2024. *Proc Ling Soc Amer* 9(1). 5724. https://doi.org/10.3765/plsa.v9i1.5724.

Comprehension of complex syntactic structures in Southern varieties of American English and mainstream American English

Christiana Christodoulou*

Abstract. Research on the acquisition of complex syntactic structures in Southern English (SE) and Southern African-American English (SAAE) is near absent, though an extensive body of literature is available on phenomena such as those of auxiliary and copula *BE*, and 3SG *-(e)s*. de Villiers et al. (2011) supported that characteristics found in AAE help avoid commonly observed developmental errors in the comprehension of *wh*-questions. Prior work on mainstream American English (MAE) has shown that *where* and *what* are acquired before *who*, *how*, *why*, *which*, and *when*. Research on passive voice revealed that children comprehend *action verb passives* earlier than *non-action verb passives*. We investigate the comprehension of *wh*-questions and passive voice in 222 SAAE-, SE- and MAE-speaking children, aged 2-13 and examine whether there were certain structural environments where we examined the comprehension of *wh*-questions or passive voice that were more challenging for the three groups. The results show that SE and SAAE have comparable development with *wh*-questions and passive voice, with minor exceptions. They confirm findings from previous studies on both the order of acquisition of *wh*-questions and the earlier acquisition of action passives, as well as the SAAE-speaking participants' highly accurate performance with *wh*-questions, especially structures which include indirect/medial questions.

Keywords. Southern African American English; Southern English; language acquisition; passive voice; *wh*-questions; linguistic varieties of American English; language development across age

1. Introduction. Southern English (SE), Southern African-American English (SAAE) and mainstream American English (MAE) are three varieties of English that coexist in most communities in the southern United States. While a growing body of literature on African American (AAE) and SE has shown that what is misperceived as lack of grammatical knowledge, is in fact a characteristic of these linguistic varieties (Green 1995; Oetting 2015), these are still socially stigmatized varieties. A clear example showing that this is still the case comes from Mills et al. (2021), where adults rated children's language in narratives as more acceptable when the language use was closer to MAE than when it varied (specifically with AA children), especially with fictional, as opposed to personal, narratives.

Earlier work on the developmental patterns in child AAE suggested stark contrasts but also many similarities across AAE and MAE (de Villiers et al. 2011; Green 2011; Oetting 2015). Some of the main differences noted in the literature across AAE and MAE are: (a) the frequent omission but also differing uses of auxiliary and copula ***BE*** (Green 2011; Green 2002; Roy, Oetting &

* This research was fully funded by People Programme (Marie Skłodowska Curie Actions) of the European Union's Horizon 2020 Programme H2020-MSCA-IF-2016 under REA grant agreement n°[749360]. Thanks to all the school administrations for all their help and patience throughout the period of data collection. I am grateful to all our participants and their families for making this research possible, as well as the 30 research assistants who worked tirelessly to collect and help organise/analyse the data presented in this work. Author: Christiana Christodoulou, University of Cambridge, University of Mississippi (cchris26@olemiss.edu).

Moland 2013), the omission of the 3rd person singular agreement morpheme ***-s/-es*** (Amaral & Roeper 2014; Green 2016; Newkirk-Turner & Green 2016 2021; Schneider 1989, and (c) a variety of phonological differences, including differences with the production of some consonants in specific phonological environments, e.g. the change of stops or fricatives from dental to labio-dental, as in [briːv] instead of [briːð], as well as some vowels e.g. [mãn] or [mæ̃n]instead of [mæn], or differences in stress [ˈpoˌlis] instead of [ˌpoˈlis] (Edwards 2008; Tillery & Bailey 2008; Wyatt 1995). The majority of the existing research on AAE falls under three main categories: (a) the overall language development using a variety of diagnostics, (b) the omission of 3SG *-s* morpheme, (Amaral & Roeper 2014; Green 2016; Newkirk-Turner & Green 2016, 2021; Schneider 1989), and (c) the most widely studied area, the development of *BE* in all its possible uses, as a copula or an auxiliary (Green 2011; Green 2002; Oetting & Moland 2013; Roy, Oetting & Moland 2013). A small body of work on other linguistic phenomena, such those of negations (Coles-White 2004), *wh*-questions (Christodoulou, Tsimpli & Cayli 2023; de Villiers, de Villiers & Roeper 2011), *wh*-questions and passives (Christodoulou, Tsimpli & Alquayb 2023), as well as phonetic and phonological development is available. Our current work focuses on the acquisition of two structurally complex syntactic phenomena, the comprehension of *wh*-questions and passive voice across SE-, SAAE- and MAE-speaking children who are born and brought up in the same communities in Northern Mississippi.

A study on the overall language development of AAE- and MAE-speaking children, aged 2;6 to 3;6) reported that while the performance of 3;6-year-old MAE-speaking children presented lower rates of non-standard speech than that of the younger MAE-speaking children, 3;6-year-old AAE speakers' performance was almost equivalent to that of the 2;6-year-old AAE-speakers. Additionally, the older AAE-speaking children presented an increase in the use of non-MAE forms, but the 3;6-year-old MAE speakers presented a decrease in the production of common developmental errors found during the early stages of language acquisition (Horton–Ikard & Weismer 2005). Research studies, presenting comparisons across MAE and AAE or AAE and SE, discussed a number of similarities and differences across the productions of their tested populations. Oetting (2015) reported similarities between AAE- and SE-speaking children on a morphological and syntactic level, e.g. the use of parallel relative clause markers (∅and *what*), and the omission of inflectional marking, the *3SG -s* agreement morpheme, and absence of *BE* in environments where it is used as a copula or an auxiliary. Differences mainly concerned: (a) the rates at which AAE- and SE-speaking children produce the grammatical forms that deviate from MAE (*BE* and 3SG-*s*), (b) the manner in which these grammatical forms are used, and (c) the roles those play selecting some grammar forms over others.

