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Research Article

Dialect Variation of Copula and Auxiliary Verb BE: African American English–Speaking Children With and Without Gullah/Geechee Heritage

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Purpose: We compared copula and auxiliary verb BE use by African American English–speaking children with and without a creole heritage, using Gullah/Geechee as the creole criterion, to determine if differences exist, the nature of the differences, and the impact of the differences on interpretations of ability.
Method: Data came from 38 children, aged 5 to 6 years (19 with Gullah/Geechee and 19 without Gullah/Geechee heritage). All were developing language typically, with groups matched on gender, maternal education, and, when possible, test scores. The children's productions of BE were elicited using a screener, probes, and language samples.
Results: Although many similarities were documented, the 2 groups' BE systems differed in 3 ways: use of unique forms (i.e., *də*), unique use of shared forms (i.e., BEEN), and rates of use of shared forms (e.g., *am, is, was/were, was* for *were*). Although most noticeable in the language samples, differences surfaced across tasks and showed the potential to affect interpretations of ability.
Conclusions: Dialect variation that is tied to children's creole heritage exists, involves 3 types of variation, and potentially affects interpretations of ability. Effects of a heritage language and different types of variation should be considered in research and clinical endeavors with African American English–speaking children.

As recognized by many within the field of sociolinguistics, the dialect of African American English (AAE) is not uniform across speakers, communities, and regions of the country (Lanehart, 2015). Although many internal and external variables contribute to the variation that exists within AAE, the current study focuses on a speaker's heritage language as a contributor. Heritage languages are typically described as nondominant varieties that are spoken in the home or community; however, heritage languages also include varieties that are not necessarily spoken or understood but with which a speaker or his or her family culturally identifies (Kelleher, 2010; Ofelia, 2005; Peyton, Ranard, & McGinnis, 2001).

Studies of AAE dialect use as a function of a child's heritage language are important because the field of speech-language pathology lacks information not only about this specific type of variation, but also about AAE dialect variation in general. Much of what the field knows about AAE comes from published lists of forms that contrast with mainstream varieties of American English. These lists perpetuate an idealized or homogenized version of AAE (Wolfram, 2007), one that if used as the guidepost within an assessment may unfairly penalize children whose AAE dialects do not match the codified variety. To improve upon these lists, studies of different groups of children are needed to document the range of typical variation that exists within AAE. With this knowledge, researchers and clinicians should be better equipped to identify AAE-speaking children who also present with atypical variation that is caused by a language impairment.

In the current work, we compared the copula and auxiliary systems for the verb BE in two groups of AAE-speaking children who varied in their Gullah/Geechee (GG) heritage. Analyses focused on the children's various BE forms to determine if differences existed between the groups, the nature of the differences, and the potential impact of the differences on interpretations of ability, especially if interpretations of the children's copula and auxiliary verb BE systems were based on an idealized or homogenized version of AAE. As background, we review information about GG, the GG corridor in the United States, and the

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copula and auxiliary BE systems in Gullah and AAE speakers. We also describe three types of dialect variation that have been documented in previous studies to gain insight into the possible ways children's use of AAE may differ from one another.

Gullah, Geechee, GG, and the GG Corridor

Gullah, Geechee, and GG are terms that describe both a cultural group and an English-based creole that is spoken in the GG corridor (https://www.gullahgeecheecorridor.org/). This area spans from Florida through Georgia and South Carolina up to North Carolina. Residents of the corridor identify themselves and their language on the basis of their cultural heritage and geography. South Carolina Sea Island residents refer to themselves and their language as Gullah, Georgia Sea Island residents near the Ogeechee River refer to themselves and their language as saltwater Geechee, and residents of South Carolina low country refer to themselves and their language as GG (Nichols, 2009). Gullah, Geechee, and/or GG is rarely spoken publicly (unless it is commodified for tourism), and the census does not acknowledge any of these varieties as an official language. Nevertheless, Klein (2013a) estimated that there are 10,000 speakers of Gullah (which we assume includes Geechee and GG), and Wikipedia estimates 250,000 (Gullah Language, n.d.).

Estimated numbers of Gullah, Geechee, and/or GG speakers, however, do not include the AAE-speaking children with GG heritage studied here or the many adults and children who live in and outside of the GG corridor who speak a dialect of English that is influenced by their Gullah, Geechee, or GG heritage. Gullah, Geechee, and GG also share some of the same grammatical features (including a BE system that is variably marked) as other creoles, including, but not limited to, Haitian Creole, Jamaican Creole, Hawaiian Creole, and Sierra Leone Krio. With over 1 million immigrants in the United States from Haiti and Jamaica, and over 4 million from the West Indies or sub-Saharan Africa (https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml), the number of English speakers with a creole heritage in the United States is significant, and this number increases dramatically when English users worldwide are considered (Saraceni, 2015).

BE in Adult Gullah and Adult and Child AAE Speakers

Turner (1949) completed one of the first studies of Gullah by transcribing stories, prayers, songs, and recollections of events from residents of South Carolina in the 1930s (see also Bickerton, 1975; Hackert & Holm, 2009; Holm, 1984; Mufwene, 1991, 1994, 2004; Rickford, 1991, 1998, 1999; Sharma & Rickford, 2009; Weldon & Moody, 2015; Winford, 1992). From Turner's work, various creole forms of copula and auxiliary BE were documented, including: overt forms (e.g., "dɑt wəz ə umən"; gloss: That was a woman), zero forms (e.g., "wi dʌn"; gloss: We Ø done), BEEN for *was* and *were* ("Wɛn dɑt fʌs stɒm bɪn yɛ"; gloss: When that first storm was here), and *də* for all forms of BE ("wi; də gwɒɪn"; gloss: We are going).[1]

Studies of more recent versions of Gullah from the 1960s to 1980s continued to document speakers' use of zero marking and *də* for all forms of BE and BEEN for *was* and *were* (Cunningham, 1992; Jones-Jackson, 1978, 1983, 1987; Klein, 2013a, 2013b, 2015; Mille, 1990; Mufwene, 2004). In addition, Cunningham (1992) and Mille (1990) offered examples of BE leveling (i.e., *was* for *were*) in Gullah from this time period. Last, using data collected in the 1990s, Weldon (1998, 2003a, 2003b) compared adult Gullah speakers' productions of copula and auxiliary *am, is,* and *are* with those of adult AAE speakers. Results showed that the Gullah speakers variably marked all three forms, with rates of overt marking equaling 53% for *am,* 51% for *is,* and 25% for *are*. By comparison, the AAE speakers produced categorically high rates of overtly marked *am* (99%), with variable rates of marking for *is* (43%) and *are* (29%).

