2023. *Proc Ling Soc Amer* 8(1). 5532. https://doi.org/10.3765/plsa.v8i1.5532.

Linguistic illusions and misconceptions: The role of language variation in language development across three varieties of American English

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Abstract. Prior research on the linguistic abilities of Southern English- (SE) and African-American English-speaking children (SAAE) revealed high rates of risk for a language disorder, especially for the SAAE-speaking children (Christodoulou & Tsimpli 2021; Moland & Oetting 2021). This study examines the performance of 220 SE-, SAAE-, and Mainstream American English (MAE)-speaking children, aged 2-13, and analyzes their performance, through twelve sections, in four key linguistic domains: *syntax, semantics, pragmatics, and phonology*, using a standardized assessment test. Results revealed a parallel performance across the three groups in all linguistic domains. The highest means of accuracy were noted with phonology, and lowest with semantics. Analysis of the participants' performance by age evidenced a virtually identical performance across the three groups after the age of 6 or 7, but considerable variations were noted with younger children. Results from the current study contradict results from previous work showing considerably high rates of risk for a language disorder for the SAAE-speaking children, as their performance is parallel to not only that of SE-speaking children, but it also the performance of MAE-speaking children. Results from the current study could help guide educational policies, especially for early education programs, as well as diagnostic assessment and rehabilitation.

Keywords. African American English; Southern English; dialectal variation; linguistic development; linguistic varieties of American English; language development across age

1. Introduction. There has been very little research that compares the acquisition of Southern English (SE) and Southern African-American English (SAAE) in children of the South, as previous research focuses mainly on the differences between AAE and Mainstream American English (MAE). SE, SAAE, and MAE are three varieties of English that coexist in most communities in the southern United States. Despite the extensive research, showing that reduction of overt inflectional marking, compared to other American English varieties, is a characteristic of this variety, African American English (AAE) is still a socially stigmatized linguistic variety (Green 1995). 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.

* 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. We are grateful to all our participants and their families for making this research possible, as well as the 30 research assistants who worked so tirelessly to collect and help organise/analyse the data presented in this work.
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Some of the main differences noted across AAE and MAE in the literature are: (a) the omission of singular agreement *-s/-es,* (b) the omission of auxiliary *BE,* the omission or differing uses of copula *BE,* and (c) numerous phonological differences, including differences with the production of some consonants in specific phonological environments, e.g. [bæ**f**] instead of [bæ**θ**], as well as some vowels e.g. [mãn] or [mæ̃n] instead of [mæn], or differences in stress (Edwards 2008; Tillery & Bailey 2008; Wyatt 1995). Previous research on AAE falls under three main categories: (a) development of *BE* in all its possible uses (Green 2011; Green 2002; Oetting & Moland 2013; Roy, Oetting & Moland 2013), (b) omission of 3SG *-s* morpheme, (Amaral and Roeper 2014; Green 2016; Newkirk-Turner & Green 2016, 2021; Schneider 1989), and (c) overall language development. 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 four linguistic domains (*syntax, pragmatics, semantics and phonology*) across SE, SAAE and MAE of children who are born and brought up in the same communities in Northern Mississippi.

There have been claims that AAE-speaking children first develop MAE or rather a language 'system' in general, and then around age 3 start exhibiting or acquiring AAE. For example, omission or alternate use of the copula, was reported for AA children after the age of 3 (Cole 1980). However, Steffensen (1974) claims that there is little evidence for distinguishing between AAE-specific characteristics and universal language acquisition processes observed in children under 3, especially because some of the AAE characteristics are coincidentally comparable to those of early developmental errors. A study on the overall language development of AAE- and MAE-speaking children examined the increase/decrease of use of AAE-specific characteristics and the use of developmental errors. Horton–Ikard & Weismer (2005) reported that 3.5-year-old AAE children presented an increase in the use of non-MAE forms, while 3.5-year-old MAE-speaking children presented a decrease in the production of common developmental errors found during the early stages of language acquisition. Furthermore, 3.5-year-old AAE speakers' performance was almost equivalent to that of the 2.5-year-old AAE-speakers, whereas 3.5-year-old MAE-speaking children presented lower rates of non-standard speech than the 2.5 MAE-speaking children in their study.

Because of these same characteristics, which coincidentally also resemble the speech of children with SLI (Smith 2015), currently known as *Developmental Language Delay*, children speaking AAE have often been referred to a speech language pathologist. This unsubstantiated tendency to consider or even clinically evaluate AAE-speaking children's language as being at risk for a language disorder, or presenting characteristics that resemble a language disability, may be stemming from the fact that test norms and baseline information used by professionals (SLPs, teachers, psychologists) are typically obtained by children from "White middle-class MAE-speaking backgrounds" or comparative studies of "African American and White children" (Wyatt 1995). Attempts to provide more inclusive diagnostics over the past two or three decades have been made, and they have been, to a great extent, successful. However, as we discuss in this work, as well as in Christodoulou and Tsimpli (2021), a revision of these diagnostics may be necessary, as they are found to potentially over-screen and incorrectly flag a large percentage of children as being at risk for a language disorder.

