmVTD group. They marked significantly more stative verbs more than activities.

Table 17: SmVTD comparisons of lexical categories

SmVTD p -value & (CI) $n=7$	ACT	ACC	SEM	ACH
ACC	.22 (.17 to -.42)	-	-	-
SEM	.36 (.34 to -.48)	.21 (.29 to -.69)	-	-
ACH	.33 (.25 to -.39)	.19 (.22 to -.62)	.05 (.51 to -.51)	-
STS	.01 (.34 to .04)	.34 (.25 to -.37)	.09 .16 to -.68	.05 (.07 to -.60)

Consistent with the aggregated SLI group, there were no statistically different within-group differences for the SmVSLI group. Despite a p -value that appears to be significant for the difference in achievements and statives, the extremely wide CI prevents an interpretation of significance.

Table 18: SmVSLI comparisons of lexical categories

SmVSLI p -value & (CI) $n=6$	ACT	ACC	SEM	ACH
ACC	.30 (.31 to -.17)	-	-	-
SEM	.46 (.58 to -.52)	.36 (.67 to -.47)	-	-
ACH	.17 (.62 to -.23)	.12 (.71 to -.18)	.32 (.50 to -.83)	-
STS	.09 (.43 to -.02)	.19 (.41 to -.14)	.16 .80 to -.33	.04 (.84 to -.04)

No Variation TD & SLI

Only one child comprised the NoVSLI group. Therefore, comparisons in 3rd/s/ marking within that group as well as tests across the NoVTD and NoVSLI should not be considered statistically valid.

Table 19: Comparison of NoV children's verb marking by lexical category

	No Variation Typically Developing Children <i>n</i> =16				No Variation Children with SLI <i>n</i> =1					
Verb Type	Marked	Unmarked	Total	Proportion Marked	Marked	Unmarked	Total	Proportion Marked	CI	<i>p</i> -value
ACT	124	61	185	.67	5	1	6	.75	.25 to -.44	.34
ACC	30	15	45	.66	2	0	2	.75	-.19 to -.79	.38
SEM	11	1	12	.86	1	0	1	.67	.15 to -.75	.22
ACH	15	3	18	.80	1	0	1	.67	.11 to -.61	.28
STS	61	12	73	.82	1	0	1	.67	-.36 to -.69	.24

However, significant results were found within the NoVTD group for differences in 3rd/s/ marking based on the lexical aspect of the verb. The NoVTD children, who are essentially GAE speakers, marked a greater proportion of stative verbs compared to both activities and accomplishments. Furthermore, activities and accomplishments were marked at essentially the same proportion.

Table 20: NoVTD comparisons of lexical categories

NoVTD <i>p</i> -value & (CI) <i>n</i> =16	ACT	ACC	SEM	ACH
ACC	.46 (.16 to -.14)	-	-	-
SEM	.07 (.38 to -.01)	.07 (.43 to -.03)	-	-
ACH	.11 (.32 to -.06)	.17 (.36 to -.08)	.33 (.31 to -.20)	-
STS	.006 (.27 to .05)	.02 (.33 to -.00)	.38 .24 to -.17	.40 (.17 to -.22)

As expected, results of the single-subject NoVSLI category were not significant. The wide range in confidence intervals and negative lower boundaries reinforce the limited sample size of these tests.

Table 21: NoVSLI Comparisons of Lexical Categories

NoVSLI <i>p</i> -value & (CI) <i>n</i> =1	ACT	ACC	SEM	ACH
ACC	.50 (.52 to -.52)	-	-	-
SEM	.39 (.53 to -.70)	.40 (.60 to -.76)	-	-
ACH	.39 (.53 to -.70)	.40 (.60 to -.76)	.50 (.75 to -.75)	-
STS	.39 (.70 to -.53)	.40 (.76 to -.60)	.50 (.75 to -.75)	.50 (.75 to -.75)

Further comparisons of TD children

To determine the role that dialect strength played in marking 3rd/s/ by TD children, the different dialect strength groups of TD children were compared to each other. Dialect strength affects 3rd/s/ marking, as differences were observed between the StVTD group and the SmVTD group.