Findings from many other studies are consistent with Weldon's AAE results and show that for both adults and children, copula and auxiliary forms of BE in AAE are typically overtly marked at high rates (> 90%) for *am, was,* and *were,* with variable rates of marking for *is* and *are* (e.g., Blake, 1997; Garrity & Oetting, 2010; Green, 2002; Newkirk, Oetting, & Stockman, 2014; Rickford, 1998; Rickford, Ball, Blake, Jackson, & Martin, 1991; Roy, Oetting, & Moland, 2013). In AAE, rates of overt marking also are lowest for *are,* and speakers can level BE, which leads to the use of *is* and *was* within *are* and *were* contexts. As is evident by this review, adult Gullah and adult and child AAE BE forms are similar, but they differ in important ways. Although Gullah and AAE allow variable marking of *is* and *are* and BE leveling, Gullah also allows variable marking of *am, was,* and *were,* BEEN for *was* and *were,* and *də* for all forms of BE.

AAE Dialect Variation

Three types of variation have been documented in previous AAE studies and in studies comparing AAE to other dialects of English (e.g., Cukor-Avila, 2001; Cukor-Avila & Bailey, 2015; Nguyen, 2006; Oetting, 2015; Oetting & McDonald, 2001; Poplack & Tagliamonte, 2001; Rickford, 1999, 2015; Wolfram & Thomas, 2002). The most common of the three involves the rates at which speakers produce different types of linguistic forms. As an example, Newkirk

[1]Within studies of Gullah, authors notate *been* (e.g., BEEN, bin-a, BIN, been) and *də* (e.g., *de*, *da*, *duh*, *deh*) differently depending on the speaker's productions, the grammatical function of the form, and the authors' preferences. We use the notations BEEN and *də* whenever these forms or variants of these forms serve as a copula or auxiliary *am*, *is*, *are*, *was*, or *were*.

et al. (2014) used rate-based metrics to examine differences between children who varied in their nonmainstream AAE dialect use (low vs. medium vs. high). Analyses focused on the children's use of BE, DO, and modal auxiliaries. Dialect variation was found for the children's use of BE and DO but not modal auxiliaries, and the variation was greatest for BE. Moreover, when the various BE forms were examined, differences were limited to the children's rates of overtly marked *is* and *are* (i.e., low users: ≥ 70%; medium users: 42%–62%; high users: < 35%). As demonstrated by these data, variation within this group of AAE speakers with typical language development involved the rates at which they overtly marked particular types of auxiliaries.

The two other types of variation that have been documented in dialect studies include the use of unique forms, such as *ain't* and *a-verbing* (i.e., forms that are produced by some speaker groups but not others), and unique uses of shared forms, such as *be, been, come, done, had,* and *steady* (i.e., forms that are produced by multiple speaker groups but serve unique or expanded grammatical functions for some groups). Sociolinguists refer to these latter types as camouflaged forms because they appear on the surface to be the same within multiple dialects. Using *be* as an example, this structure can be produced in AAE and in other English dialects as a nonfinite verb (e.g., *He wants to be a comedian*), but for some AAE speaker groups, *be* can also express habitualness (e.g., *He be funny,* as in funny all the time or often) and/or the iconic and equative nature of something (e.g., *He be Saturday Night Live,* as in he is the iconic symbol of Saturday Night Live). To distinguish among these various grammatical functions of *be,* Alim (2004) and others have used superscripts to notate the various forms (e.g., *be,* be^2, and be^3).

Research Questions

Given the literature on Gullah and AAE, we wanted to know if BE use by AAE-speaking children with a GG heritage differs from that of AAE-speaking children without this heritage. If differences existed, we wanted to know the nature of the differences and the potential impact of the differences on interpretations of children's language abilities. Three tasks (i.e., a published language screener, elicitation probes, and language samples) were used to collect the data because these types of tasks are often used by professionals within the field. Studies also have shown that a speaker's use of nonmainstream dialect forms can vary across tasks, with higher rates of use in tasks that are less formal (Connor & Craig, 2006; Craig, Kolenic, & Hensel, 2014; Ivy & Masterson, 2011; Thompson, Craig, & Washington, 2004; Washington, Craig, & Kushmaul, 1998).

The research questions were: (1) Does children's use of BE differ as a function of their GG heritage? (2) What is the nature of the differences? (3) Do the differences have the potential to affect interpretations of the children's language abilities?

Methods

Participants

The participants were 38 African American children, aged 5 to 6 years, who attended public kindergartens. The 19 in the +GG group had families who self-identified as presenting a GG heritage and lived in rural areas in South Carolina where GG has been historically spoken (i.e., inland low country Berkeley County areas of Huger, Cainhoy, and Wando and Charleston County areas of North Charleston, Charleston, Awendaw, McClellanville, and Mt. Pleasant). The 19 in the −GG group were selected from an archival database that had been collected as part of a larger study in rural Louisiana; previous studies of the AAE dialects of the children in this area have been highly consistent with other AAE studies (Oetting & Pruitt, 2005). Each group included 11 boys and eight girls. The average age in months of the +GG and −GG group was 73.32 (4.74) and 64.68 (3.09), respectively, and their average maternal education level in years was 13.74 (1.73) and 13.11 (3.04), respectively. One-way analysis of variance (ANOVA) revealed no group effect for maternal education ($p = .44$; $\eta^2 = .01$) but a significant group effect for age (+GG > −GG), $F(1, 36) = 44.22$, $p < .001$, $\eta^2 = .55$, even though all of the children were enrolled in kindergarten and were between the ages of 5 and 6 years. The children's ages also were not correlated to their rates of overtly marked forms of BE (i.e., $r < .10$).