Research studies, presenting comparisons across MAE and AAE or AAE and SE, discuss a number of similarities and differences across the productions of their tested populations. Oetting (2015) uncovered a number of similarities and differences across AAE- and SE-speaking chil-

dren. More explicitly, she reports similarities on a morphological and syntactic level. On a morpho-logical level, she reported an 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. On a syntactic level, she noted the use of parallel relative clause markers (∅ and *what*). Differences mainly concerned: (a) the rates at which AAE- and SE-speaking children produce the grammatical forms that deviate from MAE, such those of copula and auxiliary *BE* subject-verb agreement *-s* morpheme, (b) the manner in which these grammatical forms are used, which are specific to each variety of American English, and (c) the roles those play selecting some grammar forms over others. Moland & Oetting (2021) examined the linguistic abilities of 73 AAE-speaking children in an urban Southern city. Children were administered three tests: the *Washington and Craig Language Screener* (Washington & Craig 2004), and the *Diagnostic Evaluation of Language Variation Screening Test* (*DELV-ST*) (Seymour, Roeper & de Villiers 2003), and the *Fluharty Preschool Speech and Language Screening Test–Second Edition (FLUHARTY-2)*. While the former analyses children's linguistic abilities during freeplay, *DELV-ST* is divided into two parts: Part I traces whether a child speaks a variety deviating from MAE, and Part II traces whether a child is at risk for a language disorder, taking into consideration/eliminating effects from dialectal characteristics. While results for the *FLUHARTY*-2 ranged from 34% to 75%, results revealed a 'fail rate' of 48% for the *Washington and Craig Language Screener*, a 52% for the risk for language disorder portion of *DELV-ST*.

Christodoulou and Tsimpli (C&T) (2021) examined whether (a) the overall linguistic skills of SE- and SAAE-speaking children exhibited variation from MAE, and (b) whether any of them were at risk for a language disorder. Results from the *DELV-ST*, showed that the majority of SE-speaking children's language did not vary from MAE (M=84%), while SAAE-speaking children's language, fell almost equally under exhibiting characteristics matching MAE (M=48%) and strong variation from MAE (M=40%). Moreover, concerning the potential risk for developing a language disorder, results showed that 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. 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 shocking result suggests that the existing early education system in Mississippi is failing its SE and SAAE speaking populations, especially the latter, since according to the results from the *DELV-ST* every 3 in 5 SAAE-speaking children present high risk for a language disorder. Additional analysis on the grammaticality of the children's productions showed at ceiling accuracy across both sections of the screening test, with minor exceptions. This suggests that there seem to be some discrepancies with the test, which are possibly further facilitated by the gaps created in the children's language development, 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.

The standardised test used in the current study does take into account dialectal particularities, but more importantly tests, with multiple, diverse tasks, the grammatical performance and potential risk for a language disorder of a number of different grammatical phenomena, that appear to develop in parallel across the three varieties. Hence, with the current study we aim to examine language development across Southern English, Southern African-American English, and Mainstream American English, and analyze their performance in four key linguistic domains: syntax, semantics, pragmatics, and phonology. We aim to record any potential similarities and differences across them, and produce developmental trajectories across different ages for these three varieties of American English, in the four tested domains. 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 four domains for SAAE- and SE-speaking children, and (b) a considerable difference across SAAE-speaking and MAE-speaking children, and the SAAE and MAE groups. Results from the current study will also allow us to corroborate or disprove C&T's (2021) conclusions, as stated above.

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-five 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 all three varieties under investigation 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]

	SE	SAAE	MAE
N	66F, 73M	30F, 16M	17F, 18M
Age range	2;11 – 12;2 M=7;1, SD= 23	3;2 – 13;8 M=8;2, SD= 22	2;8 – 10;11 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

Data collected during this project were administered in three separate sessions. In **Session A**, which was our screening session, 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. We 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). 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. In **Session B** we administered the main diagnostic test we used to conduct our linguistic comparisons. More explicitly, as means of linguistic comparison we used 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 vary from the Mainstream (Table 2). The test is divided into twelve sections testing for 4 main linguistic domains: syntax, pragmatics, semantics and phonology. *DEVL-NR* is an individually administered diagnostic

[1] Children were placed in the three study groups based on information collected from two questionnaires that parents were required to complete. Questions concerned the children's and parents' place of birth, education, employment and entire linguistic background.

