Published in final edited form as:

Clin Linguist Phon. 2011 August ; 25(8): 725–740. doi:10.3109/02699206.2011.553700.

Children's Relative Clause Markers in Two Nonmainstream Dialects of English

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Abstract

Purpose—We examined children's productions of mainstream and nonmainstream relative clause markers (e.g., *that*, *who*, *which*, *what*, *where*, $\emptyset$) in African American English (AAE) and Southern White English (SWE) as a function of three linguistic variables (syntactic role of the marker, humanness of the antecedent, and adjacency of the noun phrase head).

Method—The data were language samples from 99 typically developing four- to six-year-olds; 61 spoke AAE and 38 spoke SWE.

Results—The majority of the children's relative clauses included mainstream markers. Nonmainstream markers were rare, with 3-6% involving $\emptyset$ subjects and 2% involving *what*. The children produced *who* exclusively as subjects and with human antecedents, *where* exclusively as locatives and with nonhuman antecedents, and $\emptyset$ and *what* primarily as direct objects or objects of prepositions and with nonhuman antecedents.

Conclusions—Although AAE- and SWE-speaking children produce some nonmainstream relative markers, the majority of their markers are mainstream. Their use of relative markers is also influenced by linguistic variables in ways that are consistent with a wide range of mainstream and nonmainstream English dialects. These findings show across-dialect similarity in children's relative clauses, even though characterization of relative clauses as a contrastive dialect structure remains justified.

Keywords

grammar; nonmainstream English dialects

Children's Relative Clause Markers in Two Nonmainstream Dialects of English

In this study, we examined the relative clause markers of children acquiring one of two nonmainstream dialects of English, African American English (AAE) and Southern White English (SWE). The study of relative clauses in child language is of interest to clinicians and researchers for several reasons. From a clinical perspective, relative clauses are complex forms of syntax, and as such, serve as a marker of language maturity. From a theoretical perspective, relative clauses can be seen as a window into a child's ability to complete abstract grammatical operations, such as embedding and movement.

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Unfortunately, little is known about the relative clause productions of children who speak nonmainstream dialects of English, and these include AAE and SWE, the two dialects studied here. Without this information, clinicians and researchers are unable to adequately consider the effects of these children's dialects on their assessments, treatments, and scientific endeavors. A lack of information about nonmainstream English also leaves these same professionals unable to participate in local and national debates about dialect diversity within our schools and communities. These debates often focus on the legitimacy of nonmainstream English and the effect(s) of a nonmainstream dialect on a child's academic achievement and later economic prosperity, but inherent to these debates are questions about the differences that exist or don't exist between various dialects of English (Baugh, 1999; Delpit & Dowdy, 2008; Green, 2002; Rickford, 1999; Rickford & Rickford, 2000).

The current study was designed to learn more about the dialect variation that exists in the relative clauses of AAE- and SWE-speaking children. In an earlier study by Oetting and Newkirk (2008), we examined these same children's productions of subject relatives to determine if differences could be detected in the rates at which children with and without specific language impairment produce zero relatives (henceforth referred to as $\emptyset$ as in *We paid the student $\emptyset$ made the stimuli*).¹ Consistent with the mainstream American English literature, rates of $\emptyset$ marking were higher for those with specific language impairment than for those with typical language development (average group percentages = 41 vs. 14). This confirmed our hypothesis that for at least some grammar structures, similar types of weaknesses (as indicated by higher than expected rates of $\emptyset$ marking) can be identified in children with specific language impairment across different dialects of English (for complementary relative clause data with mainstream English-speaking children, see Schuele & Nicholls, 2000; Schuele & Tolbert, 2001). Somewhat less expected, however, were the typically developing children's infrequent productions of nonmainstream relative markers. Based on the adult nonmainstream English literature, we expected high rates of nonmainstream $\emptyset$ and *what* (as in *We paid the student what made the stimuli*). Instead what we found were low rates of $\emptyset$ and no relative markers involving *what*.

These findings suggested that our initial study of subject relatives may have been too narrow to capture the full range of dialect variation that exists in typically developing AAE- and SWE-speaking children's productions of relative clauses. However, much of what is known about adults' relative clause productions across dialects has come from language samples involving different genres (i.e., private letters, legal reports, interviews, poetry, and plays) and communication modalities (i.e., speech and writing). As will be seen, much of the adult data is also fairly dated. Thus, it could be that the relative clause productions of modern day AAE- and SWE-speaking children do not show the same nonmainstream characteristics that have been documented in the adult literature. If this is the case, then it would be important to document this, especially because a number of child language researchers make a distinction between grammar structures that show variation across dialects (e.g., the copular and auxiliary forms of BE) and those that do not (e.g., the modals *can*, *should*, *will*). In a seminal paper, Seymour, Bland-Stewart and Green (1998) refer to the former set of structures as contrastive and the latter set as non-contrastive. Seymour et al. also recommend that language testing focus on the non-contrastive grammar structures to ensure that a dialect difference between children is not incorrectly diagnosed as a language impairment (for additional discussion, see Seymour & Pearson, 2004).