Studies examining the overall performance of AAE- and SE-speaking children revealed difficulties with language acquisition and increased rates or risk for a language disorder. Specifically, the results from Moland & Oetting (2021) revealed a 'fail rate' of 48% for the Washington and Craig Language Screener and a 52% high risk for a language disorder for the language disorder portion of the Diagnostic Evaluation for Language Variation-Screening Test. Similarly, a parallel study on the linguistic abilities of SE- and SAAE- speaking children reported unexpected high rates of risk for a language disorder: 37.6% of the SE-speaking children, and 60.5% of the SAAE-speaking children presented medium-high or highest risk for a language disorder (Christodoulou & Tsimpli (C&T, hereafter) 2021, under review). However, further analysis revealed no correlation across the two parts of the diagnostic, and more explicitly the variety of English and risk for language disorder. We concluded that this unexpected result seems to be due to lack of early education, which may, in turn, cause the test to "over-screen" and falsely flag some of the

children as being at risk for a language disorder. Results reported by studies using a more detailed diagnostic, examining the language development on the SE, SAAE and MAE varieties of American English across syntax, semantics, pragmatics and phonology, showed that not only do the three groups perform in parallel across the three populations, but they also presented a highly accurate performance across these 4 domains (C&T 2023a, 2023b), especially with syntax and phonology.

A study on the comprehension of *wh*-questions in AAE-speaking children revealed higher accuracy with the comprehension multi-clause questions, specifically those including indirect/ medial questions with inversion on the lower subject-auxiliary, as sentences similar to *John asked could he do it?*, instead of the expected MAE form *John asked if he could do it* because of the AAE's characteristic marking of indirect questions via inversion in the lower clause. (de Villiers, de Villiers & Roeper 2011). They argue that this helps AAE-speaking children avoid typical errors in the comprehension of *wh*-questions, observed with MAE-speaking children. Previous work on the production and comprehension of *wh*-questions in SAAE- and SE-speaking children revealed a parallel performance across the two groups, with marginally higher accuracy scores by the SAAE group (Christodoulou, Tsimpli & Cayli 2023; Christodoulou, Tsimpli & Alquayb 2023). Both groups were far better with comprehension over production (Comprehension: SAAE= 85.5, SE=82.9; Production: SAAE= 60.1, SE=58.9).

Studies on the order of acquisition of *wh*-questions in MAE-speaking children reported that *wh*-words are mostly acquired in the following order: *where* and *what* > *who*, *how*, *why*, *which*, and *when* (Bloom et al. 1982; Kuczay & Brannick 1979; Tyack & Ingram 1977). Tyack & Ingram (1977) studied the acquisition of Subject vs. Object *wh*-questions and found an advantage with the acquisition of subject *wh*-questions and questions which included an intransitive vs. a transitive verb. Specifically, they showed that children aged 3;0 to 5;6 presented 80% accuracy in providing an appropriate response for subject questions, 57% correct answers with object questions, 66% accuracy with intransitive verb questions, and 57% correct answers to transitive verbs.

Previous research on the comprehension of passives revealed that children comprehend active earlier than passive voice, and comprehend action verb passives earlier than non-action verb passives (Maratsos et al. 1985). Along the same lines, Fox & Grodzinsky (1998) claimed that children use the strategy of assigning an agentive thematic role from the preposition "*by*", which works for action-/active-verb passives (*The rock star is being chased by the koala bear*) and not for non-action verb passives (*The boy is seen by the horse*) whose external argument is often a theme or experiencer. Borer & Wexler (1987) concluded that children's ability to form argument chains that are required to move a verb's object into subject position to make passive sentences is not acquired before the age of five.

With the current study we aim to investigate the development of *wh*-questions and passive voice in the two Southern varieties of American English and Mainstream American English, and examine potential similarities and differences across the different structural environments where we find/test *wh*-questions and passive voice. An additional objective of the current study is to produce developmental trajectories for these three varieties of American English, for the overall comprehension of *wh*-questions and passives from early stages to full acquisition.

Based on what we already know from previous research on these populations, especially C&T (2021) and Moland & Oetting (2021), we should expect: (a) considerably low percentages of accuracy across the two environments for SAAE- and SE-speaking children, and (b) a considerable difference across SAAE-speaking and SE-speaking children, and the SAAE and MAE groups. In accordance with the results reported by C&T (2021), Horton–Ikard & Weismer (2005), and Moland

& Oetting (2021), we may expect significant differences across SE and SAAE, as well as these populations and MAE. However, based on C&T (2023a; 2023b), Christodoulou, Tsimpli & Cayli (2023) and Christodoulou, Tsimpli & Alquayb (2023) we may expect a parallel performance across the three groups. Moreover, considering the results from prior work on the acquisition of *wh*-questions, we should expect *where* and *what*, questions to present higher rates of accuracy than *how* and *who/what* questions (Bloom et al. 1982; Kuczay & Brannick 1979; Tyack & Ingram 1977). In line with de Villiers, de Villiers & Roeper (2011), we should expect SAAE-speaking children to perform at high rates, potentially higher than SE- and MAE-speaking children, with the more complex 'double *wh*-questions', such as: *How did the mother ask what to bake?*. Concerning the comprehension of passives, we predict that *action verb passives* will be acquired earlier than *non-action verb passives*, hence higher accuracy rates will be recorded with *action verb passives* (Maratsos et al. 1985).

2. Materials and method. Forty-six children, speakers of Southern African American English aged 3 to 13, one hundred and thirty-nine Southern English-speaking children aged 2 to 12, and thirty-seven Mainstream American English-speaking children aged 2 to 11, from at least 7 different public and private schools located in northern Mississippi, from both urban and rural areas, participated in this study. Participants came from homes with diverse socio-economic and educational backgrounds. They were monolingual speakers of English, and were exposed to MAE, SAAE, and SE on a daily basis. Information on the three groups' chronological and mental age, as well as their raw score on the IQ test we administered is provided in Table 1.[1] This project received approval by the University of Mississippi IRB Committee (Project ID:18-035/MSCA-GF Linguistic Illusions) as well as the University of Cambridge School of Humanities and Social Sciences Ethics Committee.