Diagnostic Evaluation of Language Variation – Norm Referenced Test (DELV-NR)			
Target	**Example**	**Target**	**Example**
Syntax (Comprehension of *wh*-questions) (Part 1 – Items 1-10)	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	**Semantics** Verb contrast (Part 7 – Items 1-10)	Prime: The man isn't walking, he's… Answer: crawling; walking on his hands and knees.
Passive voice Picture selection (Part 2 – Items 11-20)	Prime: The elephant was pushed. Answer: point to the picture of a man pushing an elephant.	Preposition contrast items (Part 8 – Items 11-16)	Prime: She's not looking at the radio, she's listening . . . Answer: to the radio; with her ears
Production of determiners *the vs. a* (Part 3 – Items 21-28)	Prime: Sally was going to eat a banana, but first she had to take something off it. What did she take off it? Answer: …*the* peel	Quantifiers Part A: Response Part B: Picture selection (Part 9 – Items 17-25)	Prime: Is every man riding a horse? Answer: Yes, No, Why not? Prime: *The man watched every boy throw a ball.* Answer: point to picture of a man watching a group of boys, each throwing a ball.
Pragmatics Communicative role-taking (Part 4 – Items 1-4)	Prime: Look at what's happening here. (turn page) Look at the girl. What is the girl *asking* her mother? Answer: Can I have cake?; If she can have cake. (Direct or indirect request relevant to the picture)	Fast mapping: Real verbs (pointing) (Part 10 – Items 26-35)	Prime: The boy is pouring the juice. Here are the things in the pictures. I want you to show me . . . Answer: Which one was the pourer? Which one got poured?
Short narrative Story-telling via picture description (big brother hid a train toy from little brother) (Items 5-8)	Prime: The big boy is looking for the train under the bed. *Why is he looking there?* Answer: He thinks it's under the bed.	Fast mapping: Novel verbs (pointing) (Part 11 – Items 36-50)	Prime: The man is lelling the clown. Here are things in the pictures. I want you to show me… Answer: Which one was the leller? Which one was lellable?
Production of *wh*- questions (Part 6 – Items 9-18)	Prime: The nurse is feeding somebody. Ask me the right question, and I'll show you the answer. Answer: Who is she feeding?	**Phonology** Consonant clusters (Part 12 – Items 1-25)	Prime: I see a du*s*ty table. /dʌsti/ I see a cow on the *t*ractor. /træktɚ/ I see a smelly *sk*unk. /skʌŋk/ Answer: repeat the sentences.

Table 2. Summary of experimental material from the two sections of the DELV-NR

test, designed to identify speech and language disorders. The test takes into consideration differences across the multiple varieties of English, and therefore includes aspects of the English language that are shared amongst them. Table 2 summarizes the category of items tested by each section and gives an example for each linguistic phenomenon. For instance, when testing the comprehension of passive voice, the authors included primes similar to the following. The researcher would show the child three pictures and have them point to the picture that would match their utterance. They would say: "Look at all of the pictures, show me … *The plan was dropping by the boy*" (Figure 1). When testing verb contrasts under the semantics section, participants were shown a picture and were required to complete the sentence provided by the examiner. For example, the examiner would say "The mother's not combing her hair, she's…" and the child needed to say "braiding it/making braids or even "twisting it" and then the examiner would go on to say "the mother's not getting in her way, she's …" and the participant was expected to say "getting out of her way", or helping her" or "standing behind her" (Figure 2). Each stimulus was accompanied by the equivalent visual stimulus, with the exception of Section 3 (use of determiners). In this section, participants heard sentences and needed to respond to a question using the appropriate determiner. For example, the examiner would say: "Sally was going to eat a banana, but first she had to take something off it. What did she take off it?" and the participants were expected to say something along the lines of: "the peel" or "the yellow thing/wrapper/shell".

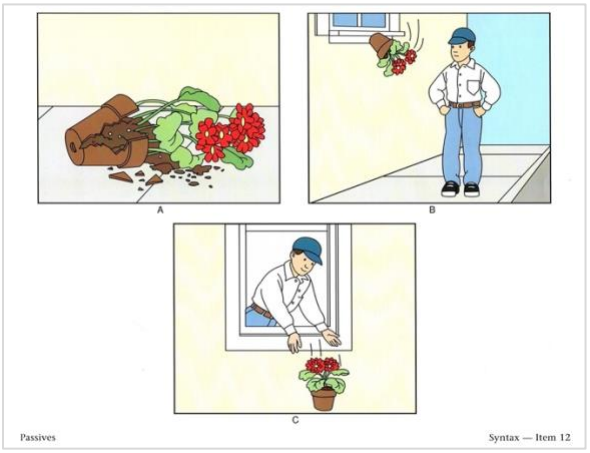

Figure 1. Part 2 – Item 12

Figure 2. Part 7 – Items 3 and 4

We considered dialectal variation answers to also be grammatical. For example, if a child said *she braiding* instead of *she **is** braiding* (Part 7 – Item 3 & 4) we considered it grammatical, but we considered responses like *the radio* instead of ***to** the radio* for the preposition contrasts (Part 8 – Items 11&12) as incorrect. The duration of Session B ranged from 35 minutes to 60 minutes, depending on the age of the participant. Session B always followed Session A, 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. **Session C** included a number of customized experiments, including an imitation production task and 4 narratives. Each of the narratives included (a) a portion where participants where either *telling or re-telling* a story (four stories in total), by watching a different video for each story, and (b) a portion where they need to responded to a list of *wh-* questions related to each story.

All tasks—with the exception for the *Raven's Coloured Progressive Matrices* IQ test, which was administered to all children by the first author—were administered by native speakers of each variety. More explicitly, approximately 30 graduate and undergraduate students from the University of Mississippi, were employed as research assistants to administer all experimental stimuli and as-

sist with data coding. This was deemed necessary to prevent any bias effects from the participants' interactions with non-native speakers. 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.

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 used to train our numerous research assistants who conducted data collection. Children who participated in the pilot studies were not included in the main study.