Table 22: SmVTD compared to StvTD verb marking by lexical category

Verb Type	Some Variation Typically Developing Children <i>n</i> =7				Strong Variation Typically Developing Children <i>n</i> =34				C I	<i>p</i> -value
	Marked	Unmarked	Total	Proportion Marked	Marked	Unmarked	Total	Proportion Marked		
ACT	77	57	134	.57	68	235	303	.23	44 to .25	<0.001
ACC	6	2	8	.70	13	51	64	.21	.79 to .19	0.001
SEM	2	2	4	.50	2	11	13	.2	.75 to -.15	0.09
ACH	4	4	8	.50	5	17	22	.25	.61 to -.11	0.08
STS	31	9	40	.76	16	54	70	.24	.69 to .36	<0.001

The greatest difference between TD groups was between the StVTD group and the NoVTD group, which would be expected if one considers the obligatory nature of 3rd/s/ in GAE to the optional use of it in AAE. Therefore, it should not be surprising that the group comprised of GAE-speaking children would mark at rates significantly

different than TD peers from the AAE-speaking group. Unlike the previously discussed tests, the NoVTD group marked significantly more 3rd/s/ verbs than the StVTD group across all verb categories with sufficient statistical strength.

Table 23: NoVTD compared to StvTD verb marking by lexical category

	No Variation Typically Developing Children <i>n</i> =16				Strong Variation Typically Developing Children <i>n</i> =34					
Verb Type	Marked	Unmarked	Total	Proportion Marked	Marked	Unmarked	Total	Proportion Marked	C I	<i>p</i> -value
ACT	124	61	185	.67	68	235	303	.23	.52 to .36	<0.001
ACC	30	15	45	.66	13	51	64	.21	.62 to .28	<0.001
SEM	11	1	12	.86	2	11	13	.2	.93 to .38	<0.001
ACH	15	3	18	.80	5	17	22	.25	.80 to .30	<0.001
STS	61	12	73	.82	16	54	70	.24	.72 to .46	<0.001

However, these differences were not evident when the SmVTD group was compared to the NoVTD group. Dialect strength is therefore greatly influencing the production of 3rd/s/.

Table 24: NoVTD compared to SmVTD verb marking by lexical category

	No Variation Typically Developing Children <i>n</i> =16				Some Variation Typically Developing Children <i>n</i> =7					
Verb Type	Marked	Unmarked	Total	Proportion Marked	Marked	Unmarked	Total	Proportion Marked	C I	<i>p</i> -value
ACT	124	61	185	.67	77	57	134	.57	.20 to -.01	0.04
ACC	30	15	45	.66	6	2	8	.70	.27 to -.36	0.40
SEM	11	1	12	.86	2	2	4	.50	.80 to -.08	0.05
ACH	15	3	18	.80	4	4	8	.50	.66 to -.06	0.05
STS	61	12	73	.82	31	9	40	.76	.22 to -.10	0.21

Furthermore, when the Strong and Some groups were combined and compared to the NoVTD group, the differences in overt marking of 3rd/s/ were again different across all lexical categories. Therefore, the SmVTD groups overt marking of 3rd/s/ was more like the NoVTD group than the StVTD group overall.

Table 25: St&SmVTD compared to NoVTD by lexical category

Verb Type	Strong & Some Variation Typically Developing Children <i>n</i> =42				No Variation Typically Developing Children <i>n</i> =16				C I	<i>p</i> -value
	Marked	Unmarked	Total	Proportion Marked	Marked	Unmarked	Total	Proportion Marked		
ACT	142	291	433	0.33	124	61	185	.67	.42 to .26	<0.001
ACC	19	53	72	0.27	30	15	45	.66	.56 to .22	<0.001
SEM	4	13	17	0.26	11	1	12	.86	.87 to .32	<0.001
ACH	9	21	30	0.31	15	3	18	.80	.73 to .25	<0.001
STS	47	63	110	0.43	61	12	73	.82	.52 to .27	<0.001

Further comparisons of children with SLI

As expected, the role dialect strength played in 3rd/s/ marking for children with SLI could not be ascertained for tests involving the NoVSLI group. Therefore only the SmVSLI and StVSLI groups could be compared. Within this test, only one difference was observed for the event group activities; the SmVSLI group marked more activities than their peers who spoke a strong variation of GAE.