	SE	SAAE	MAE
N	66F, 73M	30F, 16M	18F, 19M
Age range	2;11 – 11;6 M=7;1, SD= 23	4;3 – 13;8 M=8;2, SD= 22	2;8 – 11;1 M=6;10, SD= 24
IQ raw score	3 – 35 M=22.2	2 – 35 M=22.0	7 – 35 M=24.3
Mental age	<4.0 – >11.6 M=8.6	<4.0 – >11.6 M=8.0	<4.0 – >11.6 M=8.9

Table 1. Participant information

In order to evaluate the participants' performance with the comprehension of *wh*-questions and passive voice, we administered the Diagnostic Evaluation of Language Variation – Norm Referenced (DELV-NR) (Seymour, Roeper & de Villiers 2005), a standardized test designed to explicitly test the linguistic abilities of children speaking varieties of English that differ from MAE. The test is divided into twelve parts testing for four main linguistic domains: syntax, pragmatics, semantics and phonology. We then isolated Part 1 and Part 2, which focused on the comprehension of *wh*-questions and passive voice, respectively. Next, we focused on the different types of sentences/ items included in each part and divided them in different categories, depending on their structural environment. Examples 1 though 8 give a breakdown of the different categories we evaluated (Tables 1–2).

[1] Categorization of the children into the three study groups was determined based on two questionnaires that parents were required to complete and return to us, alongside the consent form. Questionnaires inquired on information related to the children's and parents' linguistic background, place of birth for the child and the parent, as well as information on education, employment, etc. Some of these were examined as variables to determine whether they had any potential effects on the participants' performance.

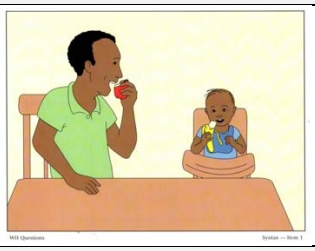
***Wh*-questions (Part 1 – Items 1 – 10)**	
A. Different *wh*-question words: where, how what, who/what, how/what	
1. Prime: This father and this baby were having lunch together. (Pause.) **Who ate what?** Answer: The dad ate the apple and the baby ate the banana.	
B. Subject-object, NP object, and PP object *wh*-questions	
I. **Subject-object *wh*-questions** 2. **Prime:** Here are children playing with toys. (Pause.) **Who is playing with what?** **Answer:** ***The girl is playing with the teddy bear and the boy is playing with the train.***	
II. **NP object *wh*-questions** 3. **Prime:** This boy went fishing with a piece of string and a hook. Something pulled on the string, and he called out to his friend, "I caught a big fish." But look, it was only an old boot! (Pause.) **What did the boy *say* he caught?** **Answer:** ***A fish.***	
III. **PP object *wh*-questions** **4. Prime:** These brothers went to the circus. A clown came and tickled the little boy on the nose with a feather. He sneezed very hard, and the clown's wig blew right off! After the circus, the brothers went to buy some milk. The little boy drank his milk with a straw, but the big brother drank his straight from the carton. (Pause.) **How did the boy who sneezed drink the milk?** **Answer:** ***With a straw.***	
C. Embedded and non- embedded *wh*-questions	
I. **Non-embedded *wh*-questions** 5. **Prime:** This boy eats different things in different ways. He eats ice cream with a fork and grapes with his fingers. (Pause.) **How does the boy eat what?** **Answer:** ***the boy ate the ice cream with a fork and the grapes with his fingers.***	
II. **Embedded *wh*-questions** 6. **Prime:** This mom didn't know how to bake a cake. She saw a TV program about cooking, and she learned to make a lovely cake with pudding mix. (Pause.) **How did the mom *learn* what to bake?** **Answer:** ***by watching a TV program / from TV.***	

Table 2. Examples of experimental material for *wh*-questions

Each stimulus was accompanied by the equivalent visual stimulus. The administration of the entire diagnostic ranged between 35 and 60 minutes, depending on the age of the participant.

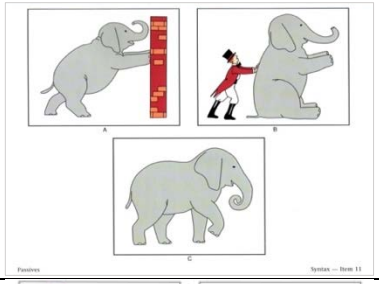
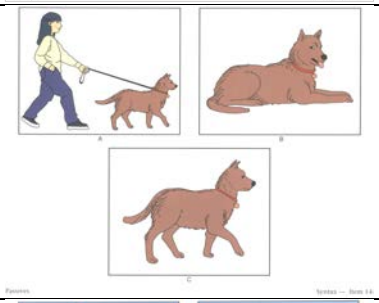
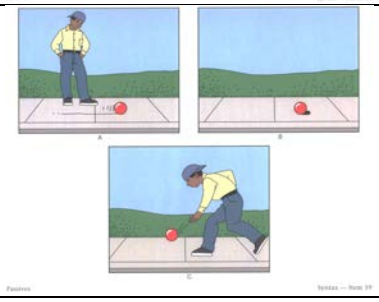
Passive Voice (Part 2 – Items 11 – 20)	
A. Simple **action passive** sentences, *7. The elephant was pushed.*	
B. Progressive passive sentences *8. The dog was being walked.*	
C. *by-phrase* *(PP)* **passive** sentences. *9. The ball was rolling by the boy.*	

Table 3. Examples of experimental material for passive voice

Prior screening was conducted. Particularly, we administered the Diagnostic Evaluation of Language Variation – Screening Test (DELV-ST) (Seymour, Roeper & de Villiers 2003) to decide whether any of our participants' language presented a variation from mainstream, and whether any of them were at risk for a language disorder. I additionally administered a non-verbal Intelligence Quotient (IQ) test, the Raven's Coloured Progressive Matrices IQ test. We chose a non-verbal IQ test to avoid any potential linguistic effects. To eliminate the possibility of hearing challenges, two auditory tests were also administered to all participants during this session; Test 1 was an imitation production task. It included 25 items of single words. Test 2 included a combination of an imitation production and picture matching task (15 minimal pairs).[2] The screening sessions always preceded the administration of the *DELV-NR*, and a gap period of at least 2 and up to 4 weeks between the two sessions was ensured to avoid any potential learning effects. In an additional session, we adminis-

[2] All words had concrete meaning; several other variables, including phonetic length, were controlled. The selection of stimuli for both tests was based on the frequency and age of acquisition for each word, following the *Age of Acquisition Mean for American English* corpus, with minor adjustments to incorporate some vocabulary which is of high frequency in the southern varieties of English, due to cultural reasons.

tered numerous customized experiments, including an imitation production task and four narratives.[3] The four narratives examined, among various other linguistic phenomena, the comprehension of *wh*-questions. The three sessions were part of a large project, the Marie Skłodowska Curie Action (MSCA) project, studying language development in SE- and SAAE-speaking children. The current study focuses on results collected only from the second session.

