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Dialect Use, Language Abilities, and Emergent Literacy Skills of Prekindergarten Children Who Speak African American English

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DIALECT USE, LANUGAGE ABILITIES, AND EMERGENT LITERACY SKILLS OF PREKINDERGARTEN CHILDREN WHO SPEAK AFRICAN AMERICAN ENGLISH

by

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ABSTRACT

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Purpose. The purpose of this study was to gain a better understanding of the complex relationship between spoken language and emergent literacy skills for children who speak African American English (AAE). Therefore, this study examined children's language proficiency, dialect use, and emergent literacy skills at the beginning of Head Start preschool and throughout the entire academic year.

Methods. This study analyzed scores from a database of 120 preschool children who spoke AAE. Data included narrative retells of the wordless picture book *Frog Where Are You?* that were transcribed utilizing Systematic Analysis of Language Transcript (SALT) Software. Narrative retells were then coded for dialect density (DDM), Narrative Scoring Scheme (NSS) and an adapted Subordination Index (SI) score that accounted for AAE morphosyntactic features. Additional measures included the Peabody Picture Vocabulary Test (PPVT) and two subtests of the Phonological Awareness Literacy Screening for Preschool (PALS-PreK) (i.e. print awareness and alphabet knowledge). Taken together, these measures were analyzed for potential relationships using correlation analyses, repeated measures analysis of variance (ANOVA), and multiple regression analyses.

Results. Analysis revealed significant negative correlations between DDM, print awareness, PPVT, and NSS at the beginning of Head Start. However, a multiple regression analysis

indicated that there was no unique relationship between DDM and print awareness scores. Upon examining growth across the academic year, children demonstrated significant gains in their NSS and emergent literacy scores when comparing fall and spring performance; however, changes in dialect were not related to changes in NSS scores and emergent literacy gains were again shown to not be exclusively related to dialect. Overall, NSS scores most predicted measures of emergent literacy across analyses, indicating that any relationship between dialect use and emergent literacy skills was fully explained by the children's oral language skills alone.

Conclusions. Because dialect use did not uniquely predict language or emergent literacy skills, we concluded that, at this early stage in literacy development, dialect use is more of an independent factor. This adds to the work of Terry and Connor (2012), who found dialect use to be independent of word reading, receptive vocabulary abilities, and phonological awareness skills. These findings will help clinicians working with diverse speakers better understand the relationship between dialect use, language skills, and emergent literacy abilities, as well as better support children's literacy development at this crucial early stage. Due to small sample sizes and the inclusion of only two dimensions of emergent literacy skills, caution should be used when generalizing and interpreting the findings.

To

Dr. Dean Baldwin, my Papa and the fellow researcher in the family

whose resilience, sense of humor, and positive impact

will always inspire me

Go Bucks!

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LIST OF ABBREVIATIONS

AAE	African American English
ANOVA	A Repeated Measures Analysis of Variance
LSA	Language Sample Analysis
MAE	Mainstream American English
NSS	Narrative Scoring Scheme
PALS-PreK	Phonological Awareness Literacy Screening for Preschool
PPVT-4	Peabody Picture Vocabulary Test, Fourth Edition
SALT	Systematic Analysis of Language Transcript
SES	Socioeconomic Status
SI	Subordination Index

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Chapter 1

Introduction

Dialectal Variations of the English Language

The term "dialect" is used to refer to variations within a given language. These variations can be found in vocabulary, grammar, phonology, and/or pragmatics (O'Grady, Archibald, Aronoff, & Rees-Miller, 2001). Such dialects within Mainstream American English (MAE) can arise due to an individual's geographical location and are therefore termed "regional dialects." For example, the Midwestern dialect tends to have variations of certain phonemes (e.g. /u/) and region-specific vocabulary (e.g. "bubbler" for "drinking fountain") (Allen, 1973). While dialect can arise from these regional variations, dialects can also be sociocultural, as is the case with African American English (AAE).

African American English

AAE is a common sociocultural dialect of MAE that may be spoken by Black students (Connor & Craig, 2006). In comparison to other dialects, AAE is characterized by specific linguistic features in content (i.e. semantics), form (i.e. syntax), and use (i.e. pragmatics) (Battle, 2002). For this study, it is pertinent for all readers to have a foundational understanding of AAE's linguistic features, including patterns commonly found in its phonology, vocabulary, and morphology/syntax.

Phonology. The phonetic inventories of AAE and MAE can highly resemble each other, depending on the speaker. Specifically, each consonant in AAE can also found in MAE; each vowel in MAE, aside from three diphthongs, can be found in AAE. However, there are several distinct features that are common to AAE's phonology. These include (1) the exclusion or substitution of a word's medial or final consonant, (2) the absence of unstressed initial phonemes

and syllables, and (3) the reduction of a word ending's final consonant in a cluster (Battle, 2002; Terry, 2012).

Vocabulary. Specific lexical features can also be unique to AAE. A person's vocabulary reflects individual experiences, including influences from region, geography, generation, socioeconomic status (SES), race, and/or religion. Therefore, any vocabulary differences that arise when comparing MAE and AAE may indicate that the proposed lexical term in MAE is not found in an AAE speaker's lexicon, or vice versa. Alternatively, vocabulary differences may also suggest that different referents arise in AAE from the proposed lexical term: a word that has one denotation in MAE may have an entirely different meaning in AAE (Battle, 2002).

Morphosyntactic Features. Some of the more extensive differences between MAE and AAE can exist between their morphology and syntax. The multitude of potential differences is so diverse that it is complicated to condense them into general rules. Overall, however, AAE has several common morphological and syntactical patterns, including specific forms for verb use, descriptors, multiple negatives, and hypercorrection (Battle, 2002; Connor & Craig, 2006). Some of these features are detailed below.

AAE's grammatical features can impact the past tense of both irregular and regular verbs (Battle, 2002; Connor & Craig, 2006). Examples include saying "cash" in AAE versus "cashed" in MAE, as well as "done" in AAE versus "did" in MAE (Battle, 2002, p. 43). According to Battle (2002), noun-verb agreement can also be affected, such as saying "he walk (vs. he walks)" (p. 43). AAE also often employs double modals, which can result in differences between MAE and AAE when comparing possessive "s" and plural "s." While MAE only permits one superlative or comparative descriptor per verb or noun phrase, combinations such as "most prettiest" are acceptable in AAE. Finally, in AAE, multiple negatives may be used in one

sentence, the suffix "-self" may be added to personal pronouns, and "even" may be used as an intensifying adverb (Battle, 2002).

Another distinction between AAE and MAE is that, in the morphology of AAE, hypercorrection may be reflected in numerous grammatical forms. This indicates that a grammatical morpheme has been overgeneralized to an irregular word, even though the irregular word is already portraying that morpheme's function. In AAE, such overgeneralization may occur in pluralization (e.g. "three womens" in AAE versus "three women" in MAE), with the possessive morpheme 's (e.g. "Joe's Smith house" in AAE versus "Joe Smith's house" in MAE), and with subject-verb agreement in the third person (e.g. generalizing to say "I talks," "you talks," and "they talks") (Battle, 2002).

A final grammatical feature of note that speakers of AAE may use involves the infinitive verb "to be" (Battle, 2002; Connor & Craig, 2006). In this case, the words "is" and "are" may be silenced, such as "she a girl" versus "she is a girl." Additionally, subject-verb agreement may be neutralized (e.g., "I was here," "you was here," and "they was here"). Finally, "be" may be used as either (1) a primary verb for "is," "am," or "are," or (2) the habitual tense, such as saying "My dad be coming home soon" (Battle, 2002).