The dialects of the children were classified as a variety of AAE for two reasons. First, on Part I of the Diagnostic Evaluation of Language Variation Screening Test (DELV-S; Seymour, Roeper, & de Villiers, 2003), the dialects of the two groups were indistinguishable, with similar numbers of children classified as speaking a dialect with some (+GG = 4 and −GG = 3) or strong variation from mainstream American English (+GG = 15 and −GG = 16). When a dialect density metric (nonmainstream responses/sum of mainstream and nonmainstream responses) was calculated using the children's DELV-S responses, the groups' average dialect density metrics (+GG $M = 0.80$, $SD = 0.17$; −GG $M = 0.85$, $SD = 0.14$) also did not differ when tested by an ANOVA ($p = .29$; $\eta^2 = .03$).

Second, we asked six experienced examiners (three from South Carolina and three from Louisiana who self-identified as one AA, one White, one Cajun, one AA and Guyanese, and two GG) to rate each child's language variety as GG, GG-influenced AAE, or AAE after listening to a 1-min excerpt of conversation from each child. Two raters were professors with 20+ years of residence in their respective areas, two were doctoral students who had completed coursework in English dialect variation and were working on dissertations with nonmainstream English speakers, and two were master's degree–level graduate students. During the task, the raters were blind to the identity of the children, and they completed the task and their ratings independently. Results indicated that none of the +GG children was classified as speaking GG by all of the raters, and only two +GG children were classified as speaking GG by four raters. Instead of GG, five +GG

children were classified as speaking a GG-influenced variety of AAE by four or more raters, three were classified as speaking AAE by four or more raters, and nine were classified with all three labels (i.e., GG, GG-influenced AAE, AAE) by one to three raters. By comparison and not surprisingly, 16 of the −GG children were classified as speaking AAE by four or more raters, and three were classified as speaking AAE by three raters.

Interestingly, the Louisiana raters more accurately differentiated the two groups on the basis of their creole heritage than the South Carolina raters. In particular, out of 57 ratings (3 raters × 19 children), the Louisiana raters selected GG or GG-influenced AAE 45 (79%) times when listening to a +GG excerpt and AAE 55 (96%) times when listening to a −GG excerpt. By comparison, out of 57 ratings (3 raters × 19 children), the South Carolina raters selected GG or GG-influenced AAE 32 (56%) times when listening to a +GG excerpt and AAE 41 (72%) times when listening to a −GG excerpt. However, the task was likely not equivalent across raters. Gullah, Geechee, and GG are not spoken in Louisiana. Thus, the Louisiana raters were making decisions about who was and was not speaking a language variety from Louisiana. In contrast, the South Carolina raters were making decisions about different language varieties and dialects they hear within their communities. For these three raters, 28% of their 57 ratings for the +GG children were for GG, 28% were for GG-influenced AAE, and 44% were for AAE. Although the South Carolina raters did not always classify the children's language varieties in the same way, their classifications were moderately correlated; interclass correlation = .77, $p < .001$.

None of the children presented speech or language concerns or a history of concerns as recorded by caregiver report. Nevertheless, to further describe the psycholinguistic profiles of the groups, and when possible match the children between the groups, scores from four tests were considered (see Table 1). These were the Primary Test of Nonverbal Intelligence (PTONI; Ehrler & McGhee, 2008), the Goldman-Fristoe Test of Articulation–Second Edition (GFTA-2; Goldman & Fristoe, 2000), the syntax subtest of the Diagnostic Evaluation of Language Variation: Norm-Referenced Test (DELV-NR; Seymour, Roeper, & de Villiers, 2005), and the Peabody Picture Vocabulary Test–Fourth Edition (PPVT-4; Dunn & Dunn, 2007). These tests were administered and scored according to the manuals and without modifications made for the children's dialects.

Table 1. Test score means (*SD*) by group.

Group	PTONI	GFTA-2	PPVT-4	DELV-NR
+GG	87.37 (11.36)	107.26 (2.62)	97.84 (7.78)	8.84 (1.86)
−GG	96.05 (9.80)	107.05 (2.76)	94.74 (9.50)	8.84 (1.12)

Note. GG = Gullah/Geechee; PTONI = Primary Test of Nonverbal Intelligence; GFTA-2 = Goldman-Fristoe Test of Articulation–Second Edition; PPVT-4 = Peabody Picture Vocabulary Test–Fourth Edition; DELV-NR = Diagnostic Evaluation of Language Variation: Norm-Referenced Test.

All of the children scored above −1 *SD* of the normative mean for all tests except for four in the +GG group who scored below −1 *SD* on the PTONI and three in the +GG group who scored below −1 *SD* on the DELV-NR. These children were not excluded from the study because their GFTA-2 and PPVT-4 scores were within normal limits. Also, these children's DELV-NR scores could have been negatively affected by differences between their dialect of AAE and that of the DELV-NR's normative sample. Last, ANOVAs indicated that the groups did not differ on their DELV-NR ($p = 1.0$; $\eta^2 < .001$), GFTA-2 ($p = .81$; $\eta^2 = .002$), or PPVT-4 ($p = .28$; $\eta^2 = .03$) scores. Although the groups differed on their PTONI scores (+GG < −GG), the effect size of the difference was small, $F(1, 36) = 6.36$, $p = .02$, $\eta^2 = .15$. The children's PTONI scores also were not correlated to their rates of overtly marked forms of BE (i.e., $r < .22$).

