Assessment of Structure Dependent Narrative Features in Modeled Contexts: African American and European American Children

Sandra Laing Gillam (Corresponding author)
Department of Communication Disorders and Deaf Education
Emma Eccles Jones Early Childhood and Education Research Center
Utah State University, 2610 Old Main Hill, Logan, UT 84322, USA
Tel: 1-797-1000 E-mail: sandi.gillam@usu.edu

Jamison Fargo
Department of Psychology, Utah State University
2810 Old Main Hill, Logan, UT 84322, USA
Tel: 1- 435-554-1174 E-mail: Jamison.fargo@usu.edu

Douglas B. Petersen
Department of Communication Disorders, University of Wyoming
1000 E. University Avenue, Laramie, WY 82071, USA
Tel: 1-307-766-6405 E-mail: dpeter39@uwyo.edu

Maya Clark
Communication Sciences & Disorders Department, Armstrong Atlantic State University
11935 Abercorn Street, Savannah, GA 31419, USA
Tel: 1-912-344-2969 E-mail: mclark01@gmail.com

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Abstract

The purpose of this study was to describe similarities and differences in structure-dependent features of narratives produced by 132 typically developing African American (AA) and European American (EA) children in a modeled elicitation context, across three age groups. Participants included 132 AA and EA children matched for gender, age, and geographic region. Children were divided into young, middle, and older elementary age groups. After listening to a model narrative and answering questions about it, children were asked to generate their own narrative. Narratives were analyzed for story grammar (macrostructure), organizational style (topic centered and topic associating), dialect and cohesion (microstructure).Differences in narratives varied by age and gender but not ethnicity with the exception of the use of overt planning. EA children were more likely than AA children to include a plan in their story across all age groups. Developmental changes in narration are described for children ranging in age from 6;0 to 11;9. The use of African American English (AAE) was not associated with differences in the cohesiveness of narratives. The modeled elicitation context holds promise as a reliable way to examine narration for school-age children from culturally and linguistically diverse backgrounds.

Keywords: Assessment, Narratives, African American

1. Introduction

Narrative discourse comprehension and production plays a critical role in school-age classroom discussion and instruction and in the development of proficiency in reading comprehension (Gardner-Neblett, Pungello & Iruka,

2011; Roth, Speece, Cooper, & de la Paz, 1996). An analysis of narrative comprehension and production ability may be undertaken when children demonstrate academic difficulty, as it may be an indication of language delay or impairment. Research suggests that certain structural aspects of narratives may differ across cultures making unbiased interpretation of narrative assessment results from diverse populations more difficult (Berman, 1988; Hudson & Shapiro, 1991; Gutierrez-Clellen & Quinn, 1993; Laing & Kamhi, 2003; Price, Roberts & Jackson, 2006). Most research on narrative development has been conducted with monolingual, English speakers from mainstream EA(EA) cultural backgrounds. Educational policy related to assessment, instruction, and special education services should be based in evidence related to developmental trajectories of the population of children being served. Therefore, research on narrative development must be conducted with children from diverse cultural and linguistic backgrounds if educational policies and practices are to be developed that are appropriate for all children being served in U.S. schools. The purpose of the current study was to describe potential developmental differences in language use in African American (AA) and EA children by highlighting aspects of their narrative production across three age groups (young, 5;0-7;11; middle, 8;0-10;11; old, 11;0 -12;0). Narratives of AA children were compared to those collected from a matched sample of EA (EA) children to explore potential differences in narrative structures across the two groups.

Berman (1988) characterizes the development of narration in terms of three overarching phases (early narratives, structure-dependent elaboration, and individualization) of narration beginning in preschool with the attainment of words and grammatical forms that may be used to describe pictures or events in stories and continuing into adolescence. Early narratives often constitute a series of descriptions that do not represent a unified "episode." An episode has been characterized as a story that contains a problem that propels characters into goal-directed actions that are intended to respond to, or solve a problem in some way (Stein & Glenn, 1979).

During the second phase of narrative development, children's stories become "structure-dependent and more elaborate" because they generally contain predictable elements. The stories produced in this phase include linguistic devices that serve to connect events (Berman, 1988). The complexity of narratives during this phase is related to the presence of macrostructure and microstructure elements. Narrative macrostructure is thought to be tied to underlying narrative schema (Merritt & Liles, 1989) and is marked by components called story grammar elements (Rumelhart, 1977; Thorndyke, 1977; Mandler and Johnson 1977; Mandler 1978; Stein and Glenn 1979; Johnson and Mandler, 1980). Story grammar elements represent propositions or basic units of meaning and may include a setting (information about story location) and an episode marked by an initiating event (the problem or event that sets the story in motion), an attempt (goal-directed action a character takes in response to the initiating event), and a consequence (the result of the character's action).

Narratives also contain microstructural elements (van Dijk & Kintsch 1983) including literate language features (adverbs, elaborated noun phrases, mental and linguistic verbs), cohesive devices such as subordinating (*Before* she ate dinner, she ate her dessert), conjunctive or coordinating conjunctions (*and, then, but*), pronominal references (cohesion) that refer back to named characters (*he*, *her, his, she)*, and lexical ties such as synonymy (A *monkey* was in the tree. The *primate* was brown), or superordinate – subordinate relationships (e.g., She wanted a *kayak* but there weren't any *boats* for sale). According to Berman's (1988) developmental model, part of the learning process that occurs in the second phase of narrative development includes deciphering which of the structure dependent (macrostructural and microstructural) aspects of narratives are optional or obligated given predominate cultural expectations and speaking contexts. Research on narration has focused mainly on the structure-dependent elaboration phase of Berman's (1988) narrative development model.

The notion that certain structural aspects of narratives may differ across cultures has been well researched (Berman, 1988; Celinska, 2009; Hudson & Shapiro, 1991; Gutierrez-Clellen & Quinn, 1993; Price, Roberts & Jackson, 2006). In a recent study, Gorman, Fiestas, Pena and Clark, (2011) examined the effects of culture on creative and stylistic features for 60 first- and second- grade children from AA, Latino American (LA) and Caucasian backgrounds. Children were asked to generate a narrative after looking at wordless picture books. Findings revealed that all children used similar organizational styles (ie., topic centered) and paralinguistic devices (ie., sounds, exclamations) however AA children included more fantasy (ie., suspense, conflict), Latino children included more character names, and Caucasian children made more references to the relationships between characters (ie., conduct, nature, naming) in their stories.

There have been numerous studies that have investigated potential differences in narrative organizational styles between cultures. For example, (1981) reported that in general, EA children produced narratives that were *topic-centered*, focusing on one object or event, and that AA children may produce narratives that were

topic-associating. While topic-centered narratives contain single episodes that focus on a central theme, topic-associating narratives contain loosely related thematic and structural devices that are conjoined in an implicit theme (Michaels 1981; Westby, 1994). The practical difficulty with the analysis of topic-associating narratives is that the presence of multiple, loosely-related narrative elements can diminish the saliency of the episodic construct. Therefore, the identification of a clear initiating event, attempt, and consequence is more difficult to ascertain in a topic associating narrative than in a topic-centered narrative. Michaels' subsequent research and the research of others (Heath, 1983; Michaels 1986) has reported similar findings. However, Lamoreaux (1998) and others (Hester, 1996; Hyon & Sulzby, 1994) have noted that AA children also produce topic-centered narratives. For example, Hyon and Sulzby (1994) investigated the narrative styles of 48 AA kindergarteners from urban, low-income communities. Children were asked to produce personal or fictional narratives in a one-to-one academic setting with an examiner. Researchers found that 16 of the children told topic-associating narratives and 28 told topic-centered narratives. In their study, older AA children were more likely to produce topic-centered narratives than younger AA children.

Many researchers have examined the narratives of children by identifying the macrostructural or microstructural elements they contain. For example, Price, Roberts and Jackson (2006) examined the story grammar elements (Stein & Glenn, 1979) produced by 65 AA children in preschool and again in kindergarten using a standardized, norm-referenced assessment (The Bus Story; Renfrew, 1991). These researchers analyzed the narrative retells for use of macrostructural elements including introductions (e.g., Once upon a time), relationships (*his* bus), initiating events (explicitly stated causal sequence of the motive for the bus to run away), internal responses (explicitly stated goal of the character; i.e., *decided* to run away), attempts (statements regarding "how" the bus ran away), and endings. The coding system used by Price et al., entailed a slightly different interpretation of narrative macrostructure and microstructure than our adopted definitions. For example, we consider *relationship* to be a microstructural element related to cohesion, and we classify *internal response* as defined by Price et al., as a *plan*. Interestingly, in kindergarten, only 25% of the children were found to include elements of relationship (cohesion) or internal response (plan). Price et al., indicated that their findings were similar to those reported for children from EA backgrounds of similar age (Berman, 1988; Hudson & Shapiro, 1991).