African American English and Literacy

Given the known differences between MAE and AAE, there is a continual debate in the field of speech-language pathology regarding if and how children's dialect use influences their literacy skills. Research in this area has been particularly limited when evaluating the early stage of emergent literacy. Therefore, this study aims to provide further understanding of the complex relationship between dialect use and emergent literacy skills for children who speak AAE. Such insight will provide clinicians working with diverse populations with a stronger understanding of

how to best support these students. When evaluating this relationship, the role of oral language as a potential mediator must also be considered, given the strong association between oral language and emergent literacy (e.g. Beattie & Manis, 2014).

Summary and Rationale

Overall, to better understand the complex relationship between emergent literacy skills, language abilities, and dialect use when children first begin their formal preschool education and throughout the entire academic year, this study will aim to answer the following questions.

Research Questions

(1) What is the relationship between dialect density, general language, and emergent literacy at the beginning of Head Start?

(2) Does baseline dialect and oral language ability predict changes in emergent literacy and receptive vocabulary across an academic year?

(3) Do changes in dialect use over the course of a year influence changes in oral language and emergent literacy measures?

Chapter 2

Literature Review

Influence of Dialect on Literacy

Previous research has investigated the relationship between children's diverse dialect use and their literacy skills. Gatlin and Wanzek (2015) conducted a meta-analysis of the 19 studies published between 1998 and 2014 that studied this relationship. Overall, they found that a moderate, negative and significant relationship existed between dialect use and overall literacy skills. However, the researchers noted that a significant amount of heterogeneity among effect sizes persisted in all analyses but one. This heterogeneity was also not explained in any of the analyses by socioeconomic status (SES) or grade level, which were the study moderators. Therefore, this meta-analysis confirms that (1) a relationship between literacy development and spoken dialect use does exist, and (2) this relationship is more complex, and "one that cannot be explained simply" (Gatlin & Wanzek, 2015, p. 1314).

Proposed Explanations

The Linguistic Interference Theory. There are two prominent, proposed explanations surrounding the relationship between dialect and literacy skills. The first is the linguistic interference theory. The linguistic interference theory states that AAE's previously mentioned linguistic differences impede literacy development in children. In this view, because of the differences between the spoken dialect used by the child and the verbal and written MAE forms used in literacy activities, the child may face more challenges when developing literacy skills (Gatlin & Wanzek, 2015). For example, a phonological substitution that a speaker of AAE may use is /d/ instead of /ð/ (i.e. saying "dey" in AAE vs. "they" in MAE) (Battle, 2002). The linguistic interference theory would argue that children using this feature would experience

dissonance when they encounter such differences in literacy activities, thus impeding their overall literacy development (Gatlin & Wanzek, 2015; Washington & Craig, 2002; Terry, 2012).

The Linguistic Awareness/Flexibility Hypothesis. In contrast, the linguistic awareness/flexibility hypothesis suggests that the relationship between dialect and literacy is overall more complex, arguing that dialect use can be a tool rather than a hinderance. In this view, dialect itself does not impact literacy; rather, it is children's abilities to shift between dialects, or their metalinguistic awareness, that impacts literacy development. As such, children's changes in situational dialect use, such as using AAE when speaking at home and MAE when writing at school, would demonstrate greater abilities to understand and manipulate language, ultimately leading to advantages in literacy development (Gatlin & Wanzek, 2015; Terry, 2012).

Summary. Overall, given the complexity of the relationship between dialect and literacy outcomes, researchers have concluded that further investigation is necessary at the different developmental stages, including its foundations in emergent literacy (Gatlin & Wanzek, 2015, Washington & Craig, 2002; Terry, 2012).

Dialect Use and Emergent Literacy Skills

Significance. It is important to evaluate dialect's influence on emergent literacy skills for several reasons. Although there are federal mandates to increase their test scores, children from language and racial minority backgrounds have consistently scored significantly lower on reading achievement tests when compared to their peers at both the state and national level (e.g. Bowman, Comer, & Johns, 2018). While the reasons for this are likely multifaceted, discussions rarely focus on dialect differences, even though many of the children in the groups that are lower achieving speak nonstandard dialects. Therefore, it is pertinent that educators understand the

effect of dialect use on literacy in its emerging beginnings as they work to best support their culturally and linguistically diverse students (Terry & Connor, 2012).

Previous Research. Despite the abundance of research exploring the relationship between AAE and literacy abilities, few studies have investigated AAE and children's pre-reading skills. Such research is integral to understand how to best support the complete literacy development of diverse speakers. Washington (2001) discusses the reading difficulty experienced by a disproportionately high percentage of African American children, particularly those from a lower SES, arguing that early intervention is necessary to best support these students. Such difficulty, she relates, may reflect a combination of factors. This may include dialect, but it also may indicate influences from poverty, literacy experiences in the home, and lower teacher expectations.

To investigate this further, Terry and Connor (2012) studied children's use of dialect and literacy skills at two time points: kindergarten and first grade. The researchers measured the children's amount of dialect used and several early reading/emergent literacy measures (e.g., word reading, receptive vocabulary abilities, and phonological awareness skills). Results indicated that dialect use predicted children's letter-word reading skills beyond their phonological awareness abilities. Children also decreased their use of dialect from kindergarten to first grade; however, this decrease in dialect over time was not significantly associated with the change in reading abilities. Therefore, the authors suggest that, for beginning readers, it is possible that literacy development over time does not depend on dialect use.

Terry (2012) also studied the relationship at one time point between emergent literacy skills and children's use of AAE in a sample of four-year-old children, 57.6% of whom were African American. The specific emergent literacy skills that were studied were alphabet

knowledge, print concepts, name writing, and phonological awareness. Overall, moderate, negative, significant correlations were found between the children's use of dialect variation and their emergent literacy skills, excluding name writing. However, it is important to note that, aside from nursery rhyme awareness, dialect variation was not found to be the sole contributor to the children's emergent literacy scores. Rather, orthographic knowledge and phonological awareness skills were also related to these scores. Therefore, the researcher suggests that dialect variation indirectly impacts emergent literacy skills and that children's metalinguistic skills, rather than the amount of spoken dialect, may be the prime factor. This research, then, suggests support for the linguistic awareness/flexibility hypothesis.

Connor and Craig (2006) also investigated African American preschoolers' emergent literacy skills and use of AAE. Children's vocabulary skills were assessed in the fall, their emergent literacy skills were assessed in the spring, and their dialect use was assessed through sentence imitation and oral narrative measures. Overall, they found a U-shaped relationship between dialect and emergent literacy skills. This indicates that children's sentence imitation, letter-word recognition abilities, and phonological awareness skills tended to be higher when either a large or small amount of AAE was used: when children used a moderate amount of AAE, these scores were lower. The researchers argued that this may be reflective of either children's ability to code-switch between the two dialects, or their overall understanding of language, again supporting the linguistic awareness/flexibility hypothesis.

Problem Statement

Together, studies examining AAE and emergent literacy have found that there is indeed a relationship between children's dialect use and their pre-reading skills (Connor & Craig, 2006; Terry, 2012; Terry & Connor, 2012). While the existence of this relationship is robust and has

been replicated, the nature of the relationship is complex and not well understood. As noted by Terry (2012), “because [dialect] speakers are disproportionately represented among children living in poverty, some children’s weaker language and vocabulary knowledge is more indicative of SES differences rather than dialect differences” (p. 73). Additionally, children enrolled in preschool programs are exposed to instruction designed to improve both language and emergent literacy skills. While there is this continual debate regarding the nature of the impact of AAE use on literacy skills, researchers agree that more studies are needed to investigate potential relationships. Thus, to best understand how spoken language impacts emergent literacy, it is necessary to track changes in language proficiency, dialect use, and emergent literacy from the beginning of preschool and throughout the entire academic year.