All linguistic testing was administered by highly trained **native speakers of SAAE and SE varieties**. More than 30 graduate and undergraduate students from the University of Mississippi were employed as research assistants to administer all experimental stimuli and assist with data coding. This was deemed necessary to prevent any bias effects from the participants' interactions with non-native speakers of their respective varieties. For the same reason, and to avoid any effects from variability across speakers/examiners, all experimental stimuli for each child were administered by the same native speaker of their respective variety. Due to reasons related to appropriateness of training, the investigator/author administered the Raven's Coloured Progressive Matrices IQ test to all children.

Two pilot studies were conducted to test how easily and efficiently our standardised and customised experimental tasks could be administered and to correct any difficulties with the material and method of administration. Pilot studies were also partly used to train our numerous research assistants who conducted data collection. The 10 children (aged 3 – 7) who participated in the pilot studies were not included in the main study. All sessions were recorded.

3. Results. The participants' performance with each of the tested environments was evaluated. To calculate the means, the overall number of correct responses was divided by the overall number of items per answer, for each child. Participants across the three groups presented parallel performance with the comprehension of *wh*-questions and passive voice (Figure 1), though SAAE-speaking children present a slight advantage with both grammatical phenomena. Both SE- and SAAE-speaking children performed better with *wh*-questions. MAE-speaking children's performance was identical across the two structural phenomena, and the lowest across the three participant groups.

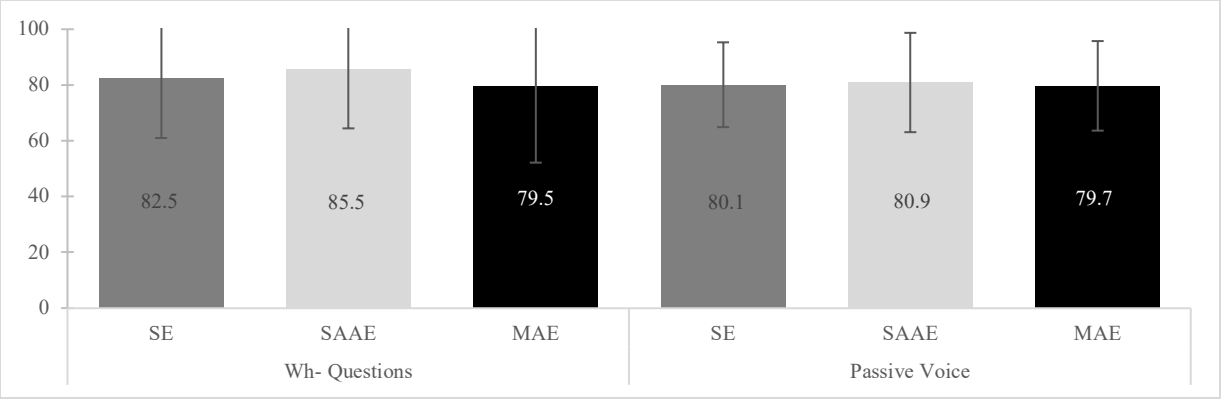


Figure 1. Comprehension of *wh*-questions and passive voice

The participants' performance was also evaluated per age, and plotted with 2 developmental trajectories, one for each structural phenomenon. Figure 2 shows a near identical performance with the development of *wh*-questions across age especially after entering the school system at age 5 or 6. MAE-speaking children do present a slight advantage before age 6, especially for ages 4 and

[3] Each of the narratives included (a) a portion where participants where either telling or re-telling a story by watching a different video for each story, and (b) a portion where they needed to respond to a list of *wh-question*s related to each story. There were four stories of varying length in total.

5. (MAE=90.0 vs. SAAE & SE = 70.0), but this lead is "neutralized" once the other two groups enter the school system.

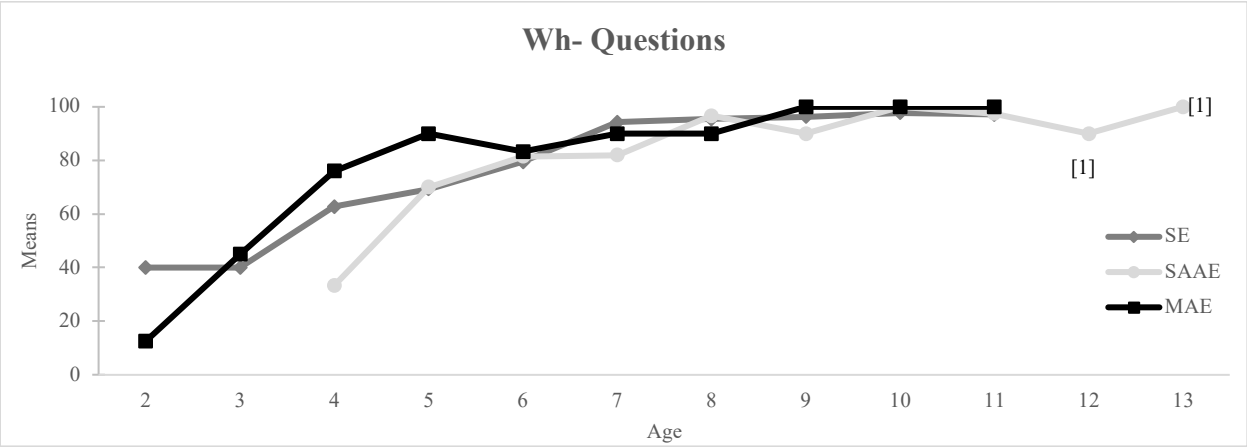


Figure 2. Comprehension of *wh*-questions per age

Note. There was only one participant for the SAAE group for ages 12 and 13.

The slight advantage that MAE-speaking children have with the comprehension of *wh*-questions before age 6 is not observed with passive voice. The three groups present a comparable performance with the development of passive voice across age, with minor exceptions. (Figure 3). From age 5 to age 7 the three groups' performance is indistinguishable, but minor variations across all other ages are observed.