Few studies have investigated elements of narrative microstructure in stories produced by AA children, and even fewer have examined cohesion. In one study, Curenton and Justice (2004) compared the use of literate language microstructural features produced by AA children and EA children in low-income environments. The researchers reported no difference in the use of literate language features between AA and EA preschool children.

Some microstructural elements may differ in narratives produced by children who use AA English (AAE; Champion & Mainness, 2003) and Mainstream American dialects. A dialect is a variation of a language identified by patterns of pronunciation, grammar and/or vocabulary characteristic of a subgroup of the population (Bankson, Bernthal & Flipson, 2009, p. 243). AAE dialect use may impact the assessment of narrative microstructure because several AAE features incorporate the use of pronouns that may be linked to the use of narrative pronoun reference. For example, the use of appositives (e.g., I ate but the other kids they didn't), demonstratives (e.g., She broke them bottles), indefinite articles (e.g., It's a apple), undifferentiated pronouns (e.g., Me and him are cousins), and zero article (e.g., We baked cake) have the potential to affect the way in which reference cohesion is evaluated (Champion & Mainness, 2003; Clark, 2006; Horton-Ikard & Ellis Weismer, 2005). However, Horton-Ikard (2009) reported that children who used AA dialect were observed to produce cohesive markers that were similar to their peers who spoke Mainstream American dialect, characteristic of middle class, Caucasian children across the United States. Horton-Ikard (2009) examined microstructural cohesion in the narratives of 33 AA children between the ages of 7 and 12. Participants were asked to retell a familiar story or movie. It was reported that while AA children used similar pronominal forms found in EA narratives, only personal reference markers were used to establish and/or maintain cohesion. These findings and others support the hypothesis that within certain narrative contexts, there are many aspects of narrative microstructure that do not differ between AA and EA children (Champion, 1998; Champion and Mainess 2003; Curenton & Justice, 2004).

Part of the reason that findings related to the presence or absence of narrative macrostructure and microstructure in the two groups vary across studies may be due to the fact that AA children, particularly AAE speakers, have been shown to produce a wide range of story types in response to open-ended prompts (deVilliers, 2004). The research studies reported here (along with others) have used a number of elicitation contexts that include retelling movies, events and stories, as well as spontaneously generating stories from wordless picture books, sequenced pictures and single scenes. It is possible that differences observed in the use of macrostructure (story elements) or microstructure (including literate language features) within and across groups are mediated by elicitation context. Because of a

potential elicitation confound, structured picture sequences and modeled elicitation contexts have been suggested as a more "dialect neutral" context for the assessment of the structural integrity of a narrative (Celinska, 2009; deVilliers, 2004; Gorman et al., 2012; Seymour, Roeper, de Villiers, de Villiers, 2005).

Factors that influence the structural integrity of the stories children tell in addition to cultural expectations, experiences and individuality (Bartlett, 1932; Bidell et al., 1997; Naremore, Densmore, & Harman, 1995) include socio-economic status (Champion, 1998; Dollaghan, Campbell, Paradise, Feldman, Janosky, and Pitcairn, 1999; vanKleeck et al., 2010), and gender (Washington and Craig, 1998; Mainess, Champion, and McCabe, 2002). Dollaghan, Campbell, Paradise, Feldman, Janosky, and Pitcairn (1999) found that children from low SES homes had lower mean length of utterance (MLU), and vocabulary scores on standardized assessments than peers matched for age and language. However, Pruitt and Oetting (2009) found that morphosyntax produced by children, including AA children, was not affected by SES factors. Similarly, Mainess, Champion and McCabe (2002) found that AA children from lower SES backgrounds produced higher-level narrative structures than middle SES children.

A number of studies have shown differences in the use of narrative structure between AA girls and boys (Erikson, 1984; Washington and Craig, 1998; Mainess, Champion, and McCabe, 2002). Fey et al., (2004) reported that for the general population, girls tended to produce longer more advanced narratives than boys. In contrast, Hester (2010) found that AA boys and girls produced similar narratives at fourth-grade. A study by Peterson and McCabe (1983) described similar findings to Hester (2010) for their 9-year-old EA participants. These and other factors make the assessment of narrative structural integrity with respect to the use of macrostructure (story elements) and microstructure (literate language features), a complex process.

Most of the research on narration in school-age children that has been reported in the literature has focused on stories told by children in the second, structure-dependent elaboration phase of Berman's (1988) narrative development model. Berman proposes a third phase of narrative development that portrays mature narratives of older school-age children as an "individualization" of skills developed during earlier narrative phases. Berman's model predicts that as children get older their narratives will maintain a certain "structural integrity" as marked by macrostructure and microstructure elements, but will evidence more detailed descriptions of characters or events, and/or demonstrate various degrees of nonlinear organization depending on narrator preference. Narratives that do not include all of the macrostructure or microstructure elements one might expect to see in a structure-dependent narrative may nevertheless represent a cohesive, organized, compelling story. In this phase of narrative development, current classification and assessment approaches may not be as useful in characterizing children's stories. That is, some story elements deemed obligatory according to predominate cultural expectations may be omitted simply due to individuality.

The purpose of this study was to describe potential similarities and/or differences in structure-dependent features of narratives (macrostructure, microstructure) produced by typically developing AA and EAschool-age children in a modeled elicitation context. The modeled context served as a dialect-neutral elicitation context and was used to increase the likelihood that certain macrostructure and microstructural forms would be sampled across the age range studied. Our study adds to the developmental literature on this topic as it includes cohorts of children across three age groups (young, middle, older). Gender and the use of AAE were included in statistical analyses to account for the impact of these factors (to the extent possible) on outcomes. In this study, AA and EA children's narrative skills were examined by identifying their use of macrostructural and microstructural elements when telling a fictional story, "The Alien Story" (Gillam & Pearson, 2004).

2. Research Methods

2.1 Participants

One-hundred and thirty-two children; sixty-six AA children with a mean age of 8;10 (years;months) (SD = 23 months) and sixty-six EA children with a mean age of 8;10 (SD = 23 months) matched for gender, age and geographic region were included in this study. The participants were part of a national norming sample of 1, 059 children from 20 different states across the four major geographic regions of the U.S. (TNL; Gillam & Pearson, 2004). Children were divided into three age groups: young elementary (Mean age = 6;10 years;months), middle elementary (Mean age = 9;6 years;months) and older elementary school ages (Mean age = 11;6 years; months). There were 52 children in the young group (31 male, 21 female), 50 in the middle group (21 male, 29 female) and 30 in the older group (17 male, 13 female). None of the participants in the study had a history of special education services, and all scored within normal limits on the Test of Narrative Language (TNL; Gillam & Pearson, 2004) (see Table 1 for detailed participant characteristics).

2.2 Procedures

2.2.1 Narrative collection procedures

Certified speech language pathologists (SLPs) or graduate students administered the *Test of Narrative Lang*uage (TNL; Gillam & Pearson, 2004), a standardized measure designed to assess narrative comprehension and production in children ages 5-12. The TNL consists of three modeled conditions administered in progressively more difficult contexts: no picture cues (script), sequenced picture cues, and single scene picture cues. The third modeled context, which provided the narratives that were analyzed in the present investigation, is a single scene picture about a two children who see a dragon guarding a treasure chest in a cave. Children listen to a story and answer questions about it. Then, children are asked to generate a story that corresponds to a picture of two children looking at an alien family coming out of a spaceship. Thus, children have been presented with three topic-centered models of narratives (one using a scripted event, one using sequenced pictures, and one using a single picture prompt) before they are asked to create their own a story from a single scene picture prompt.