Chapter 3

Methods

Research Participants

Data from 120 preschool children were used in this study. All the children who participated were Black, spoke AAE, and were enrolled in a Head Start preschool program. Participants completed several measures of emergent literacy skills, language abilities, and a dialect density measure, all of which are detailed below.

Emergent Literacy Materials

The Phonological Awareness Literacy Screening for Preschool. To study the relationship between emergent literacy skills and dialect use, the Phonological Awareness Literacy Screening for Preschool (PALS Pre-K) was administered to participants in this study. The PALS-PreK is an assessment of emergent literacy that includes subtests on writing names, recognizing the alphabet and letter sounds, emerging sound awareness, word and print awareness, rhyme awareness, and nursery rhyme knowledge. For this study, only alphabet knowledge and print awareness subtest scores were used. Alphabet knowledge measures children's abilities to name letters and is scored within a range of 0 to 26. In contrast, print awareness assesses children's abilities to identify various components in a text and is scored within a range of 0 to 10. These two measures were chosen because they represent two diverse dimensions of emergent literacy skills, they were the only subtests conducted for approximately 20% of the study sample, and they have been studied in previous research with dialect speakers (e.g. Terry, 2012). In general, the PALS-PreK itself was chosen for this study because of its demonstrated reliability and validity.

Reliability. Reliability indicates the degree to which the assessment yields consistent results for its intended measurement. In its 2003-2004 pilot sample, the PALS-Pre-K was examined for two types of reliability: inter-rater reliability and internal consistency.

Inter-rater reliability indicates the likelihood that two test administrators will score the PALS-PreK in the same way, and it was determined utilizing Pearson correlation coefficients. In this sample, the PALS-PreK demonstrated acceptable inter-rater reliability. Additionally, internal consistency examines the reliability across test items, demonstrating that they all measure what they are intended to measure. To examine this for the PALS-PreK, Guttman split-half reliability and Cronbach's alpha level were used. To complete Guttman split-half reliability, the items for each task were randomly separated in half, and the relationship between the two halves was examined. In contrast, the Cronbach's alpha was computed by averaging the correlation of tasks within the PALS-PreK. Overall, results from both analyses demonstrated acceptable internal consistency.

Validity. The PALS-PreK was also chosen for this study because of its demonstrated appropriate validity. In general, validity indicates that an assessment measures what it is designed to measure. Three types of validity were evaluated for the PALS-PreK: content validity, construct validity, and both concurrent and predictive criterion-related validity.

Content validity indicates that an assessment's tasks are representative and relevant to the what is being evaluated overall. For the PALS-PreK, items were specifically selected for this purpose. In addition to considerations such as this, an advisory panel of early literacy development experts also reviewed and approved the content validity of the PALS-PreK.

Additionally, construct validity is defined as the ability to identify an assessment's underlying traits, as well as evaluate the degree to which these traits mirror the assessment's

basis, or theoretical model. The PALS-PreK's construct validity was evaluated through a factor analysis, resulting in only one factor with 2.9 as the eigenvalue. This suggests that the PALS-PreK exclusively measures emergent literacy, thus demonstrating acceptable construct validity.

Criterion-related validity has two components: concurrent and predictive validity. Concurrent validity indicates the extent to which an assessment relates to a current standard or criterion measure. The PALS-PreK was compared to High/Scope's Child Observation Record (COR) (1992), the Test of Early Reading Ability (TERA-3) (2001), and Sawyer's Test of Awareness of Language Segments (TALS) (1987), Part A. Overall, the correlations between the PALS-PreK and these independent measures ranged from medium-low but significant to medium-high and significant, indicating appropriate concurrent validity. Additionally, predictive validity evaluates the relationship between scores on the assessment as well as a relevant measure when time lapses between evaluations. To measure this, two longitudinal data analyses were completed on participants in the pilot sample with the PALS-PreK, PALS-K, and PALS 1-3 at appropriate times in the participants' academic careers. Results from a multiple regression analysis revealed that scores on the PALS-PreK significantly predicted performance on the PALS-K and the PALS 1-3, demonstrating appropriate predictive validity (Invernizzi, Sullivan, Meier, & Swank, 2004).

Preschool Language Skills

To fully understand any potential relationships between dialect and emergent literacy skills, we also chose to consider children's underlying language skills. Given the previously mentioned, strong association between oral language and emergent literacy (e.g. Beattie & Manis, 2014), to effectively examine this, we needed to have a valid and unbiased measure of language ability to determine if language skills mediate any relationship between dialect and

emergent literacy. Therefore, we chose to utilize Language Sample Analysis (LSA) for this study.

Language Sample Analysis

An LSA is commonly recommended for diverse speakers because of its capacity for assessing the language abilities of speakers from various cultural and linguistic backgrounds (e.g. Horton-Ikard, 2010). Since an LSA utilizes more naturalistic, "real-life" samples in its analysis, it also allows for an evaluation of a client's more functional language abilities without introducing bias from standardized testing (Miller, Andriacchi, & Nockerts, 2016), making it an overall preferable method for assessing the language abilities of AAE speakers. While there are multiple contexts for eliciting language samples, narrative LSA is particularly relevant when considering emergent literacy, given the strong relationship between oral narrative and phonological awareness measures (e.g. Gardner-Neblett & Iruka, 2015). Utilizing this one brief narration sample, researchers can analyze numerous linguistic characteristics at the same time (Heilmann, Miller, Nockerts, & Dunaway, 2010). Furthermore, narrative LSA has been shown to be a valid, unbiased method of assessing children who speak AAE (e.g. Terry, Mills, Bingham, Mansour, & Marencin, 2013). In fact, Terry et al. (2013) observed that there were two classes of measures taken from the narrative LSA that were particularly unaffiliated with a child's dialect: narrative macrostructure and complex syntax.

Narrative Macrostructure. Overall, macrostructure information provides researchers with a better understanding of children's organization of information within the narrative framework. In analysis, the child's complete narrative is studied for its structural features, with the clinician considering the organization pattern utilized by the child (e.g. Hughes, McGillivray, & Schmidek, 1997). The framework for this analysis is grounded in the story grammar tradition,

indicating that, in order to be told completely, all narratives must have a setting, problem, attempts to alleviate the problem, and consequences (Heilmann, Miller, Nockerts, & Dunaway 2010). Children's macrostructure abilities develop starting at preschool age and into school age.

Previous Research. Narrative macrostructure methods were chosen overall because of the previous research conducted on AAE-speaking children's narrative macrostructure abilities. A study conducted by Terry et al. (2013) detailed the oral narrative performance of AAE-speaking, typically developing prekindergarten children, examining the predictive and concurrent relationships between spoken dialect use, narrative performance, vocabulary, and story comprehension. The children's performance on generally used macrostructure measures of narrative performance were described throughout the school year. Results indicated that, on average, for each narrative measure, the AAE-speaking children achieved within age-appropriate expectations. Therefore, these results suggest that narrative macrostructure is a more dialect-neutral, unbiased assessment, as it more accurately represented children's language abilities regardless of spoken dialect use.

The Narrative Scoring Scheme. In this study, the Narrative Scoring Scheme (NSS) is used to analyze the macrostructure features of children's narratives. The NSS was designed for children starting at age 4 (Terry et al., 2013). It measures the following seven skill areas of children's narratives: the introduction, character development, mental and emotional states, referencing/listener awareness, conflict/resolution and event/reaction, cohesion, and the conclusion. Each category is then scored "using a 0 - 5 point scale. 5 points are given for 'proficient' use, 3 points for 'emerging' use, and 1 point for 'minimal' or 'immature' use. Scores of 2 and 4 are undefined and require scorer's judgement. A score of 0 is given for speaker errors" (SALT Software, LLC, 2017). These areas are then combined into a final composite score.