Materials

After institutional review board approval and caregiver consent, three tasks were used to elicit BE forms from the children. These included the DELV-S, two elicitation probes, and a language sample. The first author, who is a native speaker of GG and fluent in both AAE and mainstream American English, elicited the data from the +GG group, and she along with other examiners elicited the data from the −GG group as part of the larger Louisiana study. Examiners were encouraged to speak mainstream American English during all sessions.

DELV-S

Two items from Part I and five items from Part II of the DELV-S are designed to elicit a copula or auxiliary *was* or *were*. Of the 266 (7 items × 38 children) responses to these items, 64 (24%; +GG $n = 33$; −GG $n = 31$) were not included in the analysis because they did not obligate a *was* or *were* form (e.g., child produced *rained* for *was raining*). These types of unscored responses are not surprising on the DELV-S, given the open-ended nature of the items (e.g., Item 15: while pointing to left picture, examiner says, "These girls couldn't get out of bed, and their mother gave them some medicine." While pointing to right picture, examiner says, "Today they are not sick." While pointing to the left picture again, examiner says, "Why did their mother give them medicine yesterday?"). Although the target response to this item is a BE form (e.g., "Cause they were sick"; "they was sick"; "they Ø sick"), some children answered the question with other types of responses (e.g., "because they had a cold"). Excluding these types of responses when using data from the DELV-S is consistent with others who have used this screener to examine children's mainstream and nonmainstream grammar productions (e.g., Terry, Connor, Petsher, & Conlin, 2012).

Elicitation Probes

Two experimental probes were used to elicit auxiliary *is, are, was,* and *were* from the children. The probes were

created as part of the larger Louisiana study. The *is/are* probe consisted of sixteen 4-s videos of adult, child, and puppet actors. The videos showed the actors engaged in actions to elicit eight *is* forms: make, paint, scratch, clap, stick out, fan, stack, pound; and eight *are* forms: punch, sneeze, open, cry, shiver, drop, bang, wash. Before each video, the examiner provided a prompt to introduce the scene (e.g., "The mouse seems strong. Tell me what you see"). Then, the examiner played the video and recorded the child's response (e.g., *He is pushing a car; He Ø moving a car; He is making a car go*). As indicated by these examples, children were allowed to describe the videos using a variety of main verbs. Prior to each probe, videos of four actions were played for training.

The *was/were* probe consisted of sixteen 6-s videos of the same set of actors. Eight of the videos were designed to elicit *was* forms: feed, drink, touch, rock, lick, brush, talk, hammer; and eight were designed to elicit *were* forms: build, sleep, color, bounce, hug, bow, mix, cut. Before each video, the examiner asked the child to watch the video using the target verb (e.g., "Watch the bear touch his ears"). Then, the examiner played the video and repeated the prompt two more times. While the action continued on the video, the examiner covered the video so the child could no longer see the action. The examiner then asked the child to tell the examiner what he/she remembered seeing (e.g., examiner: "Before I covered this up, tell me what you remember about the bear"; child: *He was touching his ears* or *He Ø hitting his ears* or *He was patting his ears*). As with the *is/are* probe, children were allowed to describe the videos using a variety of main verbs. Prior to each probe, videos of four actions were played for training.

Administration of the probes was audio-recorded for later transcription and coding. Of the 1,216 (32 items × 38 children) responses, 104 (8.4%; +GG $n = 23$; −GG $n = 81$) were not included in the analysis. As with the DELV-S, almost all of the unscored items were because the child's response did not obligate a BE form. In particular, 49% included different syntax, such as *he pushes* for *he is pushing* or *they hugged* for *they were hugging*. In addition, 47% of the unscored responses were verbs without a subject, such as *hug* or *hugging*. Both of these types of responses do not obligate a BE form; without the subject produced, the response may reflect an action label rather than a verb produced within a predicate context. Last, 3% of the unscored responses included a BE form with a verb produced for a previous item, such as *was hugging, were hugging*, and < 1% ($n = 1$) could not be transcribed due to unintelligibility or toy noise.

Language Sample

Samples were elicited by having each child and an examiner play together for 20–30 min. Materials used during play included a gas station set, picnic/park set, baby doll set, and three action pictures (e.g., kids fishing, grocery shopping, or washing a car). Each sample included at least 200 complete and intelligible utterances per child, with the number elicited for the +GG and −GG children totaling 4,508 and 4,431, respectively. Each sample was audio-recorded, transcribed, and coded for various forms of copula and auxiliary BE using WavPedal software (WavPedal.com) and Systematic Analysis of Language Transcripts software (Miller & Iglesias, 2012). Transcription and coding of the samples included at least three passes by at least two people following Oetting et al. (2014).

Copula and auxiliary BEEN forms did not include those expressing present, past, or future perfect tense (e.g., *I have been to Blue Bayou before* or *I Ø been to Blue Bayou before*) or those expressing remote past (e.g., *I been knowing that*; gloss: I have known that for a long time). In the field of sociolinguistics, the former is often described as unstressed *bin,* and the latter is described as stressed *BIN*. Both *bin* and *BIN* are produced in GG and AAE. Linguistic diagnostics provided by Green (2002) were used to identify only those forms that served as a copula or auxiliary BE. For an inventory of all utterances with BEEN and examples and frequency counts of all *bin* and *BIN* forms that were not analyzed, see Berry (2015).

Reliability

For the probes, two raters independently scored data from six (32%) of the +GG children and 20% of the children who participated in the larger Louisiana study. Rates of agreement were 97% and 95%, respectively. For the language samples, intrarater reliability (with a 4-month span between the original samples and the reliability samples) was checked with 20% of the data from the +GG children, and interrater reliability was checked for 20% of the data for the children who participated in the larger Louisiana study. For the +GG and −GG groups, the rates of agreement for the transcription and coding of BE were 93% and 94%, respectively.