2.2.2 Narrative transcription and coding

A total of 132 narratives were recorded and then transcribed according to Systematic Analysis of Language Transcription (SALT) conventions (Miller & Chapman 2004). Narratives were transcribed verbatim with the inclusion of both child and examiner utterances. Trained transcribers transcribed each narrative from audio recordings and segmented them into communication units (C-units; Loban, 1976). C-units consisted of an independent main clause and any phrases or clauses subordinated to it. All of the original transcripts (100%) were transcribed independently for word and clause segmentation accuracy, and was 93%.In addition, 30% of the narratives were randomly selected and transcribed independently for the calculation of word and clause segmentation reliability and was 92% for word-by-word transcription and 96% for C-unit segmentation.

2.2.3 Macrostructural coding and analysis

Seven story elements were coded, including setting, initiating event, internal response, plan, attempt, consequence, and resolution. Story elements were coded in a binary system that represented whether an element was included in the narrative (0 = not present; 1 = present). Characters were agents who performed actions in stories. Setting was defined as a reference to time and/or place. An initiating event was an event or problem that required the character to take action. Internal response indicated how a character felt in response to an initiating event. Plan was defined as an overt statement that outlined how a character was thinking about responding to an initiating event. Plan was often marked by words such as “thought,” “decided,” or “wanted.” Consequence was coded when statements related to successful or unsuccessful conclusions to the initiating event. Resolution was coded as any statement that indicated the initiating event would not lead to further actions or consequences for the characters involved in the story. Inter-rater reliability of the coding of story elements was conducted on 10% of the data. The first and second authors coded each of the narratives independently and achieved point-by-point reliability of 94% for the assignment of story grammar elements.

2.2.4 Microstructural coding and analysis

The total number of words (TNW) was calculated by Systematic Analysis of Language Transcripts (SALT; Miller & Chapman, 2008) after the narratives were segmented into C-units and all mazes (e.g., false starts and fillers) were coded. For the subordination, each main clause and subordinating clause was identified. Inter-coder reliability was calculated for identification of main and subordinating clauses and was 90%. The subordination index was calculated by dividing the total number of independent and subordinate clauses by the total number of C-units.

2.2.5 Cohesion

Each narrative was coded for cohesive adequacy (Liles, 1985; Halliday & Hasan 1976) by identifying categories of cohesive markers and determining whether or not they were clear (unambiguous) or unclear (ambiguous) following procedures outlined by Strong (1998). Unambiguous cohesive markers were coded when no further information was necessary to determine the cross-C-unit referent (e.g., /One day *John* saw the aliens//and *he* was scared/). Ambiguous cohesive markers were coded when the cross-C-unit referent was unclear (e.g., /One day *he* saw the aliens / /and *he* was scared/). Five categories of cohesive markers were coded including reference, conjunctive, lexical, and substitution or ellipses. Examples and definitions are shown in Appendix A. Inter-rater reliability for cohesive marking was calculated for 30% of the narratives that had been rated independently. The point-by-point agreement was 88%.

2.2.6 Topic associating and topic centered narratives

Each of the narratives was classified as topic centered or topic associating using a modified classification scheme (Hyon & Sulzby, 1992; 1994; Michaels, 1981). Topic centered narratives were characterized as stories that were organized around a central theme or topic and contained consistent references to characters, temporal and location details. In addition, topic centered narratives were judged to contain a clear beginning, middle and end. A narrative was judged as topic associating if it was organized around a series of implicitly linked topics, episodes or anecdotes that were reasonably linked together but may have been presented out of "temporal" or linear order. Character shifting (more than once) was also associated with identification of a topic associating narrative. Some stories were neither topic centered nor topic associating. That is, some stories were descriptions (e.g., There is a girl. There is a dog), or represented a "laundry list" of actions by characters (e.g., The dog is running. The girl is smiling. The boy is scared.). These descriptions or actions were not tied together with an identifiable theme or topic and so were not characterized as topic centered or topic associating narratives. The first and second authors and a trained undergraduate student independently coded all of the narratives as either topic centered (1), topic associating (2) or neither (0). The coding was compared across the three independent coders. There was 98% agreement on the classification of narratives.

2.2.7 Dialect feature use

Because half of the children who participated in the study were AA, and African American English (AAE) may impact scoring, particularly of microstructural elements, we analyzed all of the narratives for the presence of 30 AA Vernacular English dialectal features based on a coding system summarized in Clark (2006). Features from Oetting and McDonald, (2001), Green, (2002), Craig and Washington, (2004; 2006) are included in the system, which is summarized in Appendix B. The second author and a trained undergraduate student coded the presence of AA dialect features for all of the narratives. Each C-unit was examined for the presence of morphosyntactical AA dialect features including four forms that may be produced by AA dialect speakers as reference cohesive markers (appositive pronoun, existential it/they, regularized reflexive pronoun, and undifferentiated pronoun case). Dialect features were identified and coded in SALT (Miller & Chapman, 2008). For example, the presence of undifferentiated pronoun case would be identified by attaching the following code to the form: [D:undiffpro]. The first author independently coded 30% of the narratives for the AA dialect features. Reliability for assignment of dialect features was 97%.

2.2.8 Dialect Density

Dialectal density measures (DDM; Craig, Washington & Thompson-Potter, 1998) were calculated for each narrative. This measure provides a sum of dialect feature use through a feature to word ratio. Following Craig, Washington and Thompson-Porter (1998), dialect density was calculated by dividing the total number of AAE features that were identified by the total number of words in the sample.

3. Statistical Analyses

Prior to analysis, age was recoded into a three-level categorical variable with the following groups: young elementary (mean age = 83.2 months), middle elementary (111.4 months), and older elementary (138.1 months). This grouping was assigned to examine potential developmental differences that were likely to exist between younger (7 year olds), middle (9 year olds) and older (11 year olds) children (Ikard-Horton, 2009). Ethnicity was coded as a dichotomous variable with EA (50%) and AA (50%) categories. Socioeconomic status for participants was approximated using income data. A variable for income was created by obtaining each participants' regional zip-code and cross-referencing that zip-code with the median income reported in the 2000 U.S. census (U.S. Census Bureau Housing and Household Economic Statistics Division (2001). Income was included in our statistical models to adjust for potential between-group differences in socioeconomic status (Geronimus, Bound, & Neidert, 1996). Two variables (linguistic complexity and dialect feature use) were identified as potential confounds to the relationship between the macrostructure and microstructure outcomes and key predictor variables (age and ethnicity). Linguistic complexity was calculated using a subordination index (SALT, 2008). Dialect feature use was calculated by dividing the total number of AAE features by the total number of words produced in a language sample (Craig, Washington and Thompson-Porter, 1998). Preliminary analyses were conducted such that these two variables were modeled as outcomes to determine whether they varied significantly according to age and ethnicity. If so, these variables would be included in further statistical models as covariates to adjust for their influence. Additionally, because total word length varied among participants, this variable was specified as an offset term in all statistical models. An offset variable represents a varying length of exposure or opportunity to yield a particular outcome. Since the participants were at liberty to devise their own responses, they had varying degrees of opportunity to

produce different elements of macrostructure and microstructure categories. Total word length was also modeled as an outcome in a preliminary analysis to determine whether its distribution varied as a function of age and ethnicity.

Analyses were selected to best fit the distributional nature of the outcome variables. Several outcome variables were expressed as counts or frequencies of occurrence of a particular type of macrostructure or microstructure phenomena, thus a model for count outcomes was selected. Preliminary analyses of count outcomes indicated that their variances were significantly larger that their means, thus a negative binomial model was selected to account for overdispersion. Binary outcomes related to specific components of macrostructure were modeled using standard logistic regression analysis.

Predictor variables in each statistical analysis included key predictor variables (age grouping, ethnicity, gender), potential covariates (income, subordination index and dialect feature use), and the offset term (total number of words/length). Regardless of statistical significance, age grouping, gender, and ethnicity were included in the final statistical models because they were used as part of the matching (sampling) process. Total number of words/length also remained in the final statistical models as it was needed to control for the variable opportunity in response length and also because there is no statistical test for the offset term. Two- and three-way interactions among predictor variables were also evaluated in each model. Diagnostic analyses, such as investigating potential influential data points and assessments for collinearity, were performed for all statistical models. All analyses were conducted using the R statistical computing environment (R Development Core Team, 2008).