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 domain, for each child. Figure 3 summarises the participants' overall results. It shows a strikingly parallel performance across the three groups, across all four linguistic domains. Overall, all participants performed their lowest with semantic concepts, such as quantifiers, fast mapping with actual and non-words, preposition contrasts and verb contrasts. The highest accuracy scores for all three groups were noted with the phonology section. A univariate Analysis of Variance (ANOVA) with *performance* (per child, per domain) as the dependent variable and *group* as the independent variable revealed no significant differences across the three groups for any of the four domains: syntax, $F(1,217) = .711$, $p = .492$, semantics, $F(1,217) = .340$, $p = .712$, pragmatics, $F(1,217) = .882$, $p = .416$, and phonology, $F(1,217) = 1.1$, $p = .333$.

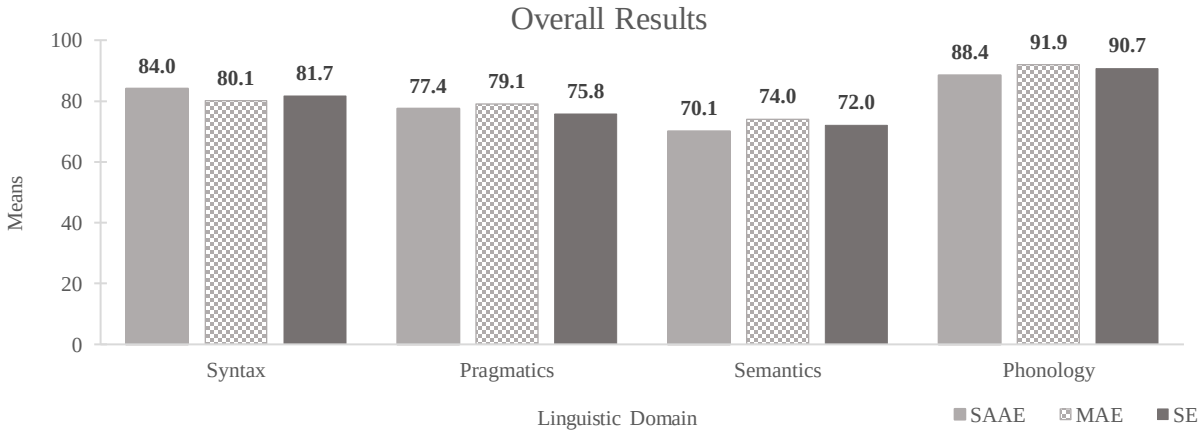

Figure 3. Overall results for the four domains tested

The participants' performance was also evaluated per age, and plotted with 4 developmental trajectories, one for each linguistic domain. Further analysis, as illustrated in Figure 4, revealed that, while SE- and MAE-speaking children's performance with Syntax was nearly identical across all ages, younger SAAE-speaking children's performance was lower at age 4 (SAAE=46.5 vs. MAE & SE = 67.7). From age 5 to age 11 the three groups presented matching accuracy rates. Note that there was only one participant for the SAAE group for ages 12 and 13, and one for age 12 for the SE group. A univariate ANOVA with *performance* as the dependent variable, *age* as the independent variable and *linguistic variation* as the random factor revealed that *age* was expectedly a significant factor for the participants' performance, $F(1,11) = 11.4$ $p = .<001$, $\eta^2 = .47$. However, *linguistic variation*, $F(1,2) = 2.07$ $p = .128$, $\eta^2 = .02$, and the *interaction* between *age* and *linguistic variation*, $F(1,17) = .73$ $p = .768$, $\eta^2 = .06$, did not evidence a significant result.