Validity

Examiner effects are always a threat to validity in dialect studies, especially when the tasks used to collect the data involve newly created probes and unstructured language samples. Given this, we checked all recordings for the examiners' use of BE within the probes. None was found in the +GG probes, and two were found in the −GG probes (i.e., an examiner produced one *are* and one *were* on a second attempt to elicit *were* from a child; neither production led to a scored response). We also checked the examiners' utterances within the language samples for use of any nonmainstream English forms, and the average percentage of utterances with a nonmainstream English form per examiner was very low ($M = 2.3$; $SD = 2.6$; range = 0–3.6). Last, we checked the first author's use of Gullah-related forms (i.e., zero BE, BEEN, and *də*) within the +GG language samples. Within the 1,539 examiner utterances, we found only one zero marked form of *am.* These findings indicate that the children's probe and sample data were free from examiner effects.

Results

Preliminary Analysis

Studies of children speaking AAE typically combine productions of *was* and *were* (e.g., Newkirk et al., 2014; Roy et al., 2013). Both of these forms, and especially *were,* are infrequent in conversational samples, and combining them together increases the number of children who can contribute data to an analysis. Moreover, AAE speakers often level BE, producing *was* for both singular and plural subjects. As a preliminary analysis, we examined whether the children's *was* and *were* forms could be combined. Although the −GG group produced more *was* for *were* forms than the +GG group across all tasks, for the probes and samples, each group's rate of overt marking for *was* did not differ from their rate of overt marking for *were*. Given this, we combined these forms for these two data sets. The DELV-S data were analyzed differently because rates of *was* and *were* differed for both groups. As a published screener, we also were interested in considering the children's responses in light of the DELV-S's scoring guidelines.

DELV-S

For the seven *was* or *were* items on the DELV-S, the +GG group produced five different types of BE responses, and the −GG group produced four. These forms were: overt *was,* overt *were,* zero *was, was* for *were,* and BEEN (see Table 2). Chi-square analyses indicated that more children in the −GG group produced *was* for *were* responses than in the +GG group (n = 17 vs. n = 9), $X^2(1) = 8.32$, $p = .004$, and more children in the +GG group produced zero *was* and BEEN than in the −GG group (n = 8 vs. n = 2), $X^2(1) = 5.15$, $p = .023$. The children's average frequencies of zero *was* and BEEN also differed between the groups: +GG $M = 0.89$, $SD = 1.59$; −GG $M = 0.11$, $SD = 0.32$; $F(1, 36) = 4.48$, $p = .04$, $\eta^2 = .11$. Recall that *was* for *were* occurs in both Gullah and AAE, whereas zero *was* and BEEN occur in Gullah only. Also, *was* for *were* responses, because they are known to be felicitous in AAE, are incorporated into the scoring guidelines of the DELV-S. All other nonmainstream responses, including zero *was* and BEEN are treated as errors within the risk portion of the screener.

Next, we calculated the children's rates of overtly marked *was* and *were* forms out of the sum of their overtly marked and zero marked forms. Whereas the +GG group's average was below 90% (which is lower than what is typically reported for adult and child speakers of AAE), the +GG and −GG group's rates of overtly marked *was* did not differ when tested with a one-way ANOVA (+GG M = 81%, SD = 34 vs. −GG M = 94%, SD = 23; $p = .21$, $\eta^2 = .04$). The groups also did not differ in their rates of overtly marked *were*, regardless of whether *was* for *were* forms were included in the calculation; both groups: M = 100% (SD = 0).

Elicitation Probes

The children produced many different types of BE forms during the elicitation probes. For the *is/are* probe, these included: overt *is* and *are*, zero *is* and *are,* and BEEN for *is*. For the *was/were* probe, these included: overt *was* and *were,* zero *was* and *were, was* for *were,* and BEEN for *was* and *were* (see Table 3). Chi-square analyses indicated that the number of children who produced one or more of the nonmainstream forms that occur in both Gullah and AAE (i.e., zero *is,* zero *are,* and *was* for *were*) did not differ between the groups (+GG n = 16 vs. −GG n = 18), but their average frequencies of these forms did, $F(1, 36) = 4.43$, $p = .04$, $\eta^2 = .11$. As with the DELV-S, the −GG group (M = 10.37, SD = 6.16) produced more of the nonmainstream forms that occurred in both Gullah and AAE than did the +GG children (M = 6.11; SD = 6.32), and this finding was driven by their higher frequencies of *was* for *were*. The number of children who produced one or more of the Gullah forms (i.e., zero *was,* zero *were,* and BEEN) also differed between the groups (+GG n = 10 vs. −GG n = 5), $X^2(1) = 17.39$, $p = .026$, as did their average frequencies of these forms (+GG group: M = 5.16; SD = 6.14; −GG group: M = 0.95; SD = 2.97), $F(1, 36) = 7.24$, $p = .01$, $\eta^2 = .17$. As with the DELV-S, if scoring of the probes were based on an idealized or homogenized version of AAE, the children's zero *is,* zero *are,* and *was* for *were* responses would have been interpreted as dialect appropriate, and their zero *was,* zero *were,* and BEEN responses would have been interpreted as dialect inappropriate.

Next, we calculated rates of overt marking for *is, are,* and *was/were,* again by dividing the children's overtly marked *is, are,* and *was/were* forms by the sum of their

Table 2. DELV-S: Frequencies and means (*SD*) of BE responses by group.

Group	*Was*	*Was* for *were*	*Were*	Zero *was*	BEEN for *was*
+GG					
Frequency	60	13	9	5	12
M (*SD*)	3.16 (1.56)	0.68 (0.82)	0.47 (0.70)	0.26 (0.56)	0.63 (1.61)
−GG					
Frequency	75	21	4	2	0
M (*SD*)	3.95 (1.27)	1.11 (0.57)	0.21 (0.42)	0.11 (0.32)	0.00 (0.00)

Note. DELV-S = Diagnostic Evaluation of Language Variation Screening Test; GG = Gullah/Geechee.

Table 3. Probes: Frequencies and means (*SD*) of BE responses by group.