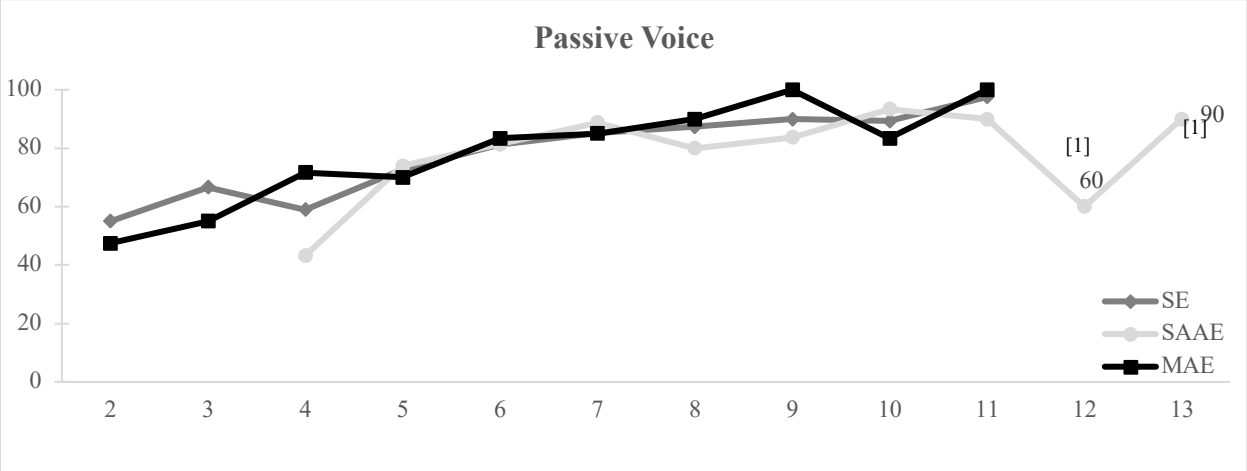


Figure 3. Comprehension of passives per age

An analysis of the various *wh*-question words examined by the current study shows that the three participant groups presented minor variations across the different types of *wh*-question words (Figure 4). Overall, the SAAE group presented a slight advantage across all question words, with the exception of *where* questions, where the SE group was better. The lowest performance across all groups was noted with the *how* and *how/what* questions, confirming previous findings on MAE, revealing a later acquisition of these *wh*- words, compared to *where* and *what* questions. SAAE-speaking children, however, were considerably better with *how* questions than the other two groups.

The next level of analysis pursued is the type of *wh*-questions based on the answer provided; we categorized *wh*-questions (or required answers) into: subject-object questions, Noun Phrase (NP) object questions, and prepositional phrase (PP) questions. Results reveal that all three

groups present their highest performance with the seemingly more complex Subject-Object questions, and their lowest performance with NP object questions (Figure 5).

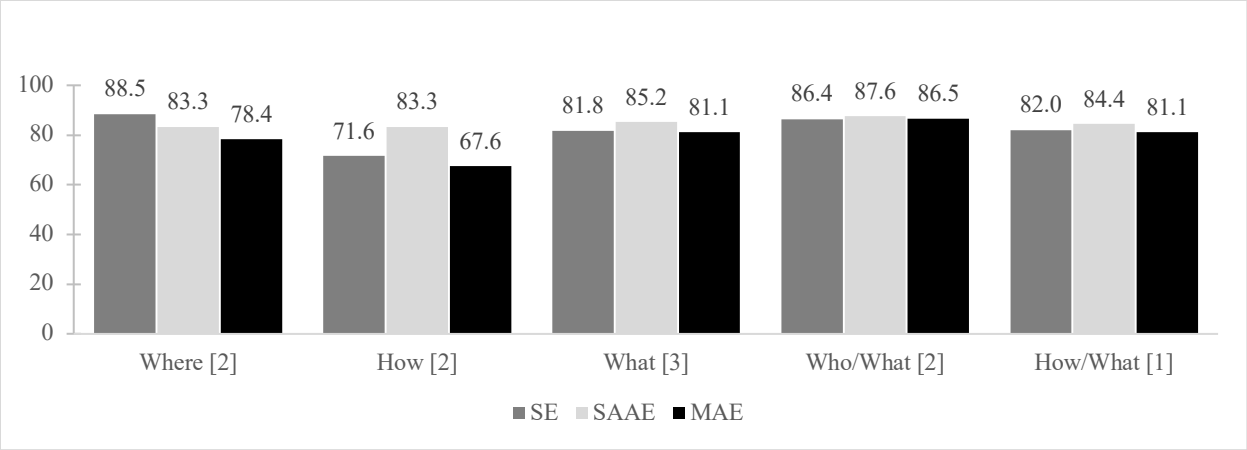


Figure 4. Comprehension of *wh*-questions per *wh*- word

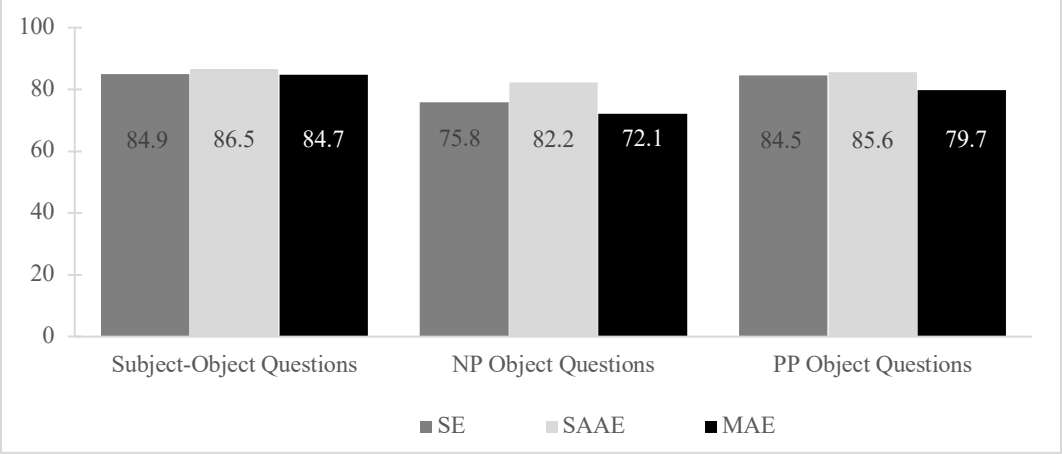


Figure 5. Comparison of subject-object vs. NP object vs. PP object questions

The last question categorization we pursued was based on whether the *wh*-question included an embedded vs. non-embedded questions (Figure 6). The three groups presented a fairly parallel performance with both categorizations.