¹In the 2008 study and the current work, the relativized noun within a subject relative has a subject focus within the relative clause. Thus, subject relatives can be found in both the subject and object position of a main clause (e.g., subject of main clause: *The student who loved computers made the stimuli*; object main clause: *We paid the student who made the stimuli*; for additional discussion of subject relatives, see Oetting & Newkirk, 2008; Schuele & Nicholls, 2000).

The ability to carry out this recommendation (and the ability to carry out independent tests of the appropriateness of this recommendation) requires a thorough understanding of the contrastive and non-contrastive aspects of various grammar structures, and this includes children's marking of relative clauses. Currently, lists of grammar structures that are contrastive across dialects vary widely across researchers and clinical resources, and the characterization of the relative clause within these lists is inconsistent. For example, relative clauses are not included on the contrastive lists of Washington and Craig (1994) and Horton-Ikard and Ellis Weismer (2005), but they are included on the contrastive lists of Oetting and McDonald (2001) and Terry, Jackson, Evangelou, Richard, and Smith (2010). In addition, relative clauses are not considered contrastive within the Diagnostic Evaluation of Language Variation: Screening Test (Seymour, Roeper, & de Villiers, 2003a) and the *Preschool Language Scale-Fourth Edition* (PLS-4; Zimmerman, Steiner, & Pond, 2002), but they are considered contrastive within the Clinical Evaluation of Language Fundamentals-Fourth Edition (CELF-4; Semel, Wiig, & Secord, 2003).

Additional review of the adult literature also suggests that a number of linguistic variables need to be considered as part of any study of children's relative clause productions. Among others, these linguistic variables include the syntactic role of the marker within the relative clause, the humanness of the antecedent, and the adjacency of the noun phrase head to the relative clause.² Given this, there was a need to broaden the analysis of our initial study by examining all of the children's relative clauses and by considering the effects of these linguistic variables on the children's relative clause productions. As background, we briefly review the adult literature because this work was used to guide the analyses.

Adult Relative Clause Productions across Different Dialects of English

Relative clauses in English have been the subject of extensive research by historical linguists and modern day sociolinguistics. As noted by Bayley (1999), a few of these works include Montgomery's (1989) study of written texts from the fourteenth to the twentieth century, Ball's (1994; 1996) studies of written texts from the seventeenth to the twentieth century, Guy and Bayley's (1995) study of recorded conversations of the Watergate crisis, Karstadt's (1996) study of spoken Swedish American English, and Bayley's (1999) study of spoken Mexican American English (see also Moralejo-Gárate, 2000 and Newbrook, 1998; for even earlier examples of relative clause variability prior to the fifteenth century, see descriptions of Old English and Middle English by Traugott, 1992 and Mossé, 1952). Collectively, these studies show adults' productions of relative clauses and relative clause markers to be highly variable across different dialects of English (i.e., synchronic variability) and highly susceptible to change across time (i.e., diachronic variability).

Comparisons of American English and British English provide a contemporary example of relative clause variation (for additional information about these dialects, see Cheshire, 1982; Hesketh, 2006; Quirk, Greenbaum, Leech, & Svartik, 1985; Rohdenburg, & Schlüter, 2009; Tagliamonte, 2002; Tagliamonte, Smith, & Lawrence, 2005; Tottie, 1995; 1997a; 1997b; 2009; Tottie & Lehmann, 2002). To illustrate, we present some of the findings from studies by Tottie and colleagues. Their spoken samples come from American and British speech corpora (e.g., the Longman Spoken American Corpus and the British National Corpus) and their written samples come from American and British publications by academics and newspapers (e.g., the *Los Angeles Times* and the *London Times*).

²The three linguistic variables highlighted here reflect a subset of those studied in the adult literature. These three were selected because they appeared most appropriate for our spoken (as opposed to written) child samples. In addition to adult studies cited within the text, others that have examined the effects of various linguistic variables on relative clause marking include Aarts (1993), Cofer (1975), Elness (1984), Fox and Thompson (1990), McDavid (1964), and Quirk (1957).