3.1 Results

A summary of the demographic characteristics of the sample is provided in Table 1. Table 1 also includes descriptive information for the potential covariates included in the models, stratified by age and ethnicity. Preliminary analyses indicated that dialect feature use was significantly higher for 1) both the youngest ($p < .01$) and middle ($p < .05$) age groups as compared to the oldest age group, and 2) African-American as compared to EA participants ($p < .01$). There was no difference between the youngest and middle age groups. Sixty-eight percent ($n = 45$) of the AA children in this study used one or more features of African-American dialect (see Table 2 for a summary). Although Seymour et al., (1998) recommends a three-feature minimum for classification of a child as an AAE speaker, we wanted to control for any possible influences of dialect on the evaluation of narrative production. Therefore, dialect feature use was included as a covariate in all analyses of macrostructure and microstructure outcomes. Analyses of the AA dialect features used by the AA children indicated that none of the features that may be expected to affect other narrative microstructure features (e.g. appositive pronoun, existential it/they, regularized reflexive pronoun, and undifferentiated pronoun case) were used.

Total number of words/length was greatest in the oldest age group as compared to both the middle ($p < .01$) and youngest age groups ($p < .001$); no difference between the younger and middle age groups was observed. The natural log of total number of words/length was used as the offset term in order to normalize the distribution of this variable. Income was also significantly higher among EA as compared to AA participants, across all age groupings ($p < .05$), and was thus included as a covariate in all our statistical models.

3.2 Macrostructure Outcomes

3.2.1 Story grammar elements

Macrostructural outcomes pertaining to story grammar elements were analyzed using binary logistic regression analyses. Table 3 includes the number and percent of children who produced each story grammar element in their narrative. There were no significant findings for Setting, Initiating Event, Internal Response, Attempt/Action, or Resolution. Character was not analyzable because of the sparseness in the distribution of this variable (i.e., only two children did not include Character information). However, significant results were found for Plan and Consequence. The children in the middle age group were approximately 2.5 times more likely to include a Consequence in their narrative as children in the youngest age group (AOR = 2.67, 95% CI = 1.09-6.74, $p< .05$). There were no other significant age effects for Consequence. For Plan, EA participants were more than 2.5 times more likely overall to express a Plan in their narrative than AA participants (AOR = 2.71, 95% CI = 1.06-7.16, $p< .01$). There were no other significant effects for Plan. Income, our proxy for SES, was not a statistically significant predictor in these models.

The three remaining sub-analyses yielded no statistically significant effects and income was again not a statistically significant predictor in these models. Narratives were analyzed for topic-associating and topic-centered macrostructure for both AA and EA groups. There was only one topic-associating narrative produced by children in either the EA or AA groups and it is shown in Appendix A.

3.3 Microstructure Outcomes

All microstructure variables were analyzed using negative binomial regression models to adjust for overdispersion in the count outcomes. Tables 4 and 5 include means, standard deviations, and mean percentage of reference cohesion and conjunction cohesion variables (respectively). There were no significant predictors of lexical cohesion, adversative conjunctive cohesion, causal conjunctive cohesion, total conjunctive cohesion, unambiguous reference cohesion, or unambiguous reference cohesion. However, results suggested that children in the middle age group produced 27% fewer additive conjunctive cohesive devices than the youngest children (adjusted rate ratio [ARR] = 0.73, 95% CI = 0.55-0.96, $p < .01$) and that children in the oldest age group produced 32% fewer additive conjunctive cohesive devices than the youngest age group (ARR = 0.68, 95% CI = 0.50-0.93, $p < .01$).

Males produced approximately 66% more temporal conjunctive cohesive devices than females (ARR = 1.66, 95% CI = 1.04-2.67, $p < .01$). However, in terms of unambiguous reference pronominal devices, females produced 28% more than males (ARR = 1.28, 95% CI = 1.04-1.59, $p < .05$) and the oldest age group produced 33% more than the youngest age group (ARR = 1.33, 95% CI = 1.01-1.74, $p < .05$). There were no differences between the middle and older or middle and younger age groups in the use of unambiguous reference pronominal devices.

4. Discussion

The purpose of this investigation was to describe structure-dependent features of narratives produced by AA and EA typically developing school-age children ranging from early to later elementary school using a modeled elicitation context. Our findings are similar to those reported by deVilliers (2004), Celinska (2009) and Gorman et al., (2012) who elicited narratives from children using a modeled context to minimize potential cultural differences that may impact narrative feature use. Using a modeled elicitation context it is reasonable to expect similar microstructure and macrostructure elements to be present in the narratives of AA and EA children, with the exception of Plan. EA children in our study were consistently more likely to include a Plan at every age-level than were AA children. This finding is consistent with earlier work by Price et al., (2006) who noted that Plans were likely to be absent from the narrative retells of the young AA children they studied. Recall that Price and her colleagues examined narratives produced in a modeled context (The Bus Story; Renfrew, 1991) by 65 AA preschoolers in preschool and in kindergarten (Price, Roberts, & Jackson, 2006). In their study, the presence of Plan was referred to as an internal response or goal of the character marked by a mental state verb (i.e., *decided*). Fewer than 10% of the children in their sample were observed to include an overt Plan in their retells in Kindergarten. Our study extends this finding to older school age typically developing AA children.

The modeled elicitation context was associated with clear developmental trends for story length, the use of additive conjunctive cohesive devices, and unambiguous pronouns. Children in the oldest age group produced longer stories than children in the middle and younger age groups. Older participants demonstrated fewer and fewer reliance on simple additive conjunctions (eg., and, also, nor, or, furthermore, besides) in favor of more complex conjunctions (eg., adversative, causal, temporal). The use of additive conjunctions decreased by approximately 28% from younger to older age groups which is consistent with research that suggests that as children mature they use these markers with less frequency (Berman, 1988). Conversely, the use of adversative conjunctions (eg., so, because, as a result) increased by 18%, causal conjunctions (so, because, as a result) by 26%, and temporal conjunctions (then, next, after that, finally) by 16% from younger to older age groups. Children demonstrated the use of increasingly more sophisticated conjunctions for establishing coherence in their narratives regardless of ethnicity. With respect to microstructure, children in the oldest age group (11;1-11;9) produced fewer unambiguous reference pronouns than children in the youngest age (6;3-7;6) group. This finding is consistent with research that has shown that as children age, their stories demonstrate greater cohesive adequacy (Paul, Laszlo, McFarland & Midford, 1993). Consistent with the work of Hester (2010) and Fey et al., (2004) males and females produced similarly complex narratives however, males were more likely to use temporal conjunctions than females while females were 28% more likely to produce stories free of unambiguous pronominal references (eg., he, her, his, she) than were males.

Not surprisingly, AA children used more features that are characteristic of AA dialect than EA children. Interestingly, within the AA sample the children in the younger and middle age groups used AA dialect features more often than features in their narratives than older children (ages 11;1 to 11;9). This is consistent with the notion that children may have "code-shifted" to the use of mainstream dialect over time. Code-shifting is characterized by a conscious decision to use one dialect over another and is usually context dependent (Craig & Washington, 1998). For example, children are more likely to use AAE with their peers than with teachers, particularly if teachers are EA. We do not have the data in this particular study to make a definitive determination as to whether or not children were code-shifting, however we wanted to point out the possibility that it may have accounted for these findings.

Regardless, the use of AAE was not associated with differences in cohesion or the use of cohesive devices in narratives. There were no differences between AA and EA children for any of the microstructural features that we studied across any age group. Horton-Ikard (2009) reported similar findings in her study examining microstructural cohesion in the narratives of 33 AA children between the ages of 7 and 12. In her study, participants were asked to retell a familiar story or movie. AA children were found to use similar pronominal forms found in EA narratives, however only personal reference markers were used to establish and/or maintain cohesion. Together, our findings, along with others, support the hypothesis that within certain narrative contexts, there are many aspects of narrative microstructure that do not differ between AA and EA children (Champion, 1998; Champion and Mainess 2003; Curenton & Justice, 2004; Horton-Ikard, 2009).

We found no significant differences in the use of narrative microstructure between ethnicity groups. However, there were slight differences by gender and age. For example, males tended to use more temporal conjunctions than females. In terms of microstructure, children in the middle and older age groups were observed to use fewer additive conjunctive cohesive devices (e.g., and) than children in the youngest age group, which is consistent with research that suggests that as children mature, they use these markers with less frequency (Berman, 1988). Finally, children in the oldest age group produced fewer unambiguous reference pronouns than children in the youngest age group. Our findings related to the use of microstructure are supported by earlier research reported by Horton-Ikard (2009) who showed that children who used AA dialect were observed to produce cohesive markers that were similar to their peers who spoke Mainstream American dialect.