Overall, the NSS broadens the scope beyond the basic story grammar analysis to include these higher-level narrative skills. By scoring children's abilities on a scale, the NSS includes the capacity for measuring emerging skills, making it an ideal choice of measure for the younger children in this study. Additionally, by utilizing such interutterance text-level judgements made by the examiner, the NSS has also been shown to be more effective in diagnosing language impairment in children than previously utilized discrete coding schemes (Heilmann, Miller, Nockerts, & Dunaway, 2010).

Previous research has also shown that the NSS is evidence-based. In a study conducted by Heilmann, Miller, Nockerts, & Dunaway (2010), 129 typically developing five- and seven-year-olds completed oral retells of the book *Frog, Where Are You?,* and NSS scores were determined. Results demonstrated that the NSS is an "efficient and informative tool for documenting children's development of narrative macrostructure" (p. 154). Additionally, "The relationship between the NSS and microstructural measures demonstrates that it is a robust measure of children's overall oral narrative competence and a powerful tool for clinicians and researchers" (p. 154). Terry et al. (2013) also found that, for a sample of prekindergarten African American children, the NSS was an overall useful, ecologically valid, and teacher-friendly tool for evaluating narrative abilities at a single time point.

Complex Syntax and Clause Density. Terry et al. (2013) also found that complex syntax in a language sample could function as a more dialect-neutral language measure of AAE-speaking children. Therefore, complex syntax was also examined in this study. Specifically, a measure of complex syntax found to provide further insight into a child's language abilities was clause density (Scott & Stokes, 1995; Washington & Craig, 2002), which can be measured via the Subordination Index (SI). The SI creates a ratio of the total number of clauses to the total

number of utterances spoken by the child following a set of rules developed by researchers (Loban, 1963).

However, when utilizing complex syntax measures for AAE-speaking children, it is imperative that clinicians consider the previously mentioned, extensive diversity found in the morphology and syntax of the dialect. Therefore, throughout such analyses of complex syntax, speech-language pathologists must use clinical decision-making to decipher if the syntax produced by the child is context-appropriate and reflects true, accurate knowledge of oral and/or written form for their language and dialect (Scott & Stokes, 1995). While the SI was developed with Spanish speakers in mind, its rules do not account for the morphosyntactic features of AAE. Therefore, for this study, I computed an adapted SI score in conjunction with my advisor, Dr. John Heilmann, modifying rules as appropriate based on acceptable AAE morphosyntactic features (see Appendix). This ensured that students did not lose points and, thus, were not penalized, for speaking AAE.

The Peabody Picture Vocabulary Test

In addition to these measures taken from the narrative LSA, the Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4) was also administered to the participants in this study. The PPVT-4 is a measure of receptive vocabulary. While previous versions of the Peabody Picture Vocabulary Test (i.e. the Peabody Picture Vocabulary Test-Revised Edition) were inappropriate for working with culturally and linguistically diverse populations (Washington & Craig, 1999), the PPVT-4 has been used to assess the vocabulary skills of diverse speakers (e.g. Mills, 2015; Schachter & Craig, 2013). Like the PALS-PreK, it was also chosen for the participants in this study because of its demonstrated reliability and validity.

Reliability. The PPVT-4 demonstrated several types of reliability with the normative sample, including high test-retest reliability, internal consistency, and alternate-form reliability. The test-retest reliability indicates that, when the normative sample was retested four weeks following initial administration, high correlations were observed between the two administrations. For its internal consistency, a split-half reliability was completed for both forms of the test, resulting in high scores for each form (.94 and .95). Finally, to examine its alternate-form reliability, a subgroup of individuals within the normative sample were given both test forms, yielding correlation coefficients between .87 and .93, indicating high reliability.

Validity. Multiple studies were also completed on the PPVT-4 for appropriate validity; specifically, construct validity and convergent validity. This was done to show that the PPVT-4 measured what it was intended to measure and that appropriate comparative measures were, in fact, related as they theoretically should be. Overall, when compared to the Peabody Picture Vocabulary Test, Third Edition; Expressive Vocabulary Test, Second Edition; and the Group Reading Assessment and Diagnostic Evaluation test, correlations ranged from moderate to high, indicating strong validity (Community-University Partnership for the Study of Children, Youth, and Families, 2011).

Measuring Dialect Density

A dialect measure is pertinent to quantifying the relationship between emergent literacy skills, oral language abilities, and dialect use. This is because dialect use fluctuates with numerous factors, including the speaker's development. For example, a study conducted by Washington and Craig (2002) aimed to compare the dialect density of young, AAE-speaking children with that of their caregivers. Results indicated that, while similarities were found between the use of AAE across ages, differences existed in the dialect density between young

children and caregivers, as demonstrated by the use and structure of each AAE characteristic in the different generations. Therefore, to most accurately analyze the relationships between dialect, language, and emergent literacy, the density of the dialect was measured in this study. Each child's dialect density was determined by the structure and use of previously mentioned AAE features within the narrative LSA (e.g. Mills, Watkins, & Washington, 2013) utilizing the Dialect Density Measure (DDM). Specifically, DDM calculated dialect density as a ratio of the number of morpho-syntactic features to the number of words (Craig & Washington, 2005).

Procedures

Subsets of the 120 participants were monitored over the course of an academic year, with 96 children completing the PALS-PreK and the PPVT in both fall and spring and 21 children completing the narrative retells in both fall and spring. Since children were constantly enrolling in Head Start, fall testing began in September and lasted through December. To maintain a complete data set where each child completed the full testing protocol at both points in time, children who were lost to attrition were not included in this study.

Narrative Assessment Process. To obtain the spoken narratives, examiners read a prewritten script for the wordless picture book *Frog Where Are You?* to each child in the Head Start Program. The child was seated next to the examiner and, prior to reading, the examiner documented the student's identifier, birth date, age, and grade, as well as the date. The examiner then turned each page while reading the script, ensuring that the student was looking at the book.

After the story had been read, the students were requested to "use [their] own words to tell the story." The examiner then turned the book to the first page and started recording each student retell of the story. Page turning was controlled by the student throughout the retell with assistance provided by the examiner as needed. Throughout the retell process, the examiner

moved away from the student to promote language and minimize pointing. “Wh” questions were avoided: instead, all cues were kept open-ended. Verbal cues from the examiner were limited to nonspecific, attention-focusing prompts, such as “Keep going,” “Tell me more,” “And then…” and/or “You are doing a great job,” and nonverbal cues included head nodding and smiling to promote more verbal language.

Coding and Analysis. For this study, each narrative language sample transcript was coded for (1) narrative structure (e.g. NSS) and (2) complex syntax (e.g. clause density or adapted SI) using Systematic Analysis of Language Transcript (SALT) software. The children’s PPVT scores, PALS-PreK scores (e.g. alphabet knowledge and print awareness), and DDM scores were also analyzed.

To answer the research questions, I worked directly with my advisor, Dr. John Heilmann, to complete a series of analyses using these data. The results of the analyses are detailed below.

Chapter 4

Results

Table 1 details the descriptive statistics for the full sample of 120 children that participated in this study.