Results from their studies show that American English and British English speakers share the same inventory of relative clause markers, and across dialects, their use of these markers is influenced by similar types of linguistic variables. Nevertheless, these two dialects produce their relative clause markers in different distributions. American English speakers often produce the relative marker *that* in subject relatives whereas the markers *that*, *who*, and *which* are more evenly distributed within subject relatives in British English. Also, although speakers and writers of both dialects rarely (if ever) produce $\emptyset$ subject relatives, $\emptyset$ non-subject relatives are produced at lower rates by American English speakers and writers than by British English speakers and writers (American spoken = 51%; American written = 65%; British spoken = 77%; British written = 70%; Tottie, 1997a, p. 161). However, in non-subject relative clauses where the antecedent is or includes the word *same* (as in *John always bought the same car that Mary did*), $\emptyset$ is produced at higher rates by American English speakers and writers than by British English speakers and writers (American spoken = 51%; American written = 55%; British spoken = 11%; British written = 22%; Tottie, 2009; pp. 351-352). Finally, in both dialects, the humanness of the antecedent leads to high rates of *who* subject relatives even though the magnitude of the effect varies by dialect and communication modality (American + human spoken = 64%; American + human written = 95%; British + human spoken = 91%; British + human written = 95%). As noted earlier, the American 64% vs. British 91% difference in spoken *who* is tied to differences in these dialects' rates of spoken *that* (American spoken *that* = 33% vs. British spoken *that* = 7%; Tottie, 1997a, p. 158).

Relative clause variation is also evident when one compares nonmainstream American dialects of English to those that are mainstream, and the nature of the variation is similar to that of American English and British English. (Adamson, 1992; Bayley, 1999; Cukor-Avila, 2001; Fasold, 1981; Green, 2002; Kautzsch, 2004; Martin & Wolfram, 1998; Mufwene, 1998; Smith, 1969; Steffensen, 1974; Rickford, 1999; Tottie & Harvie, 2000; Tottie & Rey, 1997; Wolfram & Schilling-Estes, 1998). This is because in mainstream and nonmainstream dialects of American English, relative clause markers are influenced by similar types of linguistic variables even though these dialects distribute their relative clause markers differently. To illustrate, we created Table 1 using studies by Guy and Bayley (1995) and Tottie and Rey (1997).

Data for Guy and Bayley (1995) included 827 relative clauses from spoken and written language. The spoken data came from educated, white speakers of mainstream American English (i.e., *The White House Transcripts*; Nixon, 1974), and the written data came from published articles by American academics in the 1970-1980s. Data for Tottie and Rey (1997) included 164 relative clauses from spoken language. These data came from 10 African Americans who contributed to Bailey, Maynor, and Cukor-Avila's (1991) Ex-Slave Narratives project. As evident by the description of these studies, the samples vary in size, communication modality, age and education of the participants, and date of data collection. Nevertheless, methods of analysis are similar across the studies and this allows these studies to be considered together. The general findings from these works are also relatively consistent with other descriptive accounts of mainstream and nonmainstream varieties of American English. Thus, we present these studies as illustrations of the two dialects of interest, while also acknowledging limits to the extent to which they can be compared to each other and to modern day versions of these dialects.

Using data in Table 1, consider first the ways in which these two dialects differ from each other. Nonmainstream American English shows higher rates of $\emptyset$ and lower rates of *wh*-markers than mainstream American English. These dialect differences exist regardless of the syntactic variable examined. Also, for mainstream American English, Guy and Bailey identified (and combined within their counts) various *wh*-markers (*who*, *which*, etc.) with

no mention of *what*. For nonmainstream American English, Tottie and Rey's *wh-* relatives consisted of *what* markers only. In fact, these authors explicitly state that no other types of *wh-* markers were found in the samples.³ Findings such as these show speakers of mainstream and nonmainstream dialects of American English differing in the distribution at which they produce various types of relative markers. As such, we refer to these differences as reflecting dialect-specific aspects of English relative clauses.

Using data in Table 1, consider next the ways in which the two dialects are similar to each other. As denoted by superscript *a*, both dialects show higher percentages of $\emptyset$ with non-subject relatives than with subject relatives. As denoted by superscript *b*, both dialects also vary their rates of *wh-* and *that* as a function of the humanness of the antecedent. The direction of the influence, however, differs between the two dialects. A nonhuman antecedent leads to higher rates of *that* in mainstream American English, whereas this same condition leads to higher rates of $\emptyset$ in nonmainstream American English. Finally and as denoted by superscript *c*, both dialects show increased rates of *wh-* markers and *that* when the relative clause is non-adjacent as opposed to adjacent to the noun phrase head. These findings show the relative clause markers of both dialects to be sensitive to the same types of linguistic variables. As such, we refer to these similarities across dialects as reflecting dialect-universal aspects of English relative clauses.

In summary, English relative clauses and relative clause markers have always been and continue to be highly susceptible to linguistic variation and change. In modern times, this variation has been documented in studies of adults who speak different dialects of English. Within these adult studies, the nature of the variation involves dialect-specific and dialect-universal aspects of English. Similar comparative work has not been completed with children. Thus, it is unknown whether the adult literature is applicable to children.

Using the adult literature as a guide and taking advantage of an archival dataset of AAE- and SWE-speaking child language samples, we asked the following research questions: (1) Do AAE- and SWE-speaking children differ from each other and from the adult nonmainstream English literature in their productions of relative clause markers? And (2) Are AAE- and SWE-speaking children's productions of relative clause markers influenced by the syntactic role of the relative, the humanness of the antecedent, and the adjacency of the noun phrase head to the relative clause? The first question addressed dialect-specific aspects of relative clause marking and the second addressed dialect-universal aspects.