5. Clinical Implications/Summary

Current results suggest that a modeled elicitation context may be one valuable method for eliciting narratives from children from diverse cultural backgrounds. It is well-known that the provision of a model decreases the likelihood of bias in assessment for culturally and linguistically diverse populations (Laing & Kamhi, 2003; Lidz & Pena, 1996). This study and others have shown that a modeled narrative elicitation context yields similar stories that contain similar macrostructural and microstructural elements for AA and EA children regardless of the age level sampled (Gorman et al., 2012). However, our findings suggest there may be even less cultural variation in microstructure making it a better "indicator" of narrative "integrity" than macrostructure, which may be more susceptible to the influence of cultural schema or knowledge (Curenton & Justice, 2004). Alternatively, there may be less variation in microstructure as compared to macrostructure in terms of the level of individuality that a child may bring to the narrative task. That is, regardless of the macrostructure elements one chooses to include in a story, or whether the story contains overt planning, it should be cohesive, organized, and interesting (Berman, 1988).

References

Bankson, J., Bernthal, N., & Flipson, P. (2009). *Articulation & Phonological Disorders: Speech Sound Disorders in Children,* 6th Edition, p. 243. Boston, MA. Pearson Publishing.

Bartlett, F. (1932). *Remembering: A study in experimental and social psychology*. Cambridge: Cambridge University Press.

Berman, R. (1988). On the ability to relate events in narrative. *Discourse Processes,* 11, 469-497. http://dx.doi.org/10.1080/01638538809544714

Bidell, T., Hubbard, L., & Weaver, M. (1997). Story structure in a sample of African American children: Evidence for a cyclical story schema. *Paper presented at the Biennial Meeting of the Society for Research in Child Development.* Washington, DC: ERIC Document ED 410578. [Online] Available: http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED410578

Bliss, L., Covington, Z., & McCabe, A. (1999). Assess the narratives of African-Americanchildren. *Contemporary Issues in Communication Science and Disorders*, *26*, 160–167. [Online] Available: http://www.nsslha.org/uploadedFiles/NSSLHA/publications/cicsd/1999FAssessingtheNarratives.pdf

Braveman, P., Cubbin, C., Marchi, K., Egerter, S., & Chavez, G. (2001). Measuring socioeconomic status/position in studies of racial/ethnic disparities: Maternal and infant health. *Public Health Reports, 116*, 449-463. [Online] Available: http://www.jstor.org/stable/4598680

Champion, T. (1998). "Tell me something good": A description of narrative structures amongAfrican-American children. *Linguistics and Education*, *9*, 251–286. http://dx.doi.org/10.1016/S0898-5898(97)90002-4

Champion, T., McCabe, A., & Colinet, Y. (2003). The whole world could hear: The structure of Haitian-American children's narratives. *Imagination, Cognition and Personality, 22*(4), 381-400.

http://dx.doi.org/10.2190/VKCT-Q90L-PRHF-MRDL

Champion, T., & Mainess, K. (2003). Typical and disordered child narration in various cultures: African-American children. In A. McCabe & L. Bliss (Eds.), Patterns of narrative discourse: A multicultural, lifespan approach (pp. 55–70). Boston: Allyn & Bacon.

Charity, A., Scarborough & Griffin, D. (2004). Familiarity with school English in African American children and its relation to early reading achievement. *Child Development, 75*, 1340-1356. http://dx.doi.org/10.1111/j.1467-8624.2004.00744.x

Chen, E., Martin, A., & Matthews, K. (2007). Trajectories of socioeconomic status across children's lifetime predict health. *Pediatrics, 120*, 297-303. http://dx.doi.org/10.1542/peds.2006-3098

Celinska, D. (2009). Narrative voices of early adolescents: Influences of learning disability and cultural background. International Journal of Special Education, 24, 150-172. [Online] Available: http://www.internationalsped.com/documents/2009%20No3%20Celinska%20Narrative%20Voices%2016.doc

Clark, M. (2006). Language learning and language change in children with Specific Language Impairment who speak African American English. Unpublished Dissertation. University of Texas at Austin, May (2006).

Conger, R., & Donnellan, B. (2007). An interactionist perspective on the socioeconomiccontext of human development. *Annual Review of Psychology, 58*, 175-199. http://dx.doi.org/10.1146/annurev.psych.58.110405.085551

Craig, H. K., &Washington, J. A. (2004). Grade-related changes in the production ofAfrican American English. Journal of Speech, Language and Hearing Research, 47, 450-463. http://dx.doi.org/10.1044/1092-4388(2004/036)

Craig, H. K., &Washington, J. A. (2006). *Malik Goes to School: Examining thelanguage skills of African American Students from preschool-5th grade*. Mahwah NY: L Erlbaum Associates.

Craig, H. K., Washington, J. A. & Thompson-Porter, C. (1998). Average c-unitlengths in the discourse of African American children from low income, urban homes. *Journal of Speech, Language and Hearing Research*, *41*,433-444.

Curenton, S., & Justice, L. (2004). African-American and Caucasian preschoolers' use of decontextualized language: Literate language features in oral narratives. *Language, Speech, and Hearing Services in Schools*, *35*, 240–253. http://dx.doi.org/10.1044/0161-1461(2004/023)

Davis-Kean, P. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology, 19,* 294-304. http://dx.doi.org/10.1037/0893-3200.19.2.294

deVilliers, P. (2004). Assessing pragmatic skills in elicited production. *Seminars in Speech and Language, 25,* 57-71. [Online] Available: http://www.umass.edu/aae/Seminarpdfs3-26_copy/p057-072pdev.pdf

Dollaghan, C., Campbell, T., Paradise, J., Feldman, H., Janosky, J., Pitcairn, D., & Lasky, M. (1999). *Maternal education and measures of early speech and language. Journal of Speech Language Hearing Research, 42*, 1432-1443.

Fey, M., Catts, H., Proctor-Williams, K., Tomblin, B., & Zhang, X. (2004). Oral and written story composition skills of children with language impairment. *Journal of Speech, Language, and Hearing Research, 47*, 1301-1318. http://dx.doi.org/10.1044/1092-4388(2004/098)

Garner-Neblett, N., Pungello, E., & Iruka, I. (2011). Oral narrative skills: Implications for the reading development of African American children. Child Development Perspectives. http://dx.doi.org/10.1111/j.1750-8606.2011.00225.x

Geronimus, A., Bound, J., & Neidert, L. (1996). On the validity of using census geocode characteristics to proxy individual socioeconomic characteristics. *Journal of the American Statistical Association, 91*, 529-537.

Gillam, R., & Pearson, N. (2004). *Test of Narrative Language*. Austin, TX: PRO-ED.

Gorman, B., Fiestas, C., Pena, L., & Clark, M. (2012). Creative and stylistic devices employed by children during a storybook narrative task: A cross-cultural study. Language, Speech and Hearing Services in Schools, 42, 167-181. http://dx.doi.org/10.1044/0161-1461(2011/10-0101)

Green, L. (2002). African American English: A Linguistic Introduction. Cambridge University Press.

Gutierrez-Clellen, V., & Quinn, R. (1993). Assessing narratives of children from diverse cultural/linguistic groups. *Language, Speech, and Hearing Services in Schools, 24*, 2-9. [Online] Available: http://lshss.asha.org/cgi/reprint/24/1/2

Hadley, P. (1998). Language sampling protocols for eliciting text-level discourse. *Language, Speech and Hearing Services in Schools, 29*, 132-147. [Online] Available: http://lshss.asha.org/cgi/reprint/29/3/132

Halliday, M., & Hasan, R. (1976). *Cohesion in English*. London: Longman UK Group Limited.

Brice-Heath, S. (1983) .*Ways with words: Language, life, and work in communities and classrooms.* New York: McGraw-Hill; Oxford University Press.