Table 1: Descriptive Statistics for the Full Sample

	Dialect Density		Emergent Literacy		Oral Language		
	% of Words	% of Utterances	Alphabet Knowledge	Print Awareness	PPVT	NSS	SI
Mean (SD)	8.7% (6.0%)	37.6% (18.3%)	6.1 (7.8)	3.6 (2.4)	89.8 (11.8)	12.1 (4.3)	0.9 (0.2)
Range	0.7 – 41.9%	4.3 – 92.9%	0 – 26	0 – 9	62 – 126	1 – 26	0.1 – 1.6

To test the relationship between the children's dialect use and the other measures, we completed a series of bivariate correlation analyses. A correlation was completed between DDM and each of the emergent literacy and oral language measures. The correlations are summarized in Table 2.

Table 2: Correlations Between Dialect Density, Emergent Literacy Scores, and Narrative Measures at the Beginning of Head Start

	Alphabet Knowledge	Print Awareness	PPVT	NSS	SI
DDM	-0.17	-.23*	-.25**	-.34**	-0.05

* $p \leq .05$
** $p \leq .01$

As observed in Table 2, there were significant negative correlations between DDM, print awareness, PPVT, and NSS. These data show that children with lower dialect densities tended to have higher print awareness, PPVT, and NSS scores. There was no significant correlation between DDM, alphabet knowledge, and SI.

Given that my primary goal in this study was to test the relationship between children's dialect use and emergent literacy, we next tested for the presence of a unique relationship between DDM and print awareness by completing a hierarchical regression analysis

(summarized in Table 3). For the first step in the hierarchical regression, we entered DDM as the dependent variable and the three oral language measures (PPVT, NSS, and SI) as the predictors. There was a significant relationship between the language measures and DDM ($r = .37$, $r^2 = .13$, $p = .001$). For the second step in the hierarchical regression, we added print awareness scores as a predictor variable. The addition of print awareness did not add any significant unique prediction to DDM scores (r^2 change = .03, $p = .06$). These results revealed that there was no unique relationship between dialect density and print awareness scores. In other words, any relationship between DDM and print awareness could be fully explained by the students' oral language skills.

Table 3: Hierarchal Regression Analysis of Children's Dialect Use, Language Scores, and Print Awareness Scores at the Beginning of Head Start

Predictors	**r**	**r^2**	**r^2 change**	**F**	**p**
Step 1: PPVT, NSS, SI	-.37	.13	n/a	5.7	.001
Step 2: Print Awareness	-.40	.16	.03	3.6	.06

A subset of 96 children completed the two PALS-PreK subtests and the PPVT again at the end of the academic year. Table 4 provides a summary of the children's performance on these measures in fall and spring. A repeated measures analysis of variance (ANOVA) was completed for each of these measures. The results of the ANOVAs are presented in Table 4, which shows that the students made significant gains on the two PALS-PreK subtests but non-significant gains on the PPVT.

Table 4: Emergent Literacy Scores and Language Scores Over Time

	Descriptive Statistics (Mean (SD))		Inferential Statistics (Repeated Measures ANOVA)		
	Fall	Spring	F	p	Eta squared
Alphabet Knowledge	6.5 (8.0)	13.2 (9.9)	84.0	<.001	.47

Print Awareness	3.7 (2.4)	5.2 (2.6)	47.8	<.001	.34
PPVT	89.8 (12.2)	91.8 (12.4)	2.7	.10	.03

Note: PPVT reported as standard scores

The analyses in Table 4 showed that the children were making significant gains on their emergent literacy skills throughout the academic year. To determine factors that may be influencing that growth, we first calculated change scores for the two emergent literacy measures:

(1) Alphabet Knowledge Change Score = Spring Alphabet Knowledge – Fall Alphabet Knowledge

(2) Print Awareness Change Score = Spring Print Awareness – Fall Print Awareness

We then completed correlations between these change scores and the students' DDM, PPVT, NSS, and SI (summarized in Table 5).

Table 5: Correlations Between Change Scores in Emergent Literacy and Students' Fall Dialect and Language Scores

	Dialect Density	PPVT	NSS	SI
Alphabet Knowledge Change Scores	-.22*	.02	.31**	.09
Print Awareness Change Scores	-.14	.15	.29**	.20

* $p \leq .05$
** $p \leq .01$

The correlations in Table 5 revealed that fall NSS scores significantly predicted the children's fall-spring changes in alphabet knowledge and print awareness. We also found that the children's fall DDM scores were significantly related to increases in alphabet knowledge throughout the year. To test if the children's dialect density was uniquely related to growth in alphabet knowledge, we completed another hierarchical regression with alphabet knowledge

change scores as the dependent variable (summarized in Table 6). The first step of the regression included the three oral language measures (e.g. NSS, SI, and PPVT) as the predictors of alphabet knowledge change, which was significant. The second step added DDM, which did not add any significant unique prediction of alphabet knowledge gains (r^2 change = .04, p = .16). In other words, any relationship between DDM and growth in alphabet knowledge could be fully explained by the children's oral language skills.

Table 6: Hierarchal Regression Analysis Between Oral Language Skills, Dialect Use, and Alphabet Knowledge

Predictors	**r**	**r^2**	**r^2 change**	**F**	**p**
Step 1: PPVT, NSS, SI	.39	.15	n/a	2.8	.05
Step 2: DDM	.44	.19	.04	2.0	.16

To further illustrate the impact of dialect on the growth of children's alphabet knowledge skills, we classified the children based on the number of letters that they knew in fall and spring. A common benchmark for letter knowledge is 10-letters, which many agencies consider the minimum threshold that children should know in preschool (Piasta, Petscher, & Justice, 2012). We organized the children into three groups based on their alphabet knowledge in the fall and spring:

(1) Low letter knowledge group (n = 40): Named fewer than 10 letters in both the fall and spring

(2) Growth group (n = 33): Named fewer than 10 letters in the fall and 10 or more letters in the spring

(3) High letter knowledge group (n = 21): Named 10 or more letters in both the fall and spring

Table 7 summarizes average scores on the DDM, PPVT, NSS, and SI, all collected during the fall of the academic year. To test for differences across the groups, we completed a series of ANOVAs with each measure as the dependent variable and group (low letter knowledge vs. growth vs. high letter knowledge) as the independent variable. As observed in Table 7, a significant difference was observed across the three groups for NSS scores. No significant differences were observed for the other three measures.

Table 7: Three Emergent Literacy Groups' Relationship with Dialect Density and Language Scores

	Dialect Density	PPVT	NSS	SI
Low letter knowledge	10.1% (7.5%)	88.8 (13.8)	10.8 (4.4)	0.9 (0.3)
Growth	7.5% (5.5%)	88.9 (10.2)	13.7 (4.3)	1.0 (0.2)
High letter knowledge	7.2% (3.3%)	94.7 (11.7)	12.4 (3.0)	1.0 (0.2)
F	2.3	1.9	4.6	0.5
p	.10	.16	.01	.62
Eta squared	.05	.04	.09	.01

A final step in this study was to track the narrative skills of a subgroup of 21 children who completed the narrative retells in both fall and spring. To test for differences in the narrative measures, three separate repeated measures ANOVAs were completed (summarized in Table 8).

Table 8: Dialect Use, NSS, and SI in Narrative Retells Over Time

	DDM	NSS	SI
Fall	8.0% (3.6%)	13.0 (4.0)	0.9 (0.3)
Spring	5.5% (3.1%)	15.1 (2.5)	1.0 (0.1)
F	4.5	5.8	4.1
p	.05	.03	.06
Eta squared	.18	.23	.17

As observed in Table 8, significant changes were not observed for SI scores, but were observed for NSS scores. DDM scores significantly decreased, while NSS scores significantly increased.