Table 26: SmVSLI compared to StVSLI by lexical category

	Some Variation Children with SLI <i>n</i> =6				Strong Variation Children with SLI <i>n</i> =14					
Verb Type	Marked	Unmarked	Total	Proportion Marked	Marked	Unmarked	Total	Proportion Marked	C I	<i>p</i> -value
ACT	13	31	44	.30	19	107	126	16	.15 to - .01	.02
ACC	3	12	15	.24	5	26	31	18	.81 to .12	.33
SEM	0	1	1	.33	1	4	5	29	.83 to - .50	.44
ACH	2	2	4	.50	1	4	5	29	.51 to - .51	.21
STS	0	8	8	.10	12	30	42	30	.89 to .44	.10

Across Group Differences

The final set of analysis was completed to determine whether differences between language status and dialect status would reveal a difference in 3rd/s/ marking. As would be expected, significant differences were found between the NoVTD and SmVSLI groups for stative verbs and both verbs of duration, activities and accomplishments.

Table 27: NoVTD compared to SmVSLI by lexical category

	No Variation Typically Developing Children <i>n</i> =16				Some Variation Children with SLI <i>n</i> =6					
Verb Type	Marked	Unmarked	Total	Proportion Marked	Marked	Unmarked	Total	Proportion Marked	C I	<i>p</i> -value
ACT	124	61	185	.67	13	31	44	.30	.51 to .22	<0.001
ACC	30	15	45	.66	3	12	15	.24	.67 to .18	<0.001
SEM	11	1	12	.86	0	1	1	.33	1.09 to - .04	0.03
ACH	15	3	18	.80	2	2	4	.50	.74 to -.14	0.07
STS	61	12	73	.82	0	8	8	.10	.93 to .52	<0.001

Similar results were found for comparisons between the NoVTD and StVSLI groups.

Table 28: NoVTD compared to StVSLI by lexical category

	No Variation Typically Developing Children <i>n</i> =16				Strong Variation Children with SLI <i>n</i> =14					
Verb Type	Marked	Unmarked	Total	Proportion Marked	Marked	Unmarked	Total	Proportion Marked	C.I	<i>p</i> -value
ACT	124	61	185	.67	124	61	126	.67	.60 to .42	<0.001
ACC	30	15	45	.66	30	15	31	.66	.67 to .29	<0.001
SEM	11	1	12	.86	11	1	5	.86	.95 to .19	0.004
ACH	15	3	18	.80	15	3	5	.80	.89 to .14	0.006
STS	61	12	73	.82	61	12	42	.82	.69 to .37	<0.001

Summary

Results of this study reveal differences in overall production of 3rd/s/ by TD children and children with SLI. Children with SLI do not mark 3rd/s/ at the same rates as their TD peers. This pattern is evident for combined groups of children that include GAE speakers and speakers of AAE as well as combined groups of children who only speak AAE. This study found that AAE-speaking children as a group mark 3rd/s/ at a different proportion than children with SLI.

The types of verbs that are marked within the TD overall group are also different: TD children mark stative verbs more than activities and accomplishments. TD AAE-speaking children mark stative verbs and activity events for 3rd/s/ more than their language impaired peers. Furthermore, no distinctions in production of 3rd/s/ can be found within the SLI group.

Finally, dialect strength plays a role in 3rd/s/ marking, as no differences in 3rd/s/ marking were observed between children who are TD and speak a strong variation of GAE and their peers with SLI; however, children who speak some variation mark more activities, accomplishments, and stative verbs more than their TD peers.

CHAPTER IV

Discussion

Findings of this Study

The two purposes of this study were to determine whether the presence of 3rd/s/ in AAE is governed by the lexical aspect of the verb and to determine whether TD children who speak AAE mark 3rd/s/ in a manner that is different from their peers with SLI. This study found that the lexical aspect of the verb does indeed play a role in 3rd/s/ marking and children who speak AAE and are TD mark 3rd/s/ at rates that are different than their peers with SLI.

Verbs that were marked with 3rd/s/ were verbs that had aspectual readings of stativity (*loves, feels*) and duration (activities – *drives around* and accomplishments – *drives home*), which means that eventualities which hold and are unchanging, and eventualities which occur over some extended period of time are marked more frequently than verbs that have an instantaneous reading. Furthermore, when the aspectual categories were compared within the TD group as a whole, states were marked more than both activities and accomplishments.

TD children marked 3rd/s/ at different rates than their peers with SLI. This finding held when only children who spoke AAE were compared, which indicates that

children who speak AAE behave differently than children with SLI with regard to this grammatical morpheme. The aggregated TD children had variations in their rate of 3rd/s/ marking, such that differences in lexical aspect could be found within the overall group; the children with SLI did not show any pattern of 3rd/s/ marking, short of reduced rates of production, and may not be sensitive to the lexical aspect of the verb and how it impacts grammatical morphology. This is an important finding for child-language development across dialects.