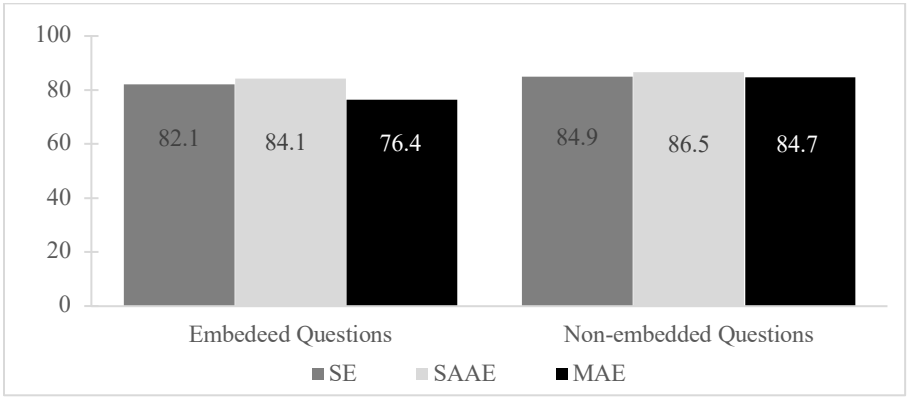


Figure 6. Comparison of embedded vs. non-embedded questions

Passive voice items fell under three separate categories: action passives, *by*-phrase passives and progressive passive. The lowest accuracy rates were reordered with progressive passives, and highest accuracy rates were noted with action passives. Results revealed a comparable performance across the three groups, with the exception of progressive passives, where MAE-speaking children's performance was considerably lower (Figure 7). The most common error for passive voice was using the picture depicting the same action in active voice.

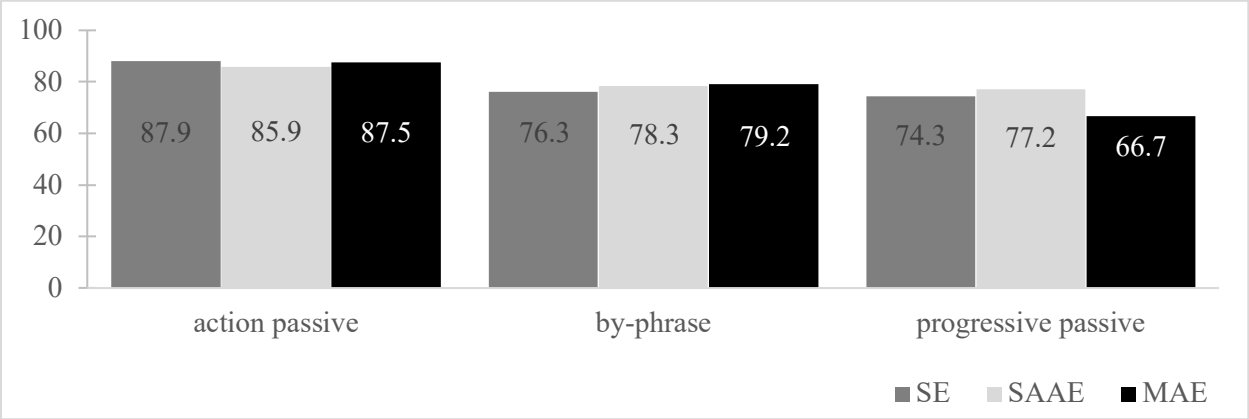


Figure 7. Comparison of action vs. *by*-phrase vs. progressive passives

The examples below illustrate the participants' responses to the targeted *wh*-questions. Examples include some instances where a participant's productions (a) matched the targeted or expected structure, and (b) did not match the target.

Part 1.1 Prime: This father and this baby were having lunch together. (Pause.) **Who ate what?**
Answer: The daddy ate the apples, and the baby ate the bananas. CA:6.3, AAE-speaker

#1 They ate fruit. (reprompt) CA:4.7, AAE-speaker
#2 The daddy ate apple and baby ate the banana

a yellow thing CA: 5.8, SE-speaker

Part 1.4 Prime: The boy found a cat with a broken leg that was lying on a table. He found a scarf and fixed the cat's leg with the scarf. (Pause.).
What did the boy fix the cat that was lying on the table with?
Answer: a ribbon. CA:3.4, SE-speaker
#1 a broken leg #2 scarf (reprompt) CA:5.3, SE-speaker

Part 7.1 Prime: This mom didn't know how to bake a cake. She saw a TV program about cooking, and she learned to make a lovely cake with pudding mix. (Pause.)
How did the mom learn what to bake?
Answer: A cooking program CA:9.0, AAE-speaker

4. Discussion. The main goal of the current study was to examine the acquisition of complex syntactic structures, particularly the comprehension *wh*-questions and passive voice in Southern English, Southern African American English and mainstream American English, three varieties of English which co-exist in most communities in the American South. An additional objective of this study was to produce developmental trajectories across different ages for these three varieties, in the two tested environments, in order to identify any potential deviations in performance across age. Even though there is a growing body of literature on the use of the copula and auxiliary *BE*, as well as the production of the third person singular *–(e)s* verbal agreement, research on complex structures in SAAE and SE is limited.

Results evidenced a mostly comparable performance across the three groups; The groups' performance across all question words is almost identical, with minor exceptions. Statistical analysis, which is currently underway, will clarify whether any minor differences are significant.The developmental trajectories plotting the participants' performance across age, revealed a small variability across the three groups, especially with our younger participants, but for the most part, SAAE-, SE- and MAE-speaking children have comparable development with *wh*-questions and passive voice across corresponding ages, with minor deviations before ages 5 (or 6), i.e. before entering the K-12 system.[4] This supports the C&T (2021) proposal that lack of early education plays a critical role.Specifically, we find a virtually identical performance with *wh*-questions from age 6 onward. The (S)AAE advantage with the comprehension of more complex double *wh*-questions reported by de Villiers et al. (2011) is indeed observed with our participants, though not highly evident when we plot the participants' overall performance with *wh*-questions across age. Predictions made based on Bloom et al. (1982), Tyack & Ingram (1977), and Kuczay & Brannick (1979) were also partially confirmed, as the overwhelming majority of the participants presented higher accuracy rates with *who/what*, *where*, and *what*, questions over *how* and *how/what* questions. Results support that performance across groups does not vary based on the specific variety of English spoken by a child. Rather, speakers across these varieties of American English acquire *wh*-questions at parallel chronological ages, especially after they enter the school system. Results from previous work, such as C&T (2021) and Roy, Oetting & Moland (2013), suggesting major differences across the three groups, are not supported by the results of this study.