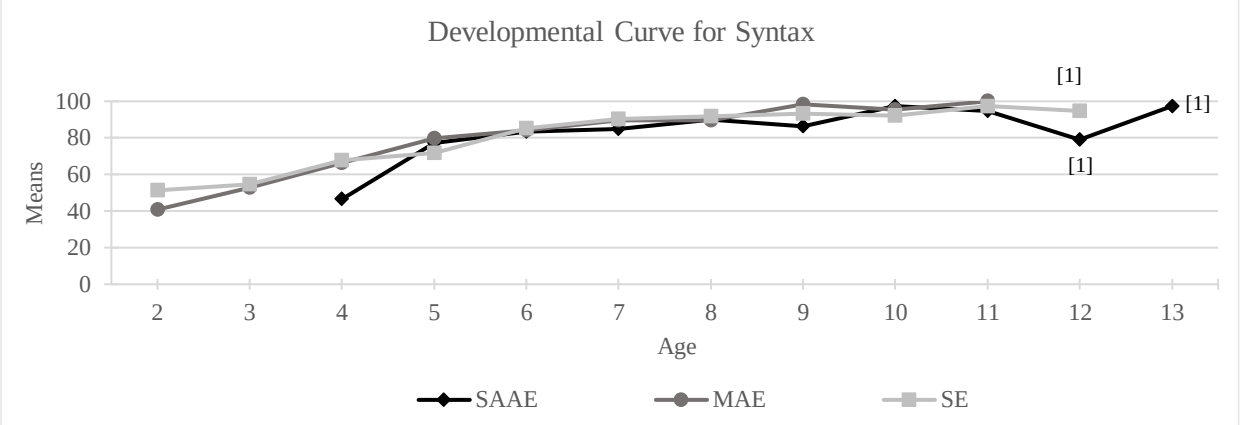

Figure 4. Results on the participants' performance per age with syntax

MAE-speaking children present higher accuracy rates than the two other groups before age 7 for the domain of Pragmatics (Figure 5). From age 7 onward, the three groups' performance is more comparable. Statistical analysis, however, revealed that *age* F(1,11) = 12.0 p = .<001, η^2 =.41 and *linguistic variation* (F(1,2) = 4.3 p = .022, η^2 =.20) individually were significant factors for the participants' performance with Pragmatics. We did not find an *interaction* between *age* and *linguistic variation*: $F(1,17)$ = 1.3 p = .230, η^2 =.10, however.

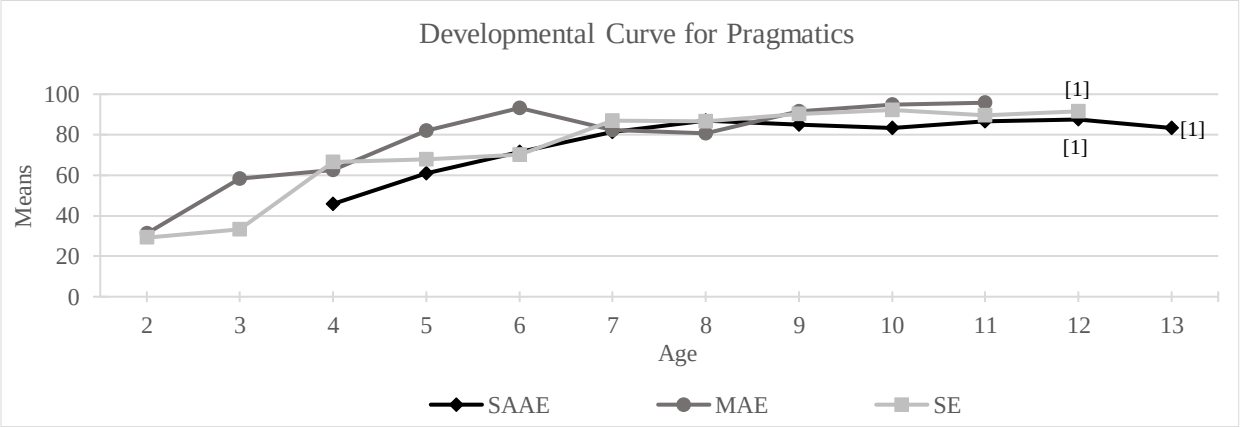

Figure 5. Results on the participants' performance per age with pragmatics

Figure 6 shows that the three participant groups presented a relatively parallel performance with Semantics. However, the SAAE group was slightly lagging behind across all ages, with the exception of 8- and 10-year-olds. Notice that none of the groups reached full competence. A univariate ANOVA for with the participants' *performance* with Semantics as the dependent variable, *age* as the independent variable and *linguistic variation* as the random factor revealed that *age*, $F(1,11)$ = 18.9 p = .<001, η^2 =.82, and *linguistic variation*, $F(1,2)$ = 9.4 p = .<001, η^2 =.22, surfaced statistically significant differences independently, but there was no *interaction* between *age* and *linguistic variation*, $F(1,17)$ = 51 p = .948, η^2 =.04.

The phonology section of the *DELV-NR* mainly tested the participants' production of consonant clusters. Results revealed that the three groups' performance is slightly variant across almost all ages *(*Figure 7*)*. Statistical analysis of the participants' phonological abilities showed that while *age* significantly affected our participants' performance, $F(1,11)$ = 5.4 p = .<001, η^2 =.57,

linguistic variation, $F(1,2)= 2.0$ $p = .151$, $\eta^2 = .06$, did not. There was also no *interaction* between *age* and *linguistic variation*, $F(1,17) = .53$ $p = .935$, $\eta^2 = .05$.