Methods

Data

The data came from 99 language samples which were drawn from an archival dataset of 140 samples previously studied by Oetting and Newkirk (2008; for other studies that have examined subsets of these samples and others in the archive, see Garrity & Oetting, 2010; Oetting & Garrity, 2006; Oetting & McDonald, 2001; 2002; Oetting & Pruitt, 2005; Pruitt & Oetting, 2009). All of the children who provided the language samples lived in rural areas of southeastern Louisiana, were developing language typically, and ranged in age from four to six years (mean = 63.91 months; SD = 11.80). Sixty-one of the children were classified as AAE speakers, and 38 were classified as SWE speakers. The children's dialect status was determined using Oetting and McDonald's (2002) listener judgment task. This task required three raters to independently listen to and rate short excerpts of each child's language sample using a 7-point Likert scale, and then these scores were averaged. A score of 1 on the

³ *What* as a relative marker has also been documented in nonmainstream dialects of British English in areas that include, but are not limited to Lowland Scotland, Northwest England, and Northern Ireland (Ball, 1996; Tagliamonte, Smith, & Lawrence, 2005).

scale indicated that the rater perceived no use of nonmainstream features, a score of 3 indicated little use (< 25% of utterances), and a score of 7 indicated heavy use (> 40% of utterances). All of the children earned average ratings above 1.0, and as expected, the AAE group demonstrated significantly higher ratings of nonmainstream dialect than the SWE group; AAE = 4.86 (SD = 1.32), SWE = 4.09 (SD = .95); $t_{(94.69)} = 3.36$, $p < .05$. Using the full language samples, we also calculated the children's nonmainstream English dialect densities by dividing their number of complete and intelligible utterances with a nonmainstream grammar structure by the number of complete and intelligible utterances they produced. For each child, the coded nonmainstream grammar structures came from Oetting and McDonald (2001). Again, all of the children showed evidence of nonmainstream English grammar structures within their samples, and nonmainstream dialect densities of the AAE speakers were higher than those of the SWE speakers; AAE = 27% (SD = 11), SWE = 10% (SD = 5); $t_{(87.36)} = 10.41$, $p < .001$.

None of the children presented a history of receiving services from a speech-language pathologist, and their language status was confirmed through parent/teacher report and administration of a receptive vocabulary measure which was either the Peabody Picture Vocabulary Test-Revised or Peabody Picture Vocabulary Test-III (PPVT; Dunn & Dunn, 1981; 1997). For descriptive purposes, we also administered three subtests that make up the syntax quotient of either the Test of Language Development - Primary: 2nd Edition or the Test of Language Development - Primary: 3rd Edition (TOLD; Newcomer & Hammill, 1988, 1997). All of the children scored above -1 SD of the normative mean on the PPVT, and all but four scored above -1 SD on the syntax quotient of the TOLD. The four children who scored below -1 SD on the TOLD were retained in the original studies and included within the analyses here given potential dialect biases that may exist within this tool (Hammer, Pennock-Roman, Rzasa, & Tomblin, 2002). The AAE group's average scores on the PPVT and TOLD were 99.49 (SD = 10.42) and 99.49 (SD = 9.82). The SWE group's average scores on the PPVT and TOLD were 103.55 (SD = 9.51) and 102.58 (SD = 12.40). Independent *t*-tests indicated that differences between the children's tests scores as a function of their dialect group were not statistically significant ($p > .05$).

The children's language samples came from 30-minute, examiner-child play sessions that were collected at each child's school. The samples were conversational in nature, and toys and pictures were used to facilitate the conversations. The toys included a gas station, cars, people, picnic/park sets, Legos, baby doll, and baby care items, and the pictures were from Arwood (1985).

The samples were orthographically transcribed and coded using *Systematic Analysis of Language Transcripts (SALT)* software, following the guidelines of Miller and Iglesias (2006). Point-by-point reliability measures of the transcription for words and utterance boundaries within the samples were completed on at least 10% of the samples as part of the original studies; in all cases, agreement between transcribers was above 90%. The total number of complete and intelligible utterances within the samples was 19,204 (AAE group = 10,715; SWE = 8,489), and the average number per child was 193.98 (SD = 61.22; range = 63 to 321, with 91% of the samples ranging from 100 to 300 utterances).