Heilmann, J., Miller, J., Nockerts, A., & Dunaway, C. (2010). Properties of the narrative scoring schemeusing narrative retells in young school-age children. *American Journal of Speech-Language Pathology, 19,* 154-166. http://dx.doi.org/10.1044/1058-0360(2009/08-0024)

Hester, E. (1996). Narratives of young African American children. In A.G. Kamhi, K.E. Pollock, & J.L. Harris (Eds.), *Communication development and disorders in African American children: Research, assessment, and intervention* (pp. 227-245). Baltimore, MD: Paul H. Brookes.

Hester, E. (2010). Narrative correlates of reading comprehension in African American children. *Contemporary Issues in Communication Sciences and Disorders, 37,* 73-85. http://dx.doi.org/10.1111/j.1750-8606.2011.00225.x

Horton-Ikard, R. (2009). Cohesive adequacy in the narrative samples of school-age children who use African American English. *Language, Speech, and Hearing Services in Schools, 40*, 393-402. http://dx.doi.org/10.1044/0161-1461(2009/07-0070)

Horton-Ikard, R., & Ellis Weismer, S. (2005). Dialect specific characteristics in the language production of toddlers. *Applied Psycholinguistics*, 26, 597-620. http://dx.doi.org/10.1017.S0142716405050320

Hudson, J., & Shapiro, L. (1991). Effects of task and topic on children's narratives. In A. McCabe & C. Peterson (Eds.), *New directions in developing narrative structure* (pp. 89-136). Hillsdale, NJ: Erlbaum.

Hyon, S., & Sulzby, E. (1994). African American kindergartners' spoken narratives: Topic associating and topic centered styles. *Linguistics and Education, 6,* 121–152. http://dx.doi.org/10.1016/0898-5898(94)90009-4

Johnson, N., & Mandler, J. (1980). A tale of two structures: Underlying and surface forms in stories. *Poetics, 9*, 51-86. http://dx.doi.org/10.1016/0304-422X(80)90012-1

Laing, S., & Kamhi, A. (2003). Alternative assessment of language and literacy in culturally and linguistically diverse populations. *Language, Speech, and Hearing Services in Schools, 34*, 44-55. [Online] Available: http://www.cckm.ca/CPSLPR/pdf/Laing2003.pdf

Lidz C., Peña E. (1996). Dynamic assessment: The model, its relevance as a non-biased approach and its application to Latino American preschool children. *Language, Speech, and Hearing Services in Schools.* 27:367–372. [Online] Available: http://lshss.asha.org/cgi/reprint/27/4/367

Liles, B. (1985). Cohesion in the narratives of normal and language-disordered children. *Journal of Speech and Hearing Research, 28*, 123–133. [Online] Available: http://jslhr.highwire.org/cgi/reprint/28/1/123

Liles, B. (1987). Episode organization and cohesive conjunctives in narratives of children with and without language disorder, *Journal of Speech and Hearing Research, 30,* 185-196. [Online] Available: http://jslhr.highwire.org/cgi/reprint/30/2/185

Loban, W. (1976). *Language development: Kindergarten through grade 12*. Urbana, IL: National Counsel of Teachers of English.

Mainess, K., Champion, T., & McCabe, A. (2002). Telling the unknown story: Complex and explicit narration by African American preadolescents-Preliminary examination of gender and socioeconomic issues. *Linguistics and Education 13,* 151-173. http://dx.doi.org/10.1016/S0898-5898(01)00060-2

Mandler, J. (1978). A code in the node: the use of story schema in retrieval. *Discourse Processes, 1*(1), 14-35. http://dx.doi.org/10.1080/01638537809544426

Mandler, J., & Johnson, N. (1977). Remembrance of things parsed: Story structure and recall. *Cognitive Psychology, 9,* 111-151. http://dx.doi.org/10.1016/0010-0285(77)90006-8

McFarlane, F., Powell, M., & Dudgeon, P. (2002). An examination of the degree to which IQ, memory performance, socio-economic status and gender predict young children's suggestibility. *Legal and Criminological Psychology, 7*, 227-239. http://dx.doi.org/10.1348/135532502760274729

Merritt, D., & Liles, B. (1989). Narrative analysis: Clinical applications of story generation and story retelling. *Journal of Speech, Language, and Hearing Research, 54*, 438-447. [Online] Available: http://jshd.asha.org/cgi/reprint/54/3/438

Michaels, S. (1981). Sharing Time: Children's narrative styles and differential access to literacy. *Language Society* 10: 423-442. http://dx.doi.org/10.1017/S0047404500008861

Michaels, S. (1986). Narrative Presentations: An oral preparation for literacy with first graders." In Jenny Cook-Gumperz (ed.), *The Social Construction of Literacy,* 94-116. London: Cambridge University Press.

Miller, J., & Chapman, R. (2008). Systematic analysis of language transcripts (version 8.0) [Computer software]. Madison: Language Analysis Laboratory, Waisman Center, University of Wisconsin-Madison.

Miller, L., Gillam, R., & Peña, E. (2001). *Dynamic assessment and intervention: Improving children's narrative abilities*. Austin, TX: PRO-ED.

Naremore, R. C., Densmore, A. E., & Harman, D. R. (1995). *Language intervention with school-aged children: Conversation, narrative, and text.* San Diego, CA: Singular.

Oetting, J., & Mcdonald, J. (2001). Nonmainstream dialect use and specific language impairment. *Journal of Speech, Language, and Hearing Research, 44,* 207-223. http://dx.doi.org/10.1044/1092-4388(2001/018)

Paul, R., Laszlo, C. M., McFarland, L. S., & Midford, N. (1993, March). *Language outcomes in late talkers: Kindergarten.* Paper presented at the biennial meeting for the Society for Research in Child Development, New Orleans.

Petersen, D., Gillam, S., & Gillam, R. (2008). Emerging Procedures in Narrative Assessment: The Index of Narrative Complexity. *Topics in Language Disorders, 28*, 115-130. http://dx.doi.org/10.1097/01.TLD.0000318933.46925.86

Peterson, C., & McCabe, A. (1983). Developmental psycholinguistics: *Three ways of looking at a child's narrative p. 245*. Plenum Press; New York.

Price, J., Roberts, J., & Jackson, S. (2006). Structural development of the fictional narratives of African-American preschoolers. *Language, Speech, and Hearing Services in Schools*, *37*, 178–190. http://dx.doi.org/10.1044/0161-1461(2006/020)

Pruitt, S., & Oetting, J. (2009). Past tense marking by African American English-speaking children reared in poverty. Journal of Speech, Language, and Hearing Research, 52, 1–14. http://dx.doi.org/10.1044/1092-4388(2008/07-0176)

R Development Core Team (2008). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07- 0, [Online] Available: http://www.R-project.org

Renfrew, C. (1991). The Bus Story Language Test: A Test of Continuous Speech. Oxford, England: Author.

Roth, F., Speece, D., Cooper, D., & de la Paz, S. (1996). Unresolved mysteries: How do metalinguistic and narrative skills connect with early reading? *The Journal of Special Education, 30*, 257-277.

Rumelhart, D. (1977). Understanding and summarizing brief stories. In D. LaBerge and S.J. Samuels (Eds.), *Basic Processes in Reading: Perception and Comprehension.* Hillsdale, NJ: Lawrence Erlbaum Associates. http://dx.doi.org/10.1207/s15516709cog0403_5

Seymour, H., Roeper, T., & de Villiers, J. (2005). Diagnostic Evaluation of Language Variation—Norm Referenced Test. San Antonio, TX: The Psychological Corporation.

Snow, C. (1991). The theoretical basis for relationships between language and literacy development. *Journal of Research in Childhood Education, 6*, 5-10. http://dx.doi.org/10.1080/02568549109594817

Stein, N. & Glenn, C. (1979). An analysis of story comprehension in elementary school children. In R. O. Freedle (Ed.), *New directions in discourse processing* (pp. 53-120).Norwood, NJ: Ablex.