Furthermore, dialect strength played a significant role in the rates of 3rd/s/ production within the TD groups. Children who spoke a strong variation of GAE used 3rd/s/ at rates less than 30%; children who spoke some variation of GAE produced 3rd/s/ at rates at approximately 60%, and children who were essentially GAE speakers marked 3rd/s/ at rates of about 70%. Comparisons between the dialect groups also showed a continuum of dialect marking, where the StVTD group marked at a different rate than the SmVTD group, but the SmVTD group did not mark at a different rate than the NoVTD group. However, when the StVTD and SmVTD groups were combined, they marked at different rates than the NoVTD group. These findings are important for considerations of the “optionality” of 3rd/s/ in AAE.

Children who speak AAE and have SLI are less sensitive to lexical aspect and do not overtly mark 3rd/s/ at rates that are similar to their same-age peers who are typically developing. The results of this study are consistent with previous studies that show that children with language disorders have reduced sensitivity to grammatical aspect morphemes compared to same-age peers (Fletcher, Leonard, Stokes, & Wong, 2005). The strong use of aspect in AAE may indicate that aspect could be a particularly salient

marker of SLI in AAE-speaking children, as it has several morpho-syntactic models under which duration, habituality, and completion are marked (Green, 2002). If TD children who speak AAE mark more stative and durative verbs than their peers with SLI, this could be an indication that even in the presence of reduced rates of production, the children with SLI are not sensitive to markers of aspect. On the other hand, the children who spoke a strong variation of GAE were similar in their 3rd/s/ marking to children with SLI. This finding shows that variability is still an issue in terms of our understanding of 3rd/s/ in AAE and continues to challenge the field of speech-language pathology with regard to the assessment and treatment of morpho-syntactic impairment in this population.

Limitations

One limitation of this study was the small sample size for statistical comparisons within the dialect groups. Findings for this study are limited, especially with regard to the NoVSLI group, which only contained one child. Larger samples of children with language disorders that have also been subdivided by dialect will help identify patterns of overt production and benefit assessment and intervention.

Another limitation was the infrequent use of semelfactives and achievements in the children's spontaneous discourse. Though the naturalistic collection process of the data would indicate that these words are of low frequency in child-AAE, it would be beneficial for future studies to continue to probe for these verb types to see if they facilitate grammatical morpheme production, particularly telic forms for the retention of past tense *-ed* in AAE.

Future Research

The language sample transcripts that were analyzed in this study provided a direct opportunity for the use of 3rd/s/ using subject anaphora. The children were shown pictures of a person in a career context and were asked “what does this person do?” The answer required the use of 3rd/s/ but also required the child to reflect on the job that the person participates in every day, on a continual and habitual basis. This context facilitated the use of activities and accomplishments, as the child could respond “flies a plane,” which would be an activity, or “bakes a cake” which would be an accomplishment. The TD children of all dialect strengths were sensitive to these constraints, and further analysis of the samples may yield more information about the linguistic contexts that facilitated 3rd/s/ use in the StVTD group, which did not mark at rates above 30% overall.

A fine analysis of the rate of elliptical production verses production of the subject-verb construction would be beneficial to see if any link between elliptical constructions and retention of 3rd/s/ can be found. Pawlowska et al. (2008) found that subject verb construction facilitates progress in intervention, and Roeper (2004) found that subject ellipses are an area of particular difficulty for children with SLI. Future research may probe whether the overt production of 3rd/s/ in the auxiliary form *does* provides sufficient cueing to use the 3rd/s/ form to mark tense, agreement, or aspect in assessment. For example, children with SLI in this study sometimes responded to the question “What does he/she do?” with the bare stem form, as in “fly,” or “bake” and did not include a subject. These may be examples of ways in which tense, agreement, or aspect production is reduced based on the absence of a subject referent by the child with SLI.

Summary of Findings

These findings are a positive step toward distinguishing TD & children with SLI who also speak AAE. This study also provides evidence for the role of dialect strength with regard to production of 3rd/s/. Furthermore, the overt marking of 3rd/s/ in TD children on durative verbs and stative verbs may help researchers understand the role 3rd/s/ plays in lexical and grammatical aspect of both GAE and AAE- speaking populations

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