Identification and Coding of Relative Clauses

A multi-step process was used to locate and code the children's relative clauses within the samples. First, using the *Word and Code List* option in SALT, all complete and intelligible utterances containing *that*, *who*, *which*, *whose*, *where*, *what* and $\emptyset$ (as indicated by either **that*, **who*, **which*, **whose*, or **where*) were extracted from the samples to identify those that contained a relative clause. Then as an additional check, the entire corpus of complete and intelligible utterances was combed utterance by utterance to identify other relative

clauses that may have been missed by this method. Following this, each relative construction was coded for the three linguistic variables of interest. These included the syntactical role of the relative marker in the relative clause, the humanness of the antecedent, and the adjacency of the relative marker to the noun phrase head. Operational definitions of these three variables were as follows. *Syntactic Role of the Relative within the Clause*. This variable refers to the syntactic role of the relative clause marker within the relative clause. Although some of the adult literature discusses relative markers as serving subject vs. non-subject functions, our coding was facilitated by Schuele (2009) and this led us to further divide the non-subjects into three additional categories which were direct object, object of a preposition, and adverbial. As it turned out, subject and direct object relative markers were the most commonly produced by the children, and all of the adverbials served as locatives. Within the results and discussion, we refer to the syntactic roles of the markers using the four categories listed below and the two broader categories of subject and non-subject.

Subject: I have a little baby swimming pool at my house that has a slide.

Direct Object: *Put it in the box that I have.*

Object of a preposition: It's some kind of building Ø my daddy used to work in but now he works at the stockyard.

Locatives: *They got to the place where the hyenas stay.*

Humanness of the Antecedent—This variable refers to the humanness of the antecedent to which the relative marker refers.

+Human: *I play with the girl who lives next door.*

–Human: *It's a lawnmower that you gotta push.*

Adjacency of the antecedent—This variable refers to the adjacency of the relative clause to the antecedent it modifies.

+Adjacent: He gave me some of those books that I wanted for the library.

–Adjacent: *I have some toys at home that I can play with.*

Results

Across the two dialect groups, there were 175 analyzable relative clauses in the samples, and these were produced by 65 (66%) of the children who contributed data to the study. Children who produced the relative clauses were on average seven months older than those who did not (average age of those who did = 5;6 years vs. average age of those who did not = 4;11 years), and they also produced more complete and intelligible utterances within their samples (207 vs. 170), higher MLUs (5.86 vs. 5.15), and higher TOLD scores (102 vs. 97). Nevertheless, the standard deviations accompanying these groups' means were larger than the differences between the groups (i.e., SD for age = 11 months for both groups, SD for sample length = 57 and 59 utterances, SD for MLU = 1.02 and 1.06 morphemes, and SD for TOLD = 8 and 11 points). Moreover, correlations between these variables and the children's number of relative clauses were low in magnitude (r ranged from a high of .30 and .36 for the children's MLUs and syntax quotient scores to a low of .23 and .25 for the children's ages and their sample sizes). For readers interested in additional information about the effect (or lack of an effect) of age as it relates to children's subject relative clause productions, see Oetting and Newkirk (2008).

Perhaps more importantly, of the 175 relative clauses, 82 were produced by the AAE group and 93 were produced by the SWE group. When these frequencies were divided by the

children's number of utterances analyzed, rate of use for both dialect groups was less than one relative clause per every 100 utterances analyzed (and less than .002 per 1,000 words analyzed). This low rate of relative clauses found in the children's samples is consistent with other child language data (Schuele & Nicholls, 2000) and the adult literature, although adults produce relative clauses more often than children of the age studied here. For example, Tottie and Harvie (2000) examined the frequency of relative clauses from three different corpora of speech and concluded that adults produce relative clauses one to three times per 1,000 words.

Table II provides a breakdown of the different types of relative markers for each dialect group. As can be seen, both groups produced *that* more often than the other relative markers, followed by lower frequencies of *wh-* markers and $\emptyset$. For the AAE group, their *wh-* markers included *who*, *what* and *where*. For the SWE group, their *wh-* markers included *who*, *what* and *where* and one *which*, in the utterance, *I got a brother which never come down here*. In mainstream American English, this clause would typically include *that* or *who*. The use of *which* in this type of clause is not one we have found documented in the nonmainstream English adult literature. Given this and given that only one of these was found in the samples, we speculate that the child's production of *which* in this case was idiosyncratic and potentially reflective of a performance error.

Within Table II, we have shaded the children's productions of $\emptyset$ and *what* because both of these options have been identified as nonmainstream in the adult literature. When interpreting these data, however, it is important to remember that counts of $\emptyset$ within this table include all of those produced, and it is only when $\emptyset$ serves as a subject within a relative clause that it is considered nonmainstream. Mainstream American English (and to our knowledge all modern day dialects of English) allow $\emptyset$ in non-subject relatives. Thus, the actual rate of nonmainstream $\emptyset$ within our samples cannot be determined until we examine the children's use of $\emptyset$ as a function of its syntactic role. For now, the important point is that $\emptyset$ and *what* were found within the samples of both the AAE and SWE groups, and the presence of these attests to the nonmainstream nature of relative clauses within these two dialects. In particular, the four occurrences of *what* are clearly nonmainstream, and they were produced in the following utterances: *And give some stuff what he have back to him* (AAE), *I have a Barbie doll car what you ride in* (AAE), *I ain't got a sister what I can fight much* (AAE), and *And Santa Claus gets the toys for me what I want* (SWE).