Group	*Is*	*Is* for *are*	Zero *is*	BEEN for *is*
+GG				
Frequency	114	11	37	1
M (*SD*)	6.00 (2.77)	0.58 (1.74)	1.95 (2.57)	0.05 (0.23)
–GG				
Frequency	84	11	36	0
M (*SD*)	4.42 (3.31)	0.58 (1.45)	1.89 (2.62)	0 (0.00)
	Are	**Are for *is***	**Zero *are***	**BEEN for *are***
+GG				
Frequency	86	1	48	0
M (*SD*)	4.53 (3.17)	0.05 (0.23)	2.53 (3.04)	0 (0.00)
–GG				
Frequency	64	9	61	0
M (*SD*)	3.37 (3.15)	0.47 (1.43)	3.21 (3.12)	0 (0.00)
	Was	***Was* for *were***	**Zero *was***	**BEEN for *was***
+GG				
Frequency	92	31	45	4
M (*SD*)	4.84 (3.42)	1.63 (2.48)	2.37 (3.10)	0.21 (0.71)
–GG				
Frequency	118	100	11	0
M (*SD*)	6.21 (2.59)	5.26 (2.90)	0.58 (1.64)	0 (0.00)
	Were	***Were* for *was***	**Zero *were***	**BEEN for *were***
+GG				
Frequency	63	3	46	3
M (*SD*)	3.32 (3.66)	0.16 (0.50)	2.42 (3.19)	0.16 (0.50)
–GG				
Frequency	23	3	7	0
M (*SD*)	1.21 (1.87)	0.16 (0.38)	0.37 (1.38)	0 (0.00)

Note. GG = Gullah/Geechee.

overtly marked and zero marked forms (see Table 4). Results from a 2 (group) × 3 (verb) ANOVA indicated that the children's rates of overt marking varied by verb, $F(2, 68) = 4.34$, $p = .02$, $\eta^2 = .11$, and this main effect was qualified by a Verb × Group interaction, $F(2, 68) = 3.86$, $p = .03$, $\eta^2 = .10$. Follow-up analyses with least significant difference *t* tests indicated that the verb effect was limited to the −GG group, $F(2, 34) = 7.69$, $p = .002$, $\eta^2 = .31$, who produced higher rates of overtly marked *was/were* (88%) than *is* (65%) and *are* (49%). In addition, there was a marginal effect of group for rate of overtly marked *was/were* (+GG = 63% < −GG = 88%), $F(1, 36) = 4.02$, $p = .052$, $\eta^2 = .10$, with no group effects observed for rates of overtly marked *is* or *are*. In other words, the +GG group's use of zero forms that occur in Gullah but not AAE led to lower rates of overtly marked *was/were*. This finding, although consistent with the +GG children's creole heritage, is inconsistent with what is typically documented for adult and child AAE speakers.

Table 4. Probes: Mean rates in % (*SD*) of overt marking by BE form and group.

Group	*Is*	*Are*	*Was/were*
+GG	75 (33)	64 (39)	63 (44)
–GG	65 (42)	49 (43)	88 (29)

Note. GG = Gullah/Geechee.

Language Samples

Both groups produced many different mainstream and nonmainstream forms of BE during the language samples. As shown in Table 5, we organized the nonmainstream forms into three categories: nonmainstream forms that

Table 5. Language sample: Frequency of BE forms by group.

Form	+GG	–GG
Mainstream forms in Gullah and AAE		
Am	63	79
Is	415	436
Are	51	62
Was/were	366	265
Nonmainstream forms in Gullah and AAE		
Zero *is*	138	340
Zero *are*	76	140
BE leveling: *is* for *are*	3	19
BE leveling: *was* for *were*	24	31
I'ma	12	25
Nonmainstream forms in Gullah only		
Zero *am*	36	7
Zero *was/were*	20	15
BEEN	61	0
dɔ	4	0
Unproductive forms in Gullah and AAE		
Are for *is*	1	5
Were for *was*	2	1
Total BE contexts	1,272	1,425

Note. GG = Gullah/Geechee; AAE = African American English.

occur in both Gullah and AAE, nonmainstream forms that occur in Gullah only, and nonmainstream forms that appear unproductive in both Gullah and AAE. The nonmainstream forms that occur in both Gullah and AAE include the three previously identified forms (i.e., zero marked *is,* zero marked *are,* BE leveling involving *is* for *are* and *was* for *were*) and *I'ma*, which is a contraction of the phrase "I am going to." Although we found no evidence of *I'ma* in a sample of Turner's early Gullah transcripts that we reviewed (Turner, 1949), we added this form to the others because this contraction has been well attested in child AAE speakers (e.g., Oetting & McDonald, 2001; Newkirk et al., 2014) and is regularly produced by modern-day speakers of GG. Although the number of children who produced these shared nonmainstream forms did not differ between the groups (+GG $n = 18$; −GG $n = 19$), their average frequencies within samples did, $F(1, 36) = 14.26$, $p = .001$, $\eta^2 = .28$. As was found for the DELV-S and probes, the average frequency of these forms was higher for the −GG group ($M = 29.21$, $SD = 14.05$) than for the +GG group ($M = 13.32$, $SD = 11.80$).

The Gullah-related forms included both zero forms and overt forms, and the groups differed in their use of both of these. The +GG group produced 56 zero *am* and zero *was/were* forms compared with the −GG group's 22 productions. The +GG group also produced 61 BEEN forms and four *də* forms, whereas the −GG group did not produce any of these forms. Not surprisingly, the number of children who produced the Gullah forms differed between the groups (+GG $n = 16 >$ −GG $n = 10$), $X^2(1) = 4.39$, $p = .036$, as did their frequencies of these forms within the samples (+GG $M = 6.37$, $SD = 5.96$; −GG $M = 1.16$, $SD = 1.57$), $F(1, 36) = 13.56$, $p = .001$, $\eta^2 = .27$.

Both groups also produced a very small number (total sum = 9) of *are* for *is* and *were* for *was* forms. Neither of these is produced at meaningful rates in modern-day varieties of GG or AAE. Low frequencies of these forms in the data suggest that they were not highly productive for either group studied here.