To test if the growth was inter-related across these narrative measures, we calculated change scores from fall to spring for each measure (e.g., DDMspring – DDMfall = DDMchange) and then ran a series of correlation analyses. As observed in the Table 9, there was a significant correlation between the NSS and SI, yet no significant correlation between DDM and these two narrative measures.

Table 9: Correlations Between Change Scores in Dialect and Narrative Measures

	DDM	NSS
NSS	.19	
SI	.03	.56**

* $p \leq .05$
** $p \leq .01$

To determine if these changes in dialect and narrative skills were related to emergent literacy gains, we completed a series of bivariate correlations between the growth observed in these three narrative measures and the two emergent literacy measures. We correlated these change scores with the spring to fall change scores in alphabet knowledge and print awareness and found that none of the correlations were significant. The correlations are summarized in Table 10.

Table 10: Correlations of Changes in Dialect and Changes in Narrative Skills with Changes in Emergent Literacy Gains

	DDM	NSS	SI
Alphabet Knowledge	-.13	.14	-.08
Print Awareness	.22	.01	.09

Chapter 5

Discussion

The purpose of this study was to better understand the complex relationship between dialect use, language abilities, and emergent literacy skills to determine if dialect has a significant impact on children's emergent literacy. To do so, we examined the relationship between these domains upon children's entrance in Head Start, as well as changes in language proficiency, dialect use, and emergent literacy skills starting at the beginning of preschool and then throughout the entire academic year.

Dialect, Language, and Emergent Literacy at the Beginning of Head Start

Regarding the first research question (What is the relationship between dialect density, general language, and emergent literacy at the beginning of Head Start?), we found that negative and significant correlations existed between DDM, PPVT, NSS, and print awareness at the first time point: as dialect use increased, print awareness, PPVT, and NSS scores decreased (see Table 2). These findings align with data previously found in the literature (e.g. Terry 2012; Terry & Connor 2012). Upon initial evaluation, these results might suggest that dialect negatively effects emergent literacy and language skills. It is important to note, though, that such correlation does not equate to causation. As discussed by Washington (2001), reasons for such correlations may be multifaceted, as it is also possible that children who have higher dialect densities may have other specific characteristics which may contribute more to these lower scores (e.g. lower SES, age, and/or exposure to literacy instruction and activities).

Additionally, there was no significant correlation between DDM, SI, and alphabet knowledge at the first time point. Initial impressions may indicate that these skills are unrelated to each other; however, we believe that a potentially more plausible explanation is a floor effect

observed with alphabet knowledge and SI. This is because most of the children named zero letters and produced minimal complex syntax in their narrative retells at the beginning of Head Start. These floor effects limit the overall variability across participants, making it challenging to observe significant correlations.

Dialect as a Unique Factor at the Beginning of Head Start

Although the negative correlation between dialect and print awareness did exist, a primary goal in this study was to determine if dialect was uniquely related to these scores. Using hierarchal regression analysis, we found that DDM did not add any unique or significant prediction to print awareness scores after accounting for children's oral language skills at the beginning of Head Start (see Table 3). Therefore, this shows that any relationship between dialect use and emergent literacy abilities could be explained by oral language skills alone. These findings add to those of Terry and Connor (2012), who also concluded that emergent literacy skills are likely more independent of dialect use.

Relationship Between Baseline Dialect and Oral Language Ability and Changes in Emergent Literacy and Receptive Vocabulary

Regarding the second research question (Does baseline dialect and oral language ability predict changes in emergent literacy and receptive vocabulary across an academic year?), we found that, over the course of the year, participants made significant gains in their emergent literacy skills (see Table 4). Upon further analysis of factors that were influencing such growth, we found that baseline NSS scores significantly predicted changes in both measures of emergent literacy. Additionally, baseline DDM scores were significantly related to increases in alphabet knowledge throughout the year (see Table 5).

Dialect as a Unique Baseline Predictor

To again test if DDM was uniquely related to this growth in emergent literacy skills, we completed another hierarchical regression analysis (see Table 6). Overall, results indicated that the addition of DDM did not add any significant unique prediction of alphabet knowledge gains (r^2 change = .04, p = .16) (see Table 7). Therefore, we again concluded that any relationship between baseline DDM and this growth in alphabet knowledge could be fully explained by the children's oral language skills. These results again support Terry and Connor (2012)'s conclusion that emergent literacy skills may be more independent of dialect use.

This pattern was further illustrated when we broke the participants down into three alphabet knowledge subgroups: for variables of PPVT, DDM, NSS, and SI, only NSS predicted significant differences in alphabet knowledge across the three groups (see Table 7). It is important to note this relationship because the NSS is more of a holistic and comprehensive language measure than other oral language tests such as the PPVT, which factors in skills beyond children's language abilities, such as their cognitive status and life experiences. Therefore, it is notable that comprehensive oral language skills appeared to be driving relationships with emergent literacy skills the most of all the factors examined in this study.

Changes in Dialect Use and Changes in Language and Emergent Literacy

To answer the third research question (Do changes in dialect use over the course of a year influence changes in oral language and emergent literacy measures?), we first completed a series of ANOVAs to determine potential changes in both dialect use and oral language skills. Overall, we found that DDM scores significantly decreased, while NSS scores significantly increased (see Table 8). To test if the growth was inter-related across these narrative measures, change scores were calculated from fall to spring for each measure. Results indicated that the change in DDM was not related to change in NSS or SI but change in NSS was related to change in SI (see Table

9). This shows that, throughout the year, the two oral language measures were related to each other, but changes in dialect were not related to changes in oral language; although children's dialect use was decreasing overall, those children that used less dialect did not necessarily have stronger or weaker oral language skills. Therefore, this again demonstrates dialect to be more of an independent factor, this time in relation to changes in oral language skills.

Finally, we were able to determine if these changes in dialect use and oral language skills were related to gains in emergent literacy by completing correlations between the growth observed in these three narrative measures and the gains in the two emergent literacy measures. Overall, none of the calculated correlations were significant (see Table 10).

Summary

Taken together, results from this study indicate that dialect did not uniquely influence emergent literacy: whether students used a high or low amount of dialect did not exclusively affect their language or emergent literacy skills. Rather, at this early stage in literacy, oral language skills appeared to be the prime predictor and factor of emergent literacy abilities, which was most illustrated by the holistic and comprehensive oral language measure of the NSS. Therefore, the results of this study do not provide support for the linguistic interference theory or the linguistic awareness/flexibility hypothesis (Gatlin & Wanzek, 2015; Washington & Craig, 2002; Terry, 2012): when evaluating students' emergent literacy skills, we believe that dialect use is more independent of these. These findings add to those of Terry and Connor (2012), who also suggested that dialect may be an independent factor when they examined the emergent literacy measures of word reading, receptive vocabulary abilities, and phonological awareness skills for children aged kindergarten to first grade.

Limitations and Future Directions

There are several limitations to the work of this study that should be considered when interpreting the findings. Specifically, only two dimensions of emergent literacy (i.e. alphabet knowledge and print awareness) were obtained for 20% of the sample and, thus, these were the only two measures able to be utilized to complete the full analysis. Had all subtests of the PALS-PreK been administered, we could have obtained a more holistic understanding of children's emergent literacy abilities as they relate to dialect use and oral language skills. Therefore, caution should be exercised when generalizing the findings from this study to other emergent literacy skills beyond alphabet knowledge and print awareness, and when comparing them to results from other studies that examine differing emergent literacy scores (i.e. Terry & Connor, 2012). Additionally, of the 120 participants, only 21 completed narrative retells in the fall and the spring. Thus, caution should again be used when generalizing the findings of this analysis regarding oral narrative skills over time.