Strong, C. (1998). *The Strong narrative assessment procedure*. Eau Claire, WI: Thinking Publications. http://dx.doi.org/10.1044/0161-1461(2001/010)

Swanson, L., Fey, M., Mills, C., & Hood, L. (2005). Use of narrative-based language intervention with children who have specific language impairment. *American Journal of Speech-Language Pathology, 14*, 131– 143. http://dx.doi.org/10.1044/1058-0360(2005/014)

Thorndyke, P. (1977). Cognitive structures in comprehension and memory of narrative discourse. *Cognitive Psychology, 9,* 77-110. http://dx.doi.org/10.1016/0010-0285(77)90005-6

U.S. Census Bureau Housing and Economic Statistics Division. (2001). State and income poverty estimates. Washington, DC: U.S. Government Printing Office. URL http://www.dlc.org/documents/Census_2002_Poverty.pdf

van Dijk, T., & Kintsch, W. (1983). *Strategies of discourse comprehension.* NewYork: Academic. http://dx.doi.org/10.1037/0033-295X.102.2.211

Van Kleeck, A., & Lange, A., & Schwarz, A. (2010). The effects of race and maternal education level on children's retells of the Renfrew Bus Story – North American Edition. *Journal of Speech, Language and Hearing Research.* http://dx.doi.org/10.1044/1092-4388(2011/10-0079)

Washington, J., & Craig, H. (1998). Variable use of Africa American English across two language sampling contexts. *Journal of Speech, Language & Hearing Research 41,* 115-125.

Westby, C. (1994). The effects of culture on genre, structure, and style of oral and written texts. In G. P. Wallach & K. G. Butler (Eds.), *Language learning disabilities in school-age children and adolescents* (pp. 180–218). New York: Merrill/Macmillan.

Table 1. Means (Standard Deviations) of Descriptive Information of Participants

	Younger Ages			Middle Ages			Older Ages			All Ages		
	EA (n=25)	AA (n=27)	Total (n=52)	EA (n=26)	AA (n=24)	Total (n=50)	EA (n=15)	AA (n=15)	Total (n=30)	EA (n=66)	AA (n=66)	EA+AA (n=132)
% Male	56.0	63.0	59.6	34.6	50.0	42.0	60.0	53.3	56.7	48.5	54.5	52.3
Age[a]	82.9 (7.3)	83.7 (7.7)	83.2 (7.4)	110.8 (12.3)	112.2 (12.7)	111.4 (12.4)	139.0 (3.9)	137.5 (4.3)	138.1 (4.9)	106.6 (23.3)	106.3 (23.1)	106.4 (23.1)
Income[b]	46.0 (13.8)	29.6 (7.3)	37.5 (13.6)	51.0 (15.0)	36.8 (22.4)	44.2 (20.0)	49.8 (26.8)	29.5 (7.4)	39.7 (21.9)	48.8 (17.8)	32.2 (14.9)	40.5 (18.3)
# Words	106.3 (65.3)	111.2 (75.4)	108.9 (70.1)	154.8 (85.3)	156.5 (101.2)	155.6 (93.3)	191.4 (131.4)	218.3 (176.0)	204.9 (153.1)	144.7 (95.8)	152.0 (120.1)	148.4 (108.3)
Dialect[c]	0.0 (0.0)	0.02 (0.02)	0.01 (0.02)	0.0 (0.0)	0.01 (0.01)	0.01 (0.01)	0.0 (0.0)	0.01 (0.01)	0.01 (0.01)	0.0 (0.0)	0.01 (0.2)	0.007 (0.01)
Subord.[d]	1.2 (0.15)	1.2 (0.23)	1.2 (0.2)	1.3 (0.22)	1.3 (0.18)	1.3 (0.20)	1.3 (0.17)	1.4 (0.23)	1.34 (0.21)	1.24 (0.19)	1.27 (0.22)	1.3 (0.20)

Note: EA= European American. AA=African American. Younger Ages= 6-7 years. Middle Ages= 8-10 years. Older Ages= 11-11;9 years. [a] Age in months. [b] Median income in thousands of dollars. Dialect [c] Density (% dialect use). Subord. [d] = Subordination Index.

Table 2. Summary of dialect features used for AA participants

Participant Number	Dialect Feature (instances)
1. 57278	Zero irregular past (2)
2. 55733	Preterite had (1) SV agreement w/be (2) zero article (1)
3. 57243	SV agreement w/be (2)
4. 57221	SV agreement w/be (1) Zero article (1) zero regular past (1)
5. 57232	Zero be (1)
6. 57259	Preterite Had (1)
7. 57267	zero artice (1) SV agreement w/be (1)
8. 41706	SV agreement w/be (1)
9. 46115	SV agreement w/be (6)
10. 46650	Zero regular past (1)
11. 47496	Preterite Had (1) SV agreement w/be (2) Appositive pronoun case (1)
12. 48559	SV agreement w/be (2)) Aspectual be (1)
13. 28769	SV agreement w/be (2)
14. 28837	Preterite Had (5) SV agreement w/be (1) Ain't (1)
15. 39710	Zero be (1)
16. 41641	Indefinite article (1)
17. 41667	SV agreement w/be (1) Appositive pronoun case (1)
18. 41669	SV agreement w/be (1) Zero be (1)
19. 41673	Zero regular third present (1)
20. 41695	SV agreement w/be (1)
21. 23541	Zero irregular past (1)
22. 28766	Preterite Had (2)
23. 28746	Ain't (1)
24. 46783	Zero preposition (1)
25. 46816	Indefinite artice (1)
26. 47502	SV agreement w/be (1) Zero possessive (1)
27. 57255	SV agreement w/be (1) Zero regular past (1)
28. 57256	Preterie Had(10) SV agreement with be (1)
29. 57257	Zero regular past (1)
30. 57261	SV agreement w/be (1) Indefinite article (1)
31. 57262	SV agreement w/be (2)
32. 57264	Zero plural (1) Zero regular past (1)
33. 57266	SV agreement w/be (1) Double copula/auxiliary/modal (1)
34. 57265	Zero regular past (1)
35. 57269	Zero regular third present (2)
36. 57272	Preterite Had (1) SV agreement w/be (1)
37. 57273	Zero modal/auxiliary (1)
38. 57277	Zero plural (1) Indefinite article (1)
39. 57279	Zero modal/auxiliary (1)Zero regular past (1) Zero regular third present (1)
40. 57284	Prederite Had (1) SV agreement w/be (1)
41. 57287	SV agreement w/be (1) Indefinite article (1)
42. 57290	11 24

Note: 24 AA children used no dialect features in their narrative

Table 3. Number and Percent of Children who Included Individual Story Grammar Elements

	Younger Ages						Middle Ages						Older Ages						All Ages					
	EA (n=25)		AA (n=27)		EA & AA (n=52)		EA (n=26)		AA (n=24)		EA & AA (n=51)		EA (n=15)		AA (n=15)		EA & AA (n=30)		EA (n=66)		AA (n=66)		EA & AA (n=132)	
	n	PCT	n	PCT	n	PCT	n	PCT	n	PCT	n	PCT	n	PCT	n	PCT	n	PCT	n	PCT	n	PCT	n	PCT
CH	25	100	26	96	51	98	25	96	24	100	49	98	15	100	15	100	30	100	65	99	65	99	130	99
SET	12	48	11	41	23	44	18	69	14	58	32	64	11	73	12	80	23	77	41	62	37	56	78	59
IE	19	76	20	74	39	75	25	96	21	88	46	92	15	100	14	93	29	97	59	89	55	83	114	86
IR	7	28	6	22	13	25	12	46	12	50	24	48	7	47	9	60	16	53	26	39	27	41	53	40
PLN	12	48	6	22	18	35	16	62	10	42	26	52	11	73	7	47	18	60	39	59	23	35	62	47
ACT	17	68	19	70	36	69	25	96	19	79	44	88	15	100	14	93	29	97	57	86	52	79	109	83
CON	9	36	12	44	21	40	21	81	14	58	35	70	13	87	10	67	23	77	43	65	36	55	79	60
RES	7	28	11	41	18	35	18	69	12	50	30	60	8	53	7	47	15	50	33	50	30	46	63	48

Note: CH=Character, SET=Setting, IE=Initiating Event, IR=Internal Response, PLN=Plan, ACT=Action, CON=Consequence, RES= Resolution, PCT=Percent

Table 4. Mean, Standard Deviation and Mean Percent of Unambiguous Reference Cohesion, Unambiguous Demonstrative Cohesion and Unambiguous Pronomial Cohesion, Mean and Standard Deviation of Lexical Cohesion