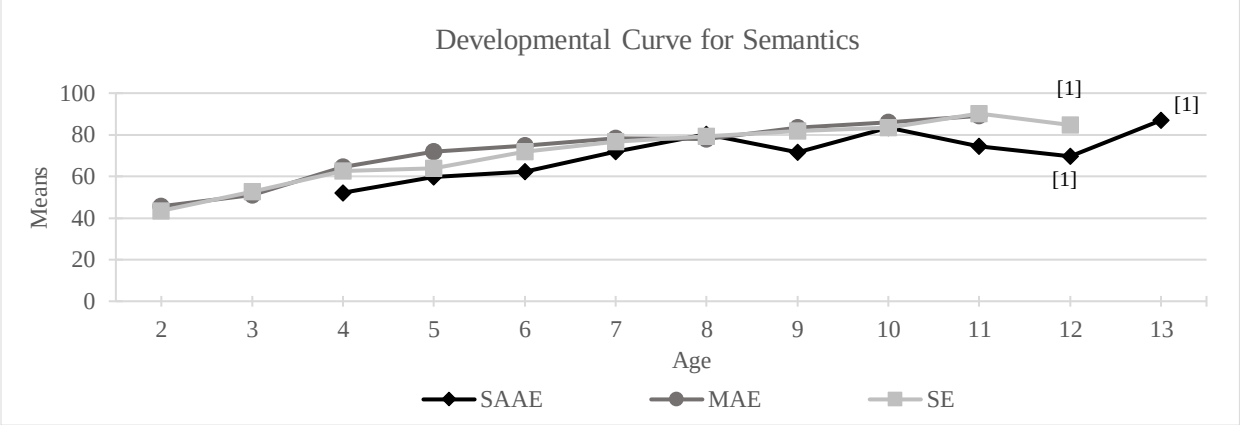

Figure 6. Results on the participants' performance per age with semantics

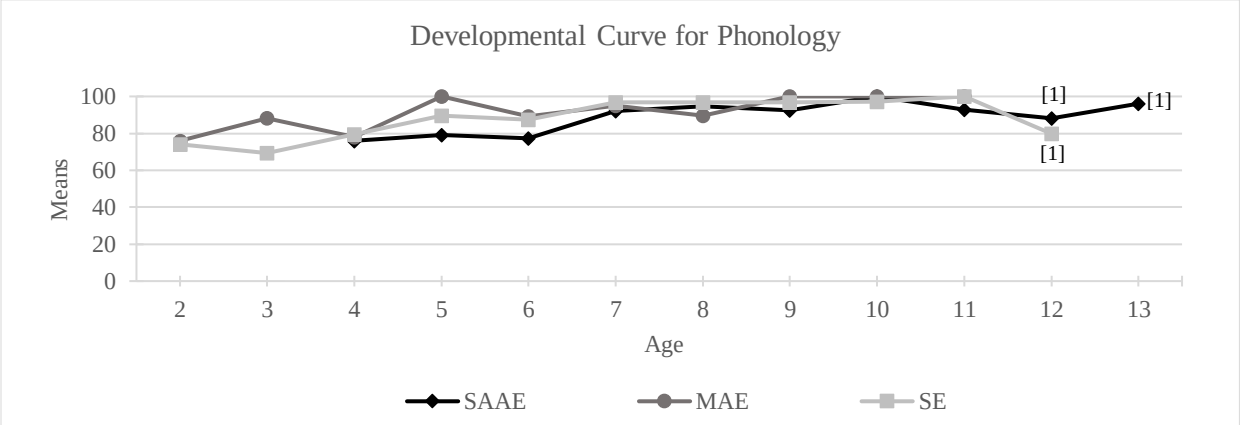

Figure 7. Results on the participants' performance per age with phonology

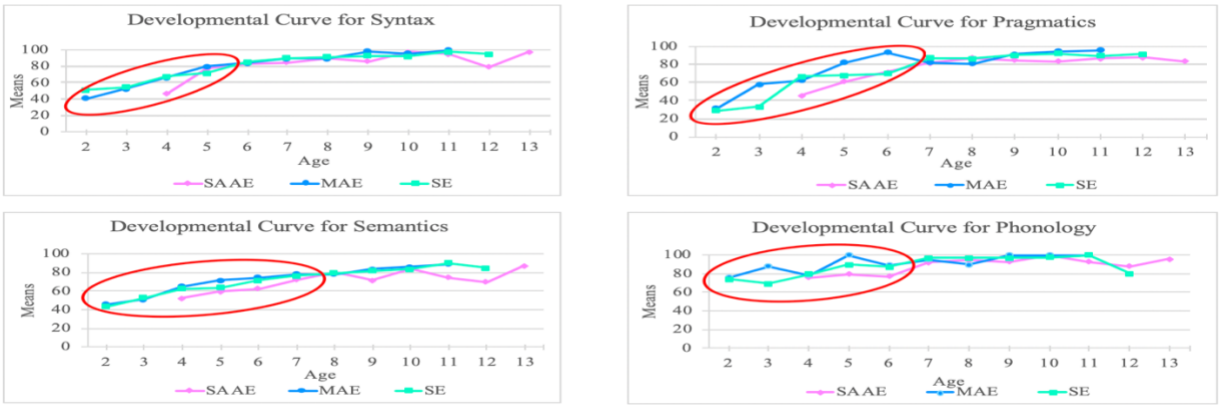

Figure 8. The participants' performance across age for the four linguistic domains.

An overview of the 4 graphs, repeated above under Figure 8, reveals a fairly parallel performance across age for all four domains, with minor deviations, especially with SAAE-speaking children, before age 5 for syntax and semantics and age 7 for pragmatics and phonology. Age 5 is typ-

ically 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.

Next, we provide examples of the participants' productions. Examples include some instances where a participant's production (a) matched the targeted or expected structure, and (b) did not match the target.