Last, to examine the children's rates of overt marking, we divided the children's overt forms of *am, is, are,* and *was/were* by the sum of their overt and zero forms (see Table 6). Results of a 2 (group) × 4 (verb) ANOVA revealed a significant main effect for verb, $F(3, 96) = 36.15$, $p < .001$, $\eta^2 = .53$, which was qualified by a significant Verb × Group interaction, $F(3, 96) = 8.05$, $p < .001$, $\eta^2 = .20$.

Table 6. Language sample: Mean rates in % (*SD*) of overt marking by BE form and group.

Form	+GG	−GG
Am	69 (36)	91 (25)
Is	76 (18)	52 (27)
Are	48 (41)	31 (30)
Was/were	88 (23)	95 (7)

Note. GG = Gullah/Geechee.

Follow-up analyses indicated that the verb effect held for both the +GG group, $F(3, 51) = 11.40$, $p < .001$, $\eta^2 = .40$ and the −GG group, $F(3, 45) = 32.12$, $p < .001$, $\eta^2 = .68$. However, the groups differed in their rates of overtly marked *is*, $F(1, 32) = 11.01$, $p = .002$, $\eta^2 = .26$, and *am*, $F(1, 32) = 4.36$, $p = .045$, $\eta^2 = .12$. These results reflect higher rates of *is* for the +GG group (76%) than for the −GG group (52%) and higher rates of *am* for the −GG group (91%) than for the +GG group (69%). Also, the order in which the various BE forms were overtly marked differed between the groups. The +GG group's order from highest rate to lowest rate was *was/were* (88%), *is* (76%), *am* (69%), and *are* (48%), whereas the −GG group's order was *was/were* (95%), *am* (91%), *is* (52%), and *are* (31%). Least significant difference *t* tests indicated that both groups overtly marked *are* at lower rates than they overtly marked the other forms. The +GG group also overtly marked *am* at lower rates than *was/were,* whereas the −GG group overtly marked *is* at lower rates than *was/were* and *am*.

Discussion

We completed the current study to learn more about dialect variation within AAE as a function of a child's creole heritage and about dialect variation within AAE in general. To do this, we compared the copula and auxiliary BE systems of two groups of AAE-speaking children who varied in their GG heritage. Analyses focused on the children's various BE forms to determine if differences existed between the groups, the nature of the differences, and the potential impact of the differences on interpretations of the children's abilities.

Differences Between the Groups

As summarized in Table 7, both groups of AAE-speaking children produced many of the same copula and auxiliary BE forms. They each produced four of these forms when responding to items on the DELV-S, 10 when they responded to items on the elicitation probes, and 15 when they engaged in free play with an adult. However, the groups also differed in their use of two forms, BEEN and *də*. Both of these were produced by the +GG group, with BEEN produced during all three tasks and *də* produced within the samples. In contrast, BEEN and *də* were never produced by the −GG group.

The two groups also differed in the frequency with which they produced some of the forms. Across tasks, the general trend showed the −GG group producing higher frequencies of forms that are shared across Gullah and AAE (i.e., zero *is,* zero *are,* BE leveling, *I'ma*) and the +GG group producing higher frequencies of copula and auxiliary forms that occur in Gullah only (i.e., zero *was,* zero *were,* BEEN, *də*). In particular, on the DELV-S, more children in the −GG group than the +GG group produced the shared forms, and on the probes and samples, average frequencies of these forms were higher for the −GG group than the +GG group. Across all three tasks, both

Table 7. BE forms produced across tasks.

Group	DELV-S	Probes	Language sample
+GG	Overt *was* and *were* Zero *was* Was for *were* BEEN	Overt *is*, *are*, *was*, *were* Zero *is*, *are*, *was*, *were* *Is* for *are* *Was* for *were* BEEN	Overt *am*, *is*, *are*, *was*, *were* Zero *am*, *is*, *are*, *was*, *were* *Is* for *are* *Was* for *were* *I'ma* *Are* for *is* *Were* for *was* BEEN *də*
–GG	Overt *was* and *were* Zero *was* Was for *were*	Overt *is*, *are*, *was*, *were* Zero *is*, *are*, *was*, *were* *Is* for *are* *Was* for *were*	Overt *am*, *is*, *are*, *was*, *were* Zero *am*, *is*, *are*, *was*, *were* *Is* for *are* *Was* for *were* *I'ma* *Are* for *is* *Were* for *was*

Note. DELV-S = Diagnostic Evaluation of Language Variation Screening Test; GG = Gullah/Geechee.

the number of children who produced the Gullah-only forms and their average frequencies of these forms were higher for the +GG group than the −GG group.

Last, given the aforementioned frequency differences, the groups differed in the rates at which they overtly marked some of the BE forms. The +GG group produced variable rates of marking for *am, was,* and *were,* whereas the −GG group overtly marked these forms at high rates. Variable marking of *was* and *were* by the +GG group was a repeated finding, because variable marking surfaced within the DELV-S for *was,* and within the probes and language samples for *was* and *were*. Less evidence of variable marking was found for *am* because this form was not elicited within the DELV-S or the probes. Nevertheless, when *am* contexts were elicited within the samples, it was variably marked by the +GG group. Moreover, the groups differed in the rates at which they overtly marked *am* and *is,* with the +GG group producing higher rates of the latter, and the −GG group producing higher rates of the former. These particular results led to different orders of overt marking for the forms (i.e., +GG: *was*/*were* = *is* > *am* > *are*; −GG: *was*/*were* = *am* > *is* > *are*) within the samples. Within the field of sociolinguistics, different orders of marking reflect different constraint hierarchies (cf. Roy et al., 2013).