With regard to the particular environments under which we categorised the participants' responses to the *wh*-questions, higher accuracy rates by all groups were recorded with the comprehension of the subject-object classification as opposed to the other two environments, especially the NP object classification, where the lowest performance for all three groups was noted. SAAE-speaking children had slightly higher accuracy rates across all three classifications. Results seem to support previous research showing that children misinterpreted object questions more often than subject questions (Tyack & Ingram 1977), as all three groups present their lowest accuracy rates with NP object questions. The age range of the children participating in this study was quite broader than the Tyack & Ingram (1977) however, so differences might be even more striking, when focusing only on younger ages. Parallel performance surfaced with the comprehension of mainly non-embedded *wh*-questions, but statistical analysis is needed to determine whether the participants performance across embedded and non-embedded questions reaches significance. We do observe that the SAAE group presents a minor advantage with both question types. Once again, their performance with more complex structures is stronger than that of the other two groups' performance.

SE-, SAAE- and MAE-speaking children present a comparable performance with the comprehension of passives. Further analysis on the three sub-types of passives—traditional action passives vs. *by*-phrase (PP) vs. progressive passives—also revealed a parallel performance, with the exception of progressive passives, where we see the MAE-speaking group lagging behind. All three groups were slightly better with action passives, verifying our prediction that children comprehend action verb passives earlier than non-action verb passives. Predictions on the usefulness of the *by*-phrase, based on the Fox & Grodzinsky (1998) study, were not possible, as none of our passive structures included the agentive type of a *by*-phrase. The comparatively lower performance with our prepositional *by*-phrases, however, may suggest a potential confusion, where our participants may have anticipated the presence of the agent/external argument following the word *by*, but heard a different use of *by*, introducing a PP.

[4] Age 5 is typically the age children in Mississippi enter the (pre-)K system—if they have access to one in their area and can afford one—and age 6 or 7 is the age children typically enter first grade, the age most children in Mississippi are exposed to any type or formal language instruction, or learning in an educational setting.

The results presented by the current work show that the three groups do present parallel performance with the two structural environments, especially after the age of 5. It appears that none to their variation-specific characteristics have influenced the groups' performance with the comprehension of either *wh*-questions or passive voice, except for the minor advantage that SAAE appear to have with *wh*-questions. This is not surprising, as the diagnostic eliminated or took into consideration variety-specific differences. Identical performance from age 5 (or 6) onward for *wh*-questions, seems to point towards effects from lack of early education for the younger children, who show a more variable performance before age 6. Note that most children in the children from the MAE group who performed much higher than the children in the SE and SAAE groups were attending a school following a structured, academic curriculum from as early as 18 months.

5. Conclusion. The current work contributes to the limited research on the acquisition of complex syntactic structures by Southern English-, Southern African American English- and Mainstream American English-speaking children as young as 2-years-old and as old as 13-years-old, who are born and raised in Northern Mississippi. Parallel performance across the three groups in the variety of structural environments we tested the comprehension of *wh*-questions and passive voice clearly shows that the three groups are developing the two grammatical phenomena comparatively.

Results from the current study do not only add to the limited body of research on the development of the two complex syntactic structures across the three populations, but they could also help guide diagnosis and rehabilitation of language difficulties, as well as educational policies, diagnostic/assessment and rehabilitation protocols, which are critical for academic growth. This would, in turn, help prevent under- or over-diagnosis of the linguistic abilities of children.

We are currently in the process of analyzing additional data on the development of *wh*-questions across an imitation production task and the comprehension of *wh*-questions from four narratives. The analysis for these data is underway and is expected to be completed within the next 2-3 months. This will produce an additional 15,000 productions to the existing data. Additional grammatical phenomena that we are currently working on include amongst others the production and comprehension of determiners, quantifiers, consonant clusters, analysis of verbal and nominal features in free and controlled elicitation tasks, as well as data from SAAE- and SE-speaking individuals diagnosed with Down Syndrome. Upon completion of data analysis from the entire *MSCA* project we anticipate that we will be able to closely look at a large variety of specific linguistic phenomena and have a broader, but more informed view of the specific characteristics of each of the two Southern varieties of English and what their various stages of acquisition are. Dissemination of the current results to the greater public, not just the academic community, may also assist in social and educational inclusion and the efficient integration of children speaking the SE and SAAE varieties across primary, secondary and even tertiary education, where we do still see some signs of hypercritical, or even rather disapproving behaviours.

References

Amaral, Lulz & Thomas Roeper. 2014. Why minimal multiple rules provide a unique window into UG and L2. *Second Language Research* 30. 97–107. https://doi.org/10.1177/0267658313511107.

Bloom, Lois, Susan Merkin & Janet Wootten. 1982. Wh-questions: Linguistic factors that contribute to the sequence of acquisition. *Child Development* 53. 1084–1092. https://doi.org/10.2307/1129150.

Borer, Hagit. & Kenneth Wexler. 1987. The maturation of syntax. In Thomas Roeper & Edwin Williams (eds.), *Parameter setting*. 123–72. Dordrecht: Reidel Publishing Company.

Christodoulou, Christiana & Ianthi Maria Tsimpli. 2021. Language development in Southern Varieties of American English. In Danielle Dionne & Lee-Ann Vidal Covas (eds.),

Proceedings of the 45th annual Boston University Conference on Language Development, 157–170. Somerville, MA: Cascadilla Press. http://www.lingref.com/bucld/45/BUCLD45-12.pdf .

Christodoulou, Christiana & Ianthi Maria Tsimpli. 2023a. Language development across three varieties of American English. In Paris Gappmayr & Jackson Kellogg (eds.), *Proceedings of the 47th annual Boston University Conference on Language Development*, 145–158. Somerville, MA: Cascadilla Press. http://www.lingref.com/bucld/47/BUCLD47-12.pdf.