(1) Prime part 1.1: 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*

(2) Prime part 3.1: Sally was going to eat a banana, but first she had to take something off it. **What did she take off it?**
Answer: the peel *CA: 8.4, SE-speaker*
a yellow thing *CA: 5.8, SE-speaker*

(3) Prime part 6.9: The nurse is feeding somebody. **Ask** me the right question, and I'll show you the answer.
Answer: Who is she feeding? *CA: 6.10, AAE-speaker*
The nurse is feeding her patient. *CA: 10.6, MAE- speaker*

(4) Prime part 7.1: The man **isn't walking**, he's…
Answer: crawling *CA: 3.4, SE-speaker*
using his hands *CA: 3.10, SE-speaker*

(5) Prime part 8.11: She's **not looking at** the radio, she's listening . . .
Answer: to the radio *CA: 8.11, AAE-speaker*
to the sea *CA: 4.10, SE-speaker*

(6) Prime part 12.13: **tractor** /træktɚ/ ⇝ [træktɚ], [trætɚ], [tætə]

(7) Prime part 12.18: **skunk** /skʌŋk/ ⇝ [skʌŋk], [stʌŋk]

4. Discussion. The current study had two main objectives: (a) to examine language development across Southern English, Southern African American English and Mainstream American English —three varieties of English which co-exist in most communities in the American South—in four key linguistic domains: *syntax, semantics, pragmatics, phonology,* and (b) to produce developmental trajectories across different ages for these three varieties, in the four tested domains, in order to identify any potential deviations and problematic performance across age. Results evidenced a comparable performance across the four domains; the highest accuracy rates were recorded with phonology and the lowest with semantics. The developmental trajectories plotting the participants' performance across age, revealed a small variability across the three groups, especially with our younger participants. Specifically, we find a virtually identical performance from age 7 onward for pragmatics and phonology and age 5 and up for syntax and semantics. Minor variations across groups were not important enough to yield a statistically significant interaction between *age* and *linguistic variation.* However, linguistic variation was a significant factor for the participants' performance with pragmatics and semantics. Linguistic variation was non-significant for the participants' performance with syntax and phonology, suggesting that the three groups' performance across age with those domains was parallel. 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 Ameri-

can English acquire language at parallel chronological ages, with minor, yet non-significant, variations. Additional analysis revealed no correlations between performance and the parents' educational background.

Even though our data on SAAE-speaking children is limited before the age of 5, and therefore cannot really contribute to the discussion put forth by Cole (1980) and Steffensen (1974), what we observe with the data presented by the current work is that the three groups do present parallel performance across the four domains after the age of 5 or 7 depending on the domain, when the test used to evaluate their linguistic competence does take into consideration variation-specific characteristics. Therefore, it appears that none to their variation-specific characteristics have influenced the groups' performance with any of the four domains, which was expected, as the diagnostic eliminated or excluded variety-specific differences.

What is evident from the results presented by the current work is that the two groups, SE- and MAE-speaking children, especially the latter, who have access to early education at a much younger age than most of our SAAE-speaking children, did present a higher performance between the ages of 2- to 6-years-old. What is also clearly shown by the four developmental curves, however, is that once our SAAE-speaking group entered an educational setting and were systematically exposed to language within a structured learning environment they were able to quickly catch up and their performance was practically indistinguishable from that of their peers. Therefore, we conclude that the differing performance for younger ages is a result of lack of opportunities for early education and is independent of the variety of English spoken by the children.

Based on results presented by prior research, we predicted that (a) low accuracy means across the four domains for SAAE- and SE-speaking children and (b) significant differences across groups in their performance with the four linguistic domains. Contrary to our predictions, this work reports relatively high rates of accuracy for all three groups across all domains, with semantics lagging slightly behind. The results from the current study confirm that the reservations expressed by the C&T (2021) study, concerning the rates of high risk for language disorder, were justified. We hypothesised that gaps in the acquisition of grammar created by limited early exposure to an educational setting or structured linguistic instruction through certain types of activities, as for example, story-time, phoneme-to-grapheme matching etc., before the age of 5 'allow' the *DELV-ST* to over-screen and produce some false-positives, resulting in unnaturally high rates of risk for language disorder, especially for the SAAE-group. A meta-analysis of results from the current study and C&T (2021)—as they are both parts of a bigger project—reveals that some children were incorrectly flagged by *DELV-ST* as exhibiting medium-high or highest risk for a language disorder, and did, in fact, show age-matched performance with the *DELV-NR*. More explicitly, the percentage of children that are at risk for a language disorder is considerably reduced after the completion of the analysis of the data collected from the *DELV-ST* and the *DELV-NR*. Percentages of risk for a language disorder drop from **60.5%** to **33%** for SAAE-speaking children, and from **37.6%** to **28%** for SE-speaking children. The (reduced) percentages of potential risk for a language disorder obtained from the current study reflect the rate of children who **consistently** did not match the expected performance of the average for their equivalent chronological age for each domain.