Nature of the Group Differences

The nature of the group differences can be tied to the creole heritage of the AAE-speaking children. Recall that previous studies of Gullah describe a copula and auxiliary BE system that allows variable marking of *am, was,* and *were* and the use of BEEN and *də.* Consistent with this description of Gullah, the children in the +GG group variably marked *am, was,* and *were* and produced BEEN and *də*. In contrast, the children in the −GG group produced high rates of *am, was,* and *were* and never produced BEEN or *də* as a copula or auxiliary BE form. For this −GG group, use of BE was consistent with what is typically described for adult and child AAE speakers.

The nature of the group differences, although tied to the children's creole heritage, is also consistent with findings from other dialect studies. Recall from the literature review that three types of variation (i.e., use of unique forms, unique use of shared forms, and different rates of use of shared forms) have been previously documented. All three types of variation were evidenced here. As a unique form, *də* was produced by the +GG group but not the −GG group. As a shared form, BEEN was produced by both groups as a standard participle (e.g., *I have been to Blue Bayou*) and as marker of remote past (e.g., *I BIN knowing that*), but only the +GG group used this form as a copula or auxiliary BE. Last, although both groups produced the shared forms of *am, is, are, was, were,* and *I'ma* and leveled BE, they differed in their frequencies of these forms. As a result, the +GG group produced variable rates of marking for *am, was,* and *were,* and the −GG group produced categorically high rates.

Rate-based differences in the use of shared forms also can be observed by comparing the BE systems of the +GG group studied here to those of Turner's (1949) and Weldon's (2003a, 2003b) adult Gullah speakers. For example, Rosina Cohen and Diana Brown, two of Turner's speakers, produced BEEN and *də* in 32% and 55% of their copula and auxiliary BE contexts in one of their samples we reviewed.[2] By comparison, BEEN and *də* were produced by the +GG group studied here at an extremely low rate (e.g., 65 times out of 1,272 BE contexts within the samples = 5%). In addition, Turner's (1949) and Weldon's

[2]Transcribed samples from Rosina Cohen and Diana Brown are provided by Turner (1949, pp. 268–269; for a detailed analysis of these transcripts, see Berry, 2015).

(2003a, 2003b) adult Gullah groups overtly marked the various BE forms at different rates from each other and from the +GG child group (e.g., overt marking of *is*: Turner = 46%, Weldon = 51%, +GG = 76%). Of added interest is the finding that the +GG group's overt marking of *is* was higher than the −GG group's and higher than what is typically described for adult and child AAE speakers. If replicated in a larger study, one explanation for this finding is that it (along with the children's other Gullah-related uses of BE and their lower frequencies of the nonmainstream forms that are shared between Gullah and AAE) reflects their families' conscious or unconscious use of language as a marker of GG cultural identity (for studies showing AAE to evolve in ways that maintain a subgroup's cultural identity, see Nguyen, 2006; Weldon, in press; Wilkerson, 2008; Wolfram & Thomas, 2002; for a similar evolutionary pattern for Cajun English, see Dubois & Horvath, 1998, 1999).

Impact of Differences on Interpretations of Ability

The group differences documented here have the potential to affect interpretations of the children's language abilities, especially if an idealized or homogenized version of AAE is used to guide the assessment. Recall that within the DELV-S (and within the manuals of many other tests that provide scoring modifications for AAE), children are not penalized for producing nonmainstream forms that are well attested in AAE, but they are penalized for other types of nonmainstream forms. Given this, the +GG children studied here would likely accrue penalties every time they zero mark *am, was,* or *were* or produce a copula or auxiliary BEEN or *də*. Across the three tasks administered, the total number of these nonmainstream forms equaled 237, and they were produced by 16 of the 19 children in the +GG group.

The ages, maternal education levels, test scores, and nonmainstream dialect densities of the three +GG-speaking children who did not produce the Gullah forms were not unlike the majority of the other +GG-speaking children's ages, levels, and scores. In fact, these children's nonmainstream dialect densities from the DELV-S were all high (range = 0.58–0.82), and one of these children was identified as one of the two GG speakers by four of the six raters (with the other two identified by three raters as GG + AAE and by three raters as AAE). In other words, none of the measures we collected successfully predicted the creole nature of the +GG children's copula and auxiliary BE systems or helped to distinguish the +GG-speaking children from the −GG-speaking children. Had we not read the creole literature, searched for unique forms, and rigorously explored the children's use of shared forms, we are confident we would have missed or greatly underestimated the within-dialect variation that existed within these AAE child speakers. More importantly, we may have interpreted the copula and auxiliary BE systems of many of the +GG-speaking children as atypical for AAE and as possibly related to inefficient (i.e., impaired) learning mechanisms.

Implications of the Findings

To move the field forward, the current findings should be used to encourage professionals to ask families about heritage languages as part of all research and clinical endeavors and to strategically look for different types of variation when working with children. As was done here, strategic pursuits should include asking children to engage in different types of language tasks that vary in formality. Recall that language samples collected through play most successfully elicited the greatest diversity of nonmainstream auxiliary forms from the children, and this was especially true of those with +GG heritage. Different types of narrative tasks also may be useful for eliciting a variety of nonmainstream English forms from children (Mills, 2015).

The findings also should be used to revise the way AAE (and other nonmainstream dialects) is presented in textbooks and resource manuals. Instead of listing the forms that contrast with mainstream American English, forms could be organized by type of variation (i.e., use of unique forms, unique uses of shared forms, different rates or use of shared forms). For the shared forms that serve unique or expanded functions for some groups (e.g., *been, də, be, come, dən, done, had,* and *steady*), diagnostic tests provided by Green (2002) and others could be presented to help professionals identify a child's use of these forms and their various functions within the child's grammar.

Last, rate-based information about the shared forms for different groups of speakers should be provided to help professionals better understand typical variation within dialects. As was shown here, this rate-based information could be presented for children not only who speak different dialects from each other, but also for children who speak the same dialect but differ on other important variables. Although a child's creole heritage was examined here as a contributor to dialect variation, other heritage languages and variables likely influence a child's use or a dialect(s) in highly systematic ways. Some of these variables include, but are not limited to, a child's gender, age, socioeconomic status, type of community, and region of the country.

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