Although $\emptyset$ and *what* were found within the samples, it is also important to point out that the children produced these markers infrequently ($\emptyset$ = 15%; *what* = 2%). These rates of use are much lower than what has been reported within the nonmainstream adult English literature. Recall that Tottie and Rey's (1997) adult speakers of early AAE produced 19-79% of their relative markers with $\emptyset$ depending upon the linguistic variable examined, and they produced all of their *wh-* relative clauses with *what*.

Syntactic Role of the Relative Marker within the Clause

Table III lists the distribution of each of the relative markers by their syntactic role in the relative clause. Within this table, we have again used shading to facilitate visual inspection of the data. The shading is identical for the AAE and SWE groups because the syntactic role of the relative marker influenced the two dialect groups in the same way. Specifically, both dialect groups produced *that* for all syntactic roles except locative, but their productions of *who* was restricted to subject roles. In addition, both groups restricted their productions of *what* to direct object roles and their productions of *where* to locatives. Examples of utterances including *where* were: *My momma wash hers by that little store where the laundromat at* (AAE) and *He went to a hospital where my mawmaw went* (SWE).

Finally, both dialect groups produced $\emptyset$ for a range of syntactic roles, but the majority served a non-subject role (i.e., as a direct object or object of a preposition). Below we list examples of utterances with $\emptyset$ in subject and non-subject roles.

Subject—

Got a sign $\emptyset$ says no fishing. (AAE)

And then came a little boy $\emptyset$ had a net in his hand. (AAE)

Yes I've been on the stair $\emptyset$ takes us up. (SWE)

Maybe there's a crawfish in there $\emptyset$ pinched him on the tail. (SWE)

Non-subject—

I have lots of prizes $\emptyset$ we can win. (AAE)

This the bottle $\emptyset$ you used to have? (AAE)

That's the movie $\emptyset$ I want. (SWE)

It's some kind of building $\emptyset$ my daddy used to work in but now he works at the stockyard. (SWE)

Recall that in mainstream American English, $\emptyset$ is felicitous in non-subject roles only. Given this, we calculated the children's rates of nonmainstream $\emptyset$ based on the rate at which they produced $\emptyset$ as a subject. As shown by Table III, the children produced only six of these out of 107 subject relatives and 175 total relatives. This finding indicates that the children's use of nonmainstream $\emptyset$ is infrequent (i.e., proportion calculated as 6% if based on 107 subject relatives and 3% if based on 175 relative clauses) and less frequent than their 12% use of $\emptyset$ as a non-subject relative (i.e., 21 mainstream $\emptyset$ / 175 total relatives $\times$ 100 = 12%).

Humanness of the Antecedent

Table IV lists the distribution of the children's relative clause markers as a function of the humanness of the antecedent. As can be seen, the children also varied their use of the markers as a function of this linguistic variable. Specifically, the children restricted their productions of *who* to human antecedents and their productions of *where* to nonhuman antecedents. The children also produced $\emptyset$ and *what* with both types of antecedents, but their rates of use were highest when the antecedent was nonhuman.

Adjacency of the Noun Phrase Head

All but three (98%) of the children's relative clauses were produced with adjacent heads. Given this, we were unable to evaluate the effect of adjacency on the children's relative clause markers. The children's utterances with non-adjacent relative clauses were *Maybe there's a crawfish in there $\emptyset$ pinched him on the tail* (SWE), *We went to that place by him in the grass where that store is next to him* (SWE), and *She has a moomoo cowsuit for Halloween that she loves* (SWE). As evident by these utterances, the children's relative clauses with non-adjacent heads included three different types of markers ($\emptyset$, *where*, and *that*). Additional data are needed to determine if children of the age range studied here always produce a range of markers or a more restricted set (and less use of $\emptyset$) when they produce non-adjacent relative clauses.

Discussion

We conducted the current study to learn more about the relative clause variation that exists in children's use of two nonmainstream dialects of English, AAE and SWE. We were

interested in relative clauses for three reasons: 1) we found minimal evidence of dialect variation in an earlier study of these same children's subject relatives, 2) child language researchers and clinical resources within the field of speech-language pathology are inconsistent in their characterization of relative clauses as contrastive across dialects, and 3) within the adult sociolinguistic literature, relative clauses have been repeatedly shown to present both dialect-specific and dialect-universal features but similar studies have not been completed with children.