Despite the considerably lower rates of risk for language disorder noted above, when compared to the ones presented in C&T (2021), our initial conclusion as presented in C&T (2021), that lack of early education has a considerable effect on the linguistic abilities of the children, appears to be well-founded, Firstly, overall percentages of risk for a language disorder are still high, and secondly accuracy rates for younger ages are particularly low, especially for our SAAE group. In sum, results from the *DELV-NR* help clarify what the actual percentage of risk for language disorder

might be for these three groups, and potentially children growing up in the state of Mississippi, but they still raise serious concerns regarding the existence and efficacy of the current early education and clinical/intervention protocols, compared to other areas of the country where such programs are readily available. These results suggest a need for more inclusive academic testing—which considers dialectal variations—as well as better opportunities for early education, early diagnosis and early clinical intervention. This recommendation is further supported by the fact that Mississippi currently ranks among the bottom 2–3 States in terms of educational programs and academic achievement. This study is not the first to identify problems stemming from the educational resources available to AAE-speaking children. For example, McWhorter (2017) expressed that the quality of the schools that AAE-speaking children attend, in combination with the environment and disadvantaged communities they are surrounded by growing up, may play a significant role to the AAE-speaking children's poor school performance.

5. Conclusion. The current work is the first to document the language development, across four linguistic domains, of 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, raised in the same community. Results from the current study show comparable performance with *syntax, pragmatics, semantics* and *phonology* across the three groups, as well as parallel development of the four domains across age, after children enter school. Given that the linguistic phenomena and the language/experimental items incorporated in *DELV-NR* have been designed to take into consideration dialectal variations, we hypothesize that the SAAE-speaking group seem to be lagging behind before age 5 or 6 in all domains most likely due to lack of opportunities for early education. Consistency in high rates of risk for a language disorder across C&T (2021) and Moland & Oetting (2021), among others, and the current work—though considerably reduced in relation to the first two—seem to point toward a critical need for a re-evaluation of the existing academic testing, as well as the educational and clinical assessment practices currently in place in Mississippi.

Results from the current study could 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.These newly formed tools could be used to assess the linguistic abilities of children in the State of Mississippi but also perhaps the linguistic abilities of children speaking non-mainstream varieties of English in general, both nationally and internationally.

We are currently in the process of analyzing individual grammatical phenomena from: (a) the *DEVL-NR* (comprehension of *wh-* questions and passives (in preparation, presented at the 2023 *90th SECOL*), determiners, quantifiers, etc.), (b) data from four narratives, as well as comprehension *of wh- questions* accompanying each story, and (c) data from SAAE- and SE-speaking individuals diagnosed with Down Syndrome. Upon completion of data analysis from this entire project we will potentially be able to closely look at a large variety of specific linguistic phenomena and identify any specific linguistic challenges with particular areas of language development, and potentially clarify which production effects are variation-specific and which are the outcome of language impairment for our populations, information critical for diagnosis and intervention. 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/f56tm5.

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

Christodoulou, Christiana & Ianthi M. 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/BUCLD45-13.pdf

Christodoulou, Christiana, Ianthi M. 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, Oxford, MS.

Cole, Lorraine T. 1980. *A developmental analysis of social dialect features in the spontaneous language of preschool black children*. Evanston, IL: Northwestern University dissertation.

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(1). 212–222. https://doi.org/b2r6m9.

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 A. 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.

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

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

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

Green, Lisa J., 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/d6mh7r.

McWhorter, John. 2017. *Talking Black, talking Black*: *Truths about America's lingua franca.* New York: Bellevue Literary Press.

Mills, Monique T., Leslie C. 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/f2dh.

Moland, Christy Wynn & Janna B. 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/j8hr.

Newkirk-Turner, Brandi L. & Lisa J. 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.

Newkirk-Turner, Brandi L. & Lisa J. 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.

Oetting, Janna B. 2015. Some similarities and differences between African American English and Southern White English in children. In Jennifer Bloomquist, Lisa J. Green & Sonja L. Lanehart (eds.), *The Oxford handbook of African American language*, 512–525. Online: Oxford Academic.

Oetting, Janna B. & Janet L. McDonald. 2001. Nonmainstream dialect use and specific language impairment. *Journal of Speech, Language, and Hearing Research* 44. 207–223. https://doi.org/djw8dn.

Roeper, Thomas. 1999. Universal bilingualism. *Bilingualism, Language and Cognition 2*. 169–186. https://doi.org/10.1017/S1366728999000310.

Roy, Joseph, Janna B. Oetting & Christy Wynn 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/j8hw.

Seymour, Harry N., Thomas Roeper & Jill de Villiers. 2005. *Diagnostic evaluation for language variation norm referenced*. San Antonio, TX: The Psychological Corporation.

Seymour, Harry N., Thomas Roeper & Jill de Villiers. 2003. *Diagnostic evaluation for language variation screening test*. San Antonio, TX: The Psychological Corporation.

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.

Smith, Shana L. & Monica Bellon-harn. 2015. Rates of auxiliary *is* and *are* in African American English speaking children with specific language impairment following language treatment. *Clinical Linguistics and Phonetics* 29(2). 131–149. https://doi.org/10.3109/02699206.2014.966394.

Smith, Shana L. 2014. *Emergence of auxiliary* is *and* are *in AAE dialect-speaking preschoolers with specific language impairment following language treatment*. Beaumont, TX: Lamar University MA thesis.

Steffensen, Margaret. 1974. *The acquisition of Black English*. Urbana-Champaign: University of Illinois dissertation.

Washington, Julie A. & Holly K. 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/bn9g4v.

Wyatt, Tonya. 1995. Language development in African American English child language. *Linguistics and Education* 7(1). 7–22.