Although dialect was demonstrated to be more of an independent factor with these younger, preschool students and their emergent literacy skills, it is important to acknowledge that the impact of dialect could vary based with developmental level. For example, Charity, Scarborough, and Griffin (2004) found that, for children aged kindergarten to second grade, a stronger understanding of MAE forms was related to stronger literacy skills. However, as these are correlational results, the cause of such a relationship in older students was unclear, and their results also could specify whether the relationship was explained by the linguistic interference theory or the linguistic awareness/flexibility hypothesis. Therefore, while the results of this study indicate that dialect may be more of an independent factor at the preschool level, future research could investigate if and how this relationship evolves as these children's literacy skills continue to develop. Specifically, we recommend a longitudinal study be conducted that follows the

relationship between children's dialect use, language abilities, and literacy skills over time, from preschool and into school-age.

Overall, more research is needed to continue to explore the complex relationship between dialect use, oral language abilities, and emergent literacy skills. In general, we recommend that further research be conducted with larger sample sizes and diverse subsets of literacy skills to better understand the complex nature of this relationship and generalize the findings. We also recommend that such research consider other factors that could contribute to potential relationships as mentioned by Washington (2001), such as SES.

Clinical Implications

Taken together, the results of this study provide clinicians working with speakers of AAE greater insight into the nature of the relationship between dialect use, emergent literacy skills, and language abilities over time. Results of this study suggest that use of AAE is independent of emergent literacy skills and that comprehensive measures of oral language skills like the NSS are more related to emergent literacy scores. Therefore, results also suggest that the NSS may be a particularly useful, dialect-neutral tool for clinicians when assessing the language skills of African American children, and that targeting the skills measured by the NSS in therapy may support the overall literacy development of these students. These findings add to those of Terry et al. (2013), who found that narrative macrostructure skills may be particularly dialect neutral and an overall more appropriate assessment procedure for diverse speakers. However, as with any assessment procedure or therapy tool, it is imperative that clinicians consider both cultural and individual differences in narrative production when utilizing the NSS for each student, especially when the sociocultural and linguistic background of the student differs from that of the clinician (Gormon, Fiestas, Peña, & Clark, 2011).

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Appendix

Subordination Index with Adapted Rules for AAE

Subordination Index

Introduction

This guide contains the scoring rules for the Subordination Index (SI), and directions for using SALT to enter SI codes into a transcript and to generate the SI reports.

SI definition: SI is a measure of syntactic complexity which produces a ratio of the total number of clauses to the total number of C-units (or modified C-units for samples of bilingual Spanish/English speakers). A clause, whether it is main or subordinate, is a statement containing both a subject and a predicate. Grammatically, a subject is a noun phrase and a predicate is a verb phrase. Main clauses can stand by themselves. Subordinate clauses depend on the main clause to make sense; they are embedded within an utterance as noun, adjective, or adverbial clauses. The SI analysis counts clauses.

This measure has been used in research studies since Walter Loban first created it to document complex sentence development (Loban, 1963). The attraction of this measure is the straight forward definitions of complex syntax with a scoring system that can be completed efficiently. It still requires hand coding in that these syntactic features cannot be identified accurately using lexical lists. An added feature is that it can be used with languages other than English. Our research on Spanish-English bilingual children used the SI to quantify complex syntax across the two languages. We found that a transcript can be coded in less than 10 minutes, with most time spent on the few unique utterances. Loban demonstrated that the SI captured advancing syntactic gains from kindergarten through grade 12.

SI codes: Language samples, which have been transcribed and segmented into C-units (or modified C-units), are coded at the end of each utterance using the codes [SI-0], [SI-1], [SI-2], etc. which means subordination index – 0 clauses, 1 clause, 2 clauses, and so on, within the utterance. The code, [SI-X], should be inserted at the end of utterances which are excluded from the SI analysis set (see Scoring Rules).

SI composite score: The SI composite score is calculated by dividing the total number of clauses by the total number of utterances.

SALT reference databases: The following SALT reference databases have been coded for SI: Play, Conversation, Narrative SSS, Narrative Story Retell, Expository, Persuasion, Bilingual Spanish/English Story Retell, Bilingual Spanish/English Unique Story, and Monolingual Spanish Narrative Story Retell. Samples you code may be compared to age or grade-matched samples selected from these databases.

Disclaimer: There is variation in the literature on how to count clauses, especially for some of the special cases. The SALT reference databases were coded for SI following the rules in this document. If you intend to compare your sample with samples selected from these databases, you should code your sample following the same rules.

Scoring Rules

In the examples, color coding is used to indicate the subjects and verbs in the clauses which are given SI credit.

1. Utterances that are incomplete, unintelligible, are nonverbal, or are marked with [EU] are excluded from the SI analysis set. Titles and true fragments, e.g., "The end", "and the dog", are not C-units and are also excluded from the SI analysis set. These excluded utterances are coded for SI using [SI-X] and are not included in the SI composite score.

Examples of utterances not included in SI: C Then he [SI-X]>
C He went XX yesterday [SI-X].

Examples of colloquialisms which are also not included in SI:
C You there frog [SI-X]?
C Frog, you in there [SI-X]? C ¿Rana ahí [SI-X]?

These utterances are acceptable in conversation. Therefore, they are excluded from the SI analysis set so that the speaker is not penalized for not including a verb.

When an elliptical response to a question is not a clause, it is excluded from the SI analysis set. With elliptical responses, the missing term(s) are understood from the context. *"... they are answers to questions that lack only the repetition of the question elements to satisfy the criterion of independent predication"* (Loban, 1963).

Examples of elliptical response to a question:
E Why did you do that? C Because [SI-X].
E ¿Por qué hiciste eso? C Porque sí [SI-X].

When an ellipsis has clausal structure and the subject can implied, it is scored and included in SI.

Example of elliptical response with clausal structure:

E How do you win?

C Score the most point/s [SI-1]. *The subject "you" was implied and scored for SI as though the subject was stated.*

The following types of ellipses are given credit for verb use.

E You should turn in your assignment. C I will [SI-1].

E Did your friend come to the party?
C He did [SI-1].

2. Ignore parenthetical remarks. Utterances which consist entirely of parenthetical remarks are excluded from the SI analysis set.

Examples:

C The girl ((I forgot her name)) got lost [SI-1].

C Then the ((what is that animal called)) <> ((oh yeah)) gopher bit him on the nose [SI-1]. E <Gopher>.

Example where the child does not repeat the subject supplied by the examiner:

C Then the ((what is that animal called)) <> bit him on the nose [SI-1]. E <Gopher>.

In this example, the child is given credit for the subject supplied by the examiner. Repeating the subject is optional in this context.

Examples of utterances consisting entirely of parenthetical remarks:

C ((I skip/ed a page)) [SI-X].

C (((Um) where was I)) [SI-X]?

3. Clauses with *omitted subjects are included in the SI analysis and receive a score of SI-0.

Example of omitted subject:

C *He got on the rock [SI-0].

Example of complex subordination with subject omission:

C And then *he grab/ed some branch/s so he would/n't fall [SI-1].

In this example the <u>first</u> clause receives SI-0 score due to subject omission.

Spanish note: Spanish is a pronoun-drop language (Bedore, 1999) and, as such, omission of nouns and personal pronouns is ubiquitous and grammatical. Therefore, these subjects are not considered to be omitted. Example:

C Y luego agarró unas rama/s para que no se cayera [SI-2].

4. Clauses with missing subjects due to pronoun errors are included in the SI analysis and receive a score of SI-0.

Examples:

C There[EW:they] see the frog/s [SI-0]. C Ahí[EW:ellos] ven a las rana/s [SI-0].