Christodoulou, Christiana, & Ianthi Maria Tsimpli. 2023b. Linguistic illusions and misconceptions: The role of language variation in language development across three varieties of American English. *Proceedings of the Linguistic Society of America* 8. 5532. https://doi.org/10.3765/plsa.v8i1.5532

Christodoulou, Christiana & Ianthi Maria Tsimpli. Under review. Language acquisition in African American English and Southern English.

Christodoulou, Christiana, Ianthi Maria Tsimpli & Arwa Alquayb. 2023. The comprehension of *wh*- questions and passive voice in Southern American English and Southern African American English. Presented at the 90th Southeastern Conference on Linguistics.

Christodoulou, Christiana, Ianthi Maria Tsimpli & Beyza Cayli. 2023. How different is the question? Acquisition of *wh*- questions in African American English and Southern English. Presented at the 97th Annual Meeting of the LSA.

Coles-White, D'Jaris. 2004. Negative concord in child African American English: Implications for specific language impairment. *Journal of Speech, Language, and Hearing Research* 47. 212–222. https://doi.org/10.1044/1092-4388(2004/018).

Craig, Holly & Julie Washington. 2006. *Malik goes to school: Examining the language skills of African American students from preschool-5th grade*. Mahwah, NJ: Lawrence Erlbaum.

de Villiers, Gill, Peter de Villiers & Thomas Roeper. 2011. *Wh*- questions: Moving beyond the first phase. *Lingua* 121(3). 352–366. https://doi.org/10.1016/j.lingua.2010.10.003.

Fox, Danny & Yosef Grodzinsky. 1998. Children's passive: A view from the *by*-phrase. *Linguistic Inquiry* 29. 311–332. https://www.jstor.org/stable/4179020

Green, Lisa. 1995. Study of verb classes in African American English. *Linguistics and Education* 7(1). 65–81.

Green, Lisa. 2002. *African American English: A linguistic introduction*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511800306.

Green, Lisa. 2011. *Language and the African American child*. Cambridge: Cambridge University Press.

Green, Lisa, Tonya Wyatt & Qiuana Lopez. 2007. Event arguments and 'be' in child African American. *University of Pennsylvania Working Papers in Linguistics* 13(2). 95–108.

Horton-Ikard Ramonda, & Susan Ellis Weismer. 2005. Distinguishing African American English from developmental errors in the language production of toddlers. *Applied Psycholinguistics* 26. 597–620. https://doi.org/10.1017/S0142716405050320.

Kuczaj, Stan & Nancy Brannick. 1979. Children's use of the *wh*- question modal auxiliary placement rule. *Journal of Experimental Child psychology* 28. 43–67. https://doi.org/10.1016/0022-0965(79)90101-2.

Maratsos, Michael, Dana Fox, Judith Becker & Mary Chalkley. 1985. Semantic restrictions on children's passives. *Cognition* 19. 167–191. https://doi.org/10.1016/0010-0277(85)90017-4.

Mills, Monique, Leslie Moore, Rong Chang, Somin Kim & Bethany Frick. 2021. Perceptions of Black children's narrative language: A mixed-methods study. *Language, Speech, and Hearing Services in Schools* 52(1). 84–99. https://doi.org/10.1044/2020_LSHSS-20-00014.

Moland, Christy, & Janna Oetting. 2021. Comparison of the diagnostic evaluation of language variation–screening test risk subtest to two other screeners for low-income prekindergartners

who speak African American English and live in the urban South. *American Journal of Speech-Language Pathology* 30(6). 2528–2541. https://doi.org/10.1044/2021_AJSLP-20-00270.
Newkirk-Turner, Brandi & Lisa Green. 2016. Third person singular *-s* and event marking in child African American English. *Linguistic Variation* 16(1). 103–130. https://doi.org/10.1075/lv.16.1.05new.
Newkirk-Turner, Brandi, & Lisa Green. 2021. Language use and development in third-person singular contexts: Assessment implications. *Language, Speech, and Hearing Services in Schools* 52(1). 16–30. https://doi.org/10.1044/2020_LSHSS-19-00109.
Oetting, Janna & Janet McDonald. 2001. Nonmainstream dialect use and specific language impairment. *Journal of Speech, Language, and Hearing Research* 44. 207–223. https://doi.org/10.1044/1092-4388(2001/018).
Oetting, Janna. 2015. Some similarities and differences between African American English and Southern White English in children. In Jennifer Bloomquist, Lisa Green & Sonja Lanehart (eds.), *The Oxford handbook of African American language*. Oxford: Oxford University Press. https://academic.oup.com/edited-volume/28056.
Poplack, Shana, Sali Tagliamonte & Ejike Eze. 2000. Reconstructing the source of early African American English plural marking: A comparative study of English and Creole. In Shana Poplack, (ed.), *The English history of African American English*, 73–105. Oxford & Malden: Blackwell Publishers.
Roeper, Thomas. 1999. Universal bilingualism. *Bilingualism Language and Cognition* 2. 169–186. https://doi.org/10.1017/S1366728999000310.
Roy, Joseph, Janna Oetting & Christy Moland. 2013. Linguistic constraints on children's overt marking of BE by dialect and age. *Journal of Speech Language and Hearing Research* 56(3). 933–44. https://doi.org/10.1044/1092-4388(2012/12-0099).
Seymour, Harry, & Charlena Seymour. 1981. Black English and Standard American English contrasts in consonantal development of four- and five-year-old children. *Journal of Speech-Hearing Disorders* 46. 274–280. https://doi.org/10.1044/jshd.4603.274.
Seymour, Harry, Thomas Roeper & Jill de Villiers. 2003. *Diagnostic evaluation for language variation screening test*. San Antonio, TX: The Psychological Corporation.
Seymour, Harry, Thomas Roeper & Jill de Villiers. 2005. *Diagnostic evaluation for language variation norm referenced*. San Antonio, TX: The Psychological Corporation.
Tyack, Dorothy & David Ingram. 1977. Children's production and comprehension of questions. *Journal of Child Language* 4. 211–224. https://doi.org/10.1017/S0305000900001616.
Washington, Julie & Holly Craig. 2004. A language screening protocol for use with young African American children in urban settings. *American Journal of Speech-Language Pathology* 13(4). 329–340. https://doi.org/10.1044/1058-0360(2004/033).
Wyatt, Tonya. 1995. Language development in African American English child language. *Linguistics and Education* 7(1). 7–22.