	Younger Ages											
	Reference Cohesion			Demonstrative Cohesion			Pronomial Cohesion			Lexical Cohesion		
	EA (n=25)	AA (n=27)		EA (n=25)	AA (N=27)		EA (n=25)	AA (n=27)		EA (n=25)	AA (n=27)	
Mean (SD)	9.4 (10.4)	8.0 (12.3)		2.9 (4.2)	2.3 (3.8)		9.3 (7.7)	11.1 (11.4)		3.6 (3.6)	3.6 (3.8)	
PCT (SD)	61.8 (34.8)	36.7 (37.4)		63.1 (43.8)	41.4 (40.7)		64.8 (37.5)	35.5 (39.8)				
	Middle Ages											
	Reference Cohesion			Demonstrative Cohesion			Pronomial Cohesion			Lexical Cohesion		
	EA (n=26)	AA (n=24)		EA (n=26)	AA (n=24)		EA (n=26)	AA (n=24)		EA (n=26)	AA (n=24)	
Mean (SD)	13.0 (9.2)	11.4 (9.9)		2.9 (2.3)	2.4 (3.6)		15.0 (13.0)	14.1 (10.7)		4.9 (5.9)	5.4 (6.0)	
PCT (SD)	74.2 (26.3)	61.6 (36.0)		79.5 (32.1)	42.5 (40.8)		73.3 (28.2)	65.5 (36.4)				
	Older Ages											
	Reference Cohesion			Demonstrative Cohesion			Pronomial Cohesion			Lexical Cohesion		
	EA (n=15)	AA (n=15)		EA (n=15)	AA (n=15)		EA (n=15)	AA (n=15)		EA (n=15)	AA (n=15)	
Mean (SD)	16.5 (9.1)	20.3 (15.3)		2.7 (2.3)	4.8 (5.3)		16.3 (7.7)	21.7 (18.6)		5.1 (6.5)	7.9 (7.5)	
PCT (SD)	83.7 (24.1)	72.9 (36.8)		72.2 (42.2)	61.9 (41.0)		84.5 (24.3)	74.8 (36.6)				
	All Ages											
	Reference Cohesion			Demonstrative Cohesion			Pronomial Cohesion			Lexical Cohesion		
	EA (n=66)	AA (n=66)	Both (n=132)	EA (n=66)	AA (n=66)	Both (n=132)	EA (n=66)	AA (n=66)	Both (n=132)	EA (n=66)	AA (n=66)	Both (n=132)
Mean (SD)	12.4 (9.9)	12.0 (13.0)	12.2 (11.5)	2.9 (3.1)	2.9 (4.2)	2.9 (3.7)	13.1 (10.4)	14.6 (13.6)	13.9 (12.1)	4.5 (5.3)	5.2 (5.8)	4.9 (5.5)
PCT (SD)	71.7 (30.2)	54.0 (39.2)	62.8 (36.0)	71.7 (39.3)	46.5 (41.0)	59.1 (42.0)	72.6 (31.7)	55.4 (41.0)	64.0 (37.5)			

Table 5. Mean, Standard Deviation and Mean Percent of Additive, Adversative, Causal and Temporal Conjunctions

	Additive		Adversative		Causal		Temporal	
				Younger Ages				
	EA (n=25)	AA (n=27)	EA (n=25)	AA (n=27)	EA (n=25)	AA (n=27)	EA (n=25)	AA (n=27)
Mean (SD)	4.0 (2.7)	3.6 (3.1)	1.3 (1.6)	0.9 (1.8)	0.6 (1.0)	0.6 (1.1)	1.0 (1.6)	1.2 (2.2)
PCT (SD)	57.7 (32.3)	65.1 (29.4)	15.9 (16.8)	8.5 (14.0)	11.3 (22.6)	7.2 (12.7)	15.1 (22.6)	19.2 (26.4)
				Middle Ages				
	EA (n=26)	AA (n=24)	EA (n=26)	AA (n=24)	EA (n=26)	AA (n=24)	EA (n=26)	AA (n=24)
Mean (SD)	4.5 (3.2)	3.5 (3.1)	1.4 (1.0)	1.2 (1.5)	1.5 (1.6)	0.8 (0.9)	1.5 (1.6)	2.8 (4.2)
PCT (SD)	52.6 (24.5)	47.0 (26.8)	18.0 (20.4)	15.0 (15.3)	13.7 (11.3)	11.8 (18.4)	15.7 (14.4)	26.2 (27.9)
				Older Ages				
	EA (n=15)	AA (n=15)	EA (n=15)	AA (n=15)	EA (n=15)	AA (n=15)	EA (n=15)	AA (n=15)
Mean (SD)	5.7 (7.2)	4.1 (3.7)	1.7 (1.4)	1.3 (1.4)	1. 7 (2.5)	1.7 (1.8)	1.9 (2.1)	2.7 (4.1)
PCT (SD)	43.2 (21.5)	40.3 (26.5)	21.5 (18.8)	13.1 (15.3)	14.6 (14.7)	18.2 (17.7)	20.7 (22.3)	28.5 (28.1)
				All Ages				
	EA (n=66)	AA (n=66)	EA (n=66)	AA (n=66)	EA (n=66)	AA (n=66)	EA (n=66)	AA (n=66)
Mean (SD)	4.6 (4.2)	3.7 (3.2)	1.4 (1.3)	1.1 (1.6)	1.2 (1.7)	0.9 (1.3)	1.4 (1.7)	2.1 (3.5)
PCT (SD)	52.4 (27.4)	52.8 (29.4)	18.0 (18.5)	11.9 (14.9)	13.0 (17.0)	11.5 (16.4)	16.6 (19.6)	23.9 (27.2)
				Total (n=132)				
Mean (SD)	4.1 (3.7)		1.3 (1.5)		1.0 (1.5)		1.8 (2.8)	
PCT (SD)	52.6 (28.3)		14.9 (17.0)		12.2 (16.7)		20.2 (23.8)	

Appendix A. Definitions and examples of cohesive markers

Cohesive markers	Definition	Example
reference	words that mark personal reference & demonstrative reference	I, you, use, he, him, she, her, they, them, their, our, mine, its, the, this, that, these, those, here, now, then
Conjunctive reference	additive, adversative, causal, temporal, continuative and specified cross C-unit semantic relationships (eg., The boy ran and the girl screamed.)	and, also, nor, or, furthermore, besides, but, however, yet, though, only, so, because, except, as a result, then, next, after that, finally, well, surely, now, of course
Lexical tie	words that were related through specific selection of vocabulary including repetition, synonymy, antonymy, part-whole, superordinate-subordinate relationships, substitution-ellipses	A bird was in the tree// The bird was red/ /A rat saw some cheese// The rodent was happy/ /The birds looked different// One was fat, one was skinny/ /The car was broken// The wheel fell off/ /He wanted a bike// The store didn't carry cycling equipment/ /She is having cake// I want that too/.

Appendix B. Dialect features

AAE feature types and examples of feature use (based on Oetting and Mcdonald, 2001; Craig & Washington, 2004: 2006)		
	Feature	Example
1	Ain't	He ain't mad.
2	Appositive pronoun case	I ate but the other kids they didn't.
3	Aspectual be	It be too early in the morning.
4	Completive done	He done lost his mind.
5	Demonstrative	She broke them bottles.
6	Double copula/auxiliary/modal	My momma might would say yes if I'm good.
7	Existential it	It be a lot of people at her house.
8	Fintna/Sposta/Bouta	We fitna go. I'm spousta pass 3rd grade. I'm bouta go.
9	Indefinite article	It's a apple.
10	Multiple marking	That hurted me.
11	Multiple negation	We don't need no help.
12	Omission of infinitive to	My dad come pick me up.
13	Preterite Had	She had hit him first.
14	Regularized reflexive pronoun	He did it to hisself.
15	SV agreement with be	We was too busy.
16	SV agreement with don't	He don't care.
17	Stressed been	He been working at Target.
18	Undifferentiated pronoun	Me and him are cousins.
19	Zero article	We baked cake.
20	Zero be	They too big.
21	Zero ing	It go be a fun place.
22	Zero irregular past	You mean you haven't ate.
23	Zero irregular third present	He do it all the time.
24	Zero modal/auxiliary	She might been in the house.
25	Zero of	I can do all the cooking now.
26	Zero plural	I wrote they name.
27	Zero possessive	I go with my cousin and my cousin brother.
28	Zero preposition (on, beneath, a going)	Look how many names you have.
29	Zero regular past	I miss one.
30	Zero regular third present	I got one sister that live with me.