In these examples the pronoun is a demonstrative pronoun instead of a personal pronoun (i.e. she, you, his) and therefore the clause receives a zero score.

Adaptation #1: Due to the Undifferentiated Pronoun Case in African American English (Battle, 2002), clauses where a demonstrative pronoun is used in place of an objective, nominative, or personal pronoun (or vice versa) will be counted.

Ex: C There see the frog/s. Previously, this would have received a score of SI-0, due to the substitution of "There" for "They," but, as demonstrative pronoun substitutions are now marked as acceptable, this received a score of SI-1 in this study.

5. Commands with implied subjects are included in the SI analysis and scored as though the subject was stated.

Examples where the subject "you" is implied (not obligatory): C Give it to me [SI-1].
C Look at this [SI-1].

6. If an utterances contains a list of verbs, only score the verbs with stated subjects.

Examples:

C I walk/ed to the store, got some candy, and went home [SI-1].

C I walk/ed to the store because I want/ed some candy, and then went home [SI-2]. C He got on the rock and fell off the rock [SI-1].

Spanish – modified C-units.

Because of the pronoun-drop nature of Spanish, English and Spanish samples from bilingual speakers are segmented using modified C-units. Utterances containing successions of verbs without subjects are segmented and a fragment code, [F], is placed at the end of each utterance lacking a stated subject as a result of this segmentation. For these transcripts, subjects can be *implied* for fragments due to segmentation and receive SI scores.

Examples:

C He got on the rock [SI-1].
C and fell off the rock [F] [SI-1].

C Se subió a la piedra [SI-1].

C y cayó de la piedra [F] [SI-1].

Special case: If there is a fragment due to segmentation but the preceding utterance has an omitted subject, then you cannot imply the subject for the fragment.

Examples:

C Then *he ran [SI-0]. C and look/ed [F] [SI-0].

Because Spanish is a pronoun-drop language, this special case does not apply to Spanish samples.

Examples:

C Luego corrió [SI-1]. C y miró [F] [SI-1].

7. Clauses with *omitted copula (main verb) are included in the SI analysis and receive a score of SI-0.

Examples of omitted main verb/copula:

C (And the) and the frog *went through the big (ah) pond [SI-0]. C (y la) y la rana *nadó por el estanque (eh) grande [SI-0].

Examples of omitted verb in the second clause:

C And he start/ed yelling, "Froggy, Froggy of[EW:are] you there" [SI-1]? C Y empezó a gritar, "¿Rana, Rana fuera[EW:estás] ahí [SI-1]?

In these examples the speaker did not state a verb in the second clause; thus that clause receives a score of zero.

Adaptation #2: Due to this being a common feature of African American English (Battle, 2002), omitted copula verbs will be included, scored, and not given a score of SI-0.

Ex: C *THE FROG *IS IN THERE. Previously, this utterance would receive a score of SI-0 because of the omitted copula verb. For this study, it received a score of SI-1.

8. Utterances containing omitted auxiliary verbs, bound morphemes, functor words, direct objects, and articles are included in the SI analysis (coded for SI). This includes verbs which are not conjugated correctly.

Examples of omitted auxiliary:

C He *is go/ing [SI-1].

C When they *were sleep/ing the frog got out [SI-2]. C Él *estaba yendo [SI-1].
C Cuando ellos *estaban durmiendo la rana se salió [SI-2].

Example of an omitted bound morpheme:
C The boy was fall/*ing off the rock [SI-1].

Example of an omitted article: C He see/3s *an owl [SI-1].
C La rana se estaba cayendo de *la piedra [SI-1].

Examples of an omitted direct object:
C He was pour/ing coffee into the *cup [SI-1]. C Él estaba sirviendo café en la *taza [SI-1].

9. The subordinate clause within an utterance containing an omitted obligatory subordinating conjunction will not receive credit. Examples:
C There was a boy *who had a dog [SI-1].
C And the boy did/n't see *that the frog went out [SI-1]. C Había un niño *que tenía un perro [SI-1].
C Y el niño no vio *que la rana se salió [SI-1].

10. When an incorrect subordinating conjunction is used, the subordinate clause will not receive credit. Example:

C The deer was run/ing what[EW:so] he could throw the little boy in the water [SI-1].

If the word in error is a different subordinating conjunction, albeit the wrong one, the second clause may get credit. Use judgment. For example, bilingual (Spanish/English) children sometimes use the word "for" as a subordinating conjunction because the Spanish word "para," which means "for" in English, can be used as a subordinating conjunction in Spanish. In this case the subordinate clause should be given SI credit.

C The deer was run/ing for[EW:so] he could throw the little boy in the water [SI-2].

11. If a subordinating conjunction is not obligatory to the coherence of the utterance, the subordinate clause should still receive a score for SI. Examples:
C I know I want to go [SI-2].

C I think I hear something [SI-2].

The subordinating conjunction "that" can be implied in these utterances.

12. Dialogue is coded for SI. Consider the introducer, e.g., *he said*, as the main clause and what is in the quotes as the second clause. The direct quotation must have a subject and predicate in order to be considered a clause and get an SI count. Examples:

C And he *was say/ing, "Frog, where are you" [SI-2]? C Y él *estaba diciendo, "¿Rana, dónde estás" [SI-2]?

C The boy said, "Shh" [SI-1]. C El niño dijo, "Shh" [SI-1].

Examples of commands in which the subject *you/tú* can be implied:

C The boy said, "Go away" [SI-2].
C El niño dijo, "Vete" [SI-2].

13. Semantics should be ignored when scoring SI. If the wrong content word is used by the speaker, but is grammatically acceptable, score SI accordingly. Examples:

C The boy ran[EW:fell] off the rock [SI-1].
C El niño se corrió[EW:cayó] de la piedra [SI-1].

14. Utterances with imitated words (coded with [I] in the examples) are included in the SI and are scored as though the imitated word originated from the speaker. Examples:

C The <> gopher[I] came out of the hole [SI-1].
E <Gopher>.

C El <> topo[I] salió del hoyo [SI-1]. E <topo>.

Note In the following example, the child is given credit for the subject supplied by the examiner. Repeating the subject is optional in this context.

C The <> came out of the hole [SI-1].
E <Gopher>.

15. Counting Infinitives: there is variability in the literature on whether or not to count infinitives. Samples in the SALT databases do not count infinitives as clauses. Examples:

C The boy told the dog *to be quiet* [SI-1].

C We allowed the dog *to run loose* [SI-1]. C We let the dog *run loose* [SI-1].

C El niño se fue *a comprar* un perro [SI-1]. C El perro se quería *escapar* [SI-1].

16. The utterances containing code switches will be reviewed for SI. If the majority of the utterance (at least 50%) is in the target language (English or Spanish), code for SI.

Examples of code switching and SI coding with English as the target language:

C The rana[CS] jump/ed off the boat [SI-1].

C El[CS] niño[CS] buscó[CS] en[CS] the hole [SI-X]. *only 2 of the 6 words are in English, so not coded for SI* Examples of code switching and SI coding with Spanish as the target language:

C La frog[CS] saltó del bote [SI-1].

C The[CS] boy[CS] look/ed[CS] in[CS] el hoyo [SI-X]. *only 2 of the 6 words are in Spanish, so not coded for SI*

If the utterance has enough of the target language to score for SI but the speaker produces a partial verb in the non-target language then credit will be given for SI. Examples:

C The boy busc|buscar[CS] in the hole [SI-1]. *(target language: English)*

C El niño sear|search[CS] en el hoyo [SI-1]. *(target language: Spanish)*