Results showed that the majority of the children's relative clauses included mainstream markers. Nonmainstream markers were rare, with 3-6% involving nonmainstream $\emptyset$ as a subject and 2% involving nonmainstream *what*. These rates of nonmainstream markers are surprisingly low when one considers the adult literature. Recall that many of the relative clauses produced by Tottie and Rey's (1997) speakers of early AAE involved $\emptyset$ and all of their *wh*-relatives involved *what*. Moreover, a number of scholars other than Tottie and Rey continue to list elevated rates of $\emptyset$ and the use of *what* as characteristic of nonmainstream English (e.g., Bayley, 1999; Cukor-Avila, 2001; Green, 2002; Martin & Wolfram, 1998). Nevertheless, the presence of these nonmainstream markers within our children's samples supports the characterization of relative clauses as contrastive across various dialects of English. This finding also confirms the presence of dialect-specific aspects of relative clauses within modern day child AAE and SWE.

In addition to this finding, the results showed that the children's use of relative clause markers was influenced by two linguistic variables. These variables were the syntactic role of the marker within the relative clause and the humanness of the antecedent. Specifically, the children produced *who* exclusively with subject relatives and human antecedents, *where* exclusively with locatives and nonhuman antecedents, and $\emptyset$ and *what* primarily with direct objects and objects of prepositions and with nonhuman antecedents. These findings are consistent with what has been documented for adults who speak a range of mainstream and nonmainstream dialects of English, and they confirm the presence of dialect-universal aspects of relative clauses within modern day child AAE and SWE.

Implications for Child Language Research and Clinical Practice

Findings from the current study can be used to justify the characterization of relative clauses as contrastive across dialects, but they also indicate that this characterization should be accompanied by a statement about the low rates at which children produce nonmainstream relative markers and a statement about the dialect-universal aspects of children's relative clauses. In the space remaining, we discuss two important implications of these findings.

Implication 1: Expand discussions of contrastive dialect structures to include information about rates of use and dialect-universal aspects of use—

As mentioned earlier, researchers in child language acquisition and impairment and authors of clinical resource materials often provide readers a list of contrastive grammar structures when they describe various nonmainstream dialects of English. The intent of these lists is laudable as they show a recognition and appreciation for some of the ways in which various dialects of English differ across child speakers. In fact, one could argue that these lists have played an important and necessary role in the growth and development of academic and professional fields of study. Nevertheless and as demonstrated by the current set of findings, these lists do not include important information about how and when child speakers of various dialects produce the structures. These lists also do not offer readers information about the ways in which a child's use of a contrastive structure is similar to that of children who speak other dialects of English. Given this, it seems important to modify these lists by

adding information about rates of use and dialect-universal aspects of use whenever children's dialects are being discussed.

Literature in the field of sociolinguistics offers a potential format for modifying these contrastive grammar lists. As an example, Wolfram (2004) categorizes contrastive grammar structures as stable, new and intensifying, and receding, and this classification is based on change in use within speakers across (historical) time. According to Wolfram, stable structures present a consistent amount of dialect variation across time, new and intensifying structures show an increase in their frequency of use across time, and receding structures show a decrease in their frequency of use across time. If adopted, this type of categorization format should help readers consider not only children's rates of use at one point in time, but also their rates of use relative to other generations of speakers. As such, this categorization format would recognize the evolving nature of dialects and facilitate discussions about diachronic variation and change as part of our efforts to understand children's dialect differences. Given this categorization format and the findings of the current study, children's use of nonmainstream relative markers may be best described as receding; perhaps not surprisingly, this is how they are described by Wolfram (2004).

Wolfram's (2004) format for describing various types of contrastive structures will be incomplete without additional content about the dialect-universal aspects of children's grammars; however, this type of information should be fairly easy to add once studies have been conducted for this purpose. Hopefully, findings from the current study can be used to motivate others to conduct this type of research. Whether the focus of this future research is on one contrastive structure as was done here or on multiple contrastive structures, more than one dialect will need to be examined, but this is exactly the type of comparative work that is required to fully understand the dialect differences that exist between and among different groups of children. Various nonmainstream dialects of English as well as those that are mainstream should be considered viable candidates for this research.

Implication 2: Use child data to inform future studies and clinical materials—

The current findings can also be used to underscore the importance of using child dialect studies when designing future studies and when creating new clinical materials for the field of speech-language pathology. In 1983, the American Speech-Language-Hearing Association published a position statement on social dialects. At that time, few dialect studies had been conducted with children. Thus, the majority of the studies cited within the position statement focused on adults. Although the number of child dialect studies continues to be low, more of these studies are appearing in the literature every year. These studies are important because they reflect the modern day dialects of the children speech-language pathologists seek to serve. Given that they are based on children, these studies also tend to quantify their findings in ways that are sensitive to developmental changes that occur in childhood. This quantification, whether it involves frequency counts, percentages of use, or proportions of use, is central to the development of dialect-appropriate and age-appropriate expectations of use when working with an individual child or a group of children.

Regarding the current study, researchers and clinicians should be able to use the findings to make reasonable expectations about the relative clause productions of typically developing AAE- and SWE-speaking children. For example, based on the current set of findings, one should expect relative clauses to be infrequent within AAE- and SWE-speaking children's spontaneous language, but when they are produced, the majority of them should include a mainstream relative clause marker (i.e., *that*, *wh-*, $\emptyset$ as a non-subject). On the rare occasion that a nonmainstream relative clause marker is produced, one should expect this marker to surface as either $\emptyset$ as a subject or *what*. AAE- and SWE-speaking children's relative clause markers should also be expected to vary as a function of the syntactic role of the marker and

the humanness of the antecedent in ways that are consistent with speakers of other dialects of English, and presumably this includes children who are learning mainstream American English (although a detailed study of children learning mainstream American English is needed to confirm this assumption). For AAE and SWE-speaking children whose relative clauses lack these properties, additional language testing may be warranted to rule in or rule out a language impairment.

Acknowledgments

During the completion of this study, the first author was funded by RO1DC009811 and the second author was funded by a Huel Perkins/SREB doctoral fellowship and a LSU dissertation fellowship. The elicitation, transcription and coding of the samples within the original studies was made possible by various funding sources including an NIH RO3 grant awarded to the first author and a number of university-sponsored departmental assistantships. Appreciation is extended to Lesli Cleveland, April Garrity, Christy Moland, Lekeitha Morris, Sonja Pruitt-Lord, and other LSU graduate students who helped to collect, transcribe, and code the language samples and Zainab Maqsood for assistance with the references. Special thanks are also extended to the children and families who provided the data for the study.

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Table I

Proportion of each relative clause marker as a function of three linguistic variables.

Mainstream American English Guy & Bayley (1995)	<i>Wh</i> - n = 288	<i>That</i> n = 362	$\emptyset$ n = 177
subject	47%	53%	0%
non-subject	25%	36%	39% ^a
+human	65% ^b	22%	13%
–human	28%	49% ^b	23%
+adjacency	33%	43%	24%
–adjacency	47% ^c	49% ^c	4%
African American English Tottie & Rey (1997) ^d	<i>What</i> n = 10	<i>That</i> n = 38	$\emptyset$ n = 68
subject	11%	49%	40%
non-subject	8%	16%	76% ^a
+human	10% ^b	44%	47%
–human	7%	14%	79% ^b
+adjacency	6%	29%	65%
–adjacency	25% ^c	56% ^c	19%

^aDenotes comparisons of interest for the effect of syntactic function on relative clause marking.

^bDenotes comparisons of interest for the effect of humanness on relative clause marking.

^cDenotes comparisons of interest for the effect of adjacency on relative clause marking.

^d116 of the authors' 164 relative clauses were examined within their analyses of the linguistic variables.

Table II

Number and proportion of relative clause markers.

	AAE	SWE	Total
<i>That</i>	51 (62%)	63 (68%)	114 (65%)
<i>Who</i>	12 (15%)	4 (4%)	16 (9%)
<i>Which</i>	-- (0%)	1 (1%)	1 (1%)
<i>Where</i>	7 (8%)	6 (7%)	13 (8%)
$\emptyset$	9 (11%)	18 (19%)	27 (15%)
<i>What</i>	3 (4%)	1 (1%)	4 (2%)
Total	82	93	175

Table III

Number and proportion of relative clause markers by syntactic function.

	<i>That</i>	<i>Who</i>	<i>Which</i>	<i>What</i>	<i>Where</i>	<i>Ø</i>	Total
AAE							
Subject	37 (70%)	12 (23%)	-- (0%)	-- (0%)	1 (2%)	3 (5%)	53
Direct Object	11 (69%)	-- (0%)	-- (0%)	2 (12%)	-- (0%)	3 (19%)	16
Object of a Preposition	3 (43%)	-- (0%)	-- (0%)	1 (14%)	-- (0%)	3 (43%)	7
Locative	-- (0%)	-- (0%)	-- (0%)	-- (0%)	6 (100%)	-- (0%)	6
SWE							
Subject	46 (85%)	4 (7%)	1 (2%)	-- (0%)	-- (0%)	3 (6%)	54
Direct Object	11 (50%)	-- (0%)	-- (0%)	1 (5%)	-- (0%)	10 (45%)	22
Object of a Preposition	6 (55%)	-- (0%)	-- (0%)	-- (0%)	-- (0%)	5 (45%)	11
Locative	-- (0%)	-- (0%)	-- (0%)	-- (0%)	6 (100%)	-- (0%)	6
Total	114	16	1	4	13	27	175

Table IV

Number and proportion of relative clause markers by humanness of antecedent.

	<i>That</i>	<i>Who</i>	<i>Which</i>	$\emptyset$	<i>Where</i>	<i>What</i>	Total
AAE							
+human	17 (55)	12 (39)	--	1 (3)	--	1 (3)	31
-human	34 (67)	--	--	8 (16)	7 (14)	2 (1)	51
SWE							
+human	15 (71)	4 (19)	1 (5)	1 (5)	--	--	21
-human	48 (67)	--	--	17 (24)	6 (8)	1 (1)	72
Total	114	16	1	27	13	4	175