INFLUENCE OF EXAMINER DIALECT ON A BIDIALECTAL SPEAKER WITH APHASIA

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ABSTRACT

This study investigated whether there was an impact of examiner's dialect on the quantity and quality of narrative discourse in a bidialectal African American with mild aphasia. We hypothesized that there may be a cognitive cost when responding to the examiner by code switching from African American English (AAE) to General American English (GAE) for bidialectal people with aphasia. We elicited story retell and personal narratives on two separate occasions under two conditions: one where the examiner spoke exclusively using GAE and the other where the examiner spoke exclusively in AAE. These narratives were analyzed for differences in the density of nonmainstream forms of AAE, amount of verbal output, local cohesion errors, and information content. There was a higher density of nonmainstream forms of AAE overall in the personal narrative task in both conditions as opposed to the story retell task. In addition to the density of nonmainstream forms of AAE, there was also a difference in the variety and the type of nonmainstream forms of AAE produced. While there were no substantial differences between the two conditions with respect to the amount of information conveyed, there were observable differences in the quality of the narratives, specifically an increase in local cohesion errors in the GAE condition. The results of this study suggest it may be important to consider the impact of task demands and linguistic context on narrative discourse in bidialectal people with aphasia.

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Chapter One: Review of Literature

African Americans, Stroke, and Aphasia

Research has consistently shown that African Americans are at a higher risk for stroke than White Americans, which subsequently means a higher risk for aphasia (Alkadry et al., 2011). Aphasia is an acquired inability to understand or formulate speech and language after stroke or brain damage. African Americans have a higher incidence and mortality rate from stroke, take longer to recover and have lower levels of functional independence than White Americans (Ellis & Peach, 2017). This is also true for other recovery aspects.

Wertz et al. (1997) conducted a study comparing severity, improvement, and rate of improvement between African Americans and White Americans with aphasia post stroke. They reported that at 48 weeks post-onset, after both groups had received treatment, African Americans with aphasia performed significantly lower than White American aphasic patients on the PICA Gestural and Graphic modality scores.

Ellis and Peach (2017) examined racial and ethnic differences in persons with aphasia (PWA) using the Western Aphasia Battery (WAB) (Kertesz,1985). They concluded despite there being no racial difference associated with the type or severity of aphasia and controlling for differences in age and education, African Americans with aphasia displayed lower word fluency and auditory comprehension (for words and sequential commands). The reasons for these discrepancies were unclear. They concluded that ethnic differences must be considered in clinical management.

Molrine and Pierce (2002) conducted a study comparing the results of several frequently used aphasia assessments. They compared the performance of African Americans and White Americans without brain damage or aphasia on the WAB, Boston Diagnostic Aphasia Examination (BDAE) (Goodglass et al., 2001) and the Minnesota Test of Differential Diagnosis of Aphasia (MTDDA) (Schuell et al., 1962). They affirmed few or no African American adults have been included in normative samples for tests of aphasia nor have the assessment batteries been evaluated for racial bias. They asserted it is imperative to compare the performance of African Americans with aphasia to neurotypical African Americans in order to eliminate this bias. In most clinical neuropsychological research studies, there is a tendency to evaluate and define the behavior of African Americans and other ethnic minorities against a standard determined by the normative behavior of White Americans. Molrine and Peach found racial differences in; word reading (BDAE), animal naming (BDAE and WAB) and paragraph retelling (MTDDA), which are all measures related to verbal fluency. These differences were not found to be associated with age, gender, or social network strength, and the differences in verbal fluency were within the range of typical performance. Ulatowska et al. (2003) sought to assess the relationship between performance on standardized testing and discourse measures as well as the presence of African American English in PWA. They found performance on discourse tasks were more aligned with the language ability of the person as opposed to their performance on the WAB.

African American English and Aphasia

Speech-language pathologists are expected to provide clinical services designed to fit the individual needs of every client regardless of social, economic, cultural or linguistic background. In the case of dialect this is extremely relevant especially for people with aphasia (Wallace, 1996). In the United States, many African Americans speak a unique ethnic dialect, African American English (AAE), although the nuances of that dialect may differ based on regional differences, early research about AAE primarily focused on fully understanding the dialect. There is a need for research that focuses on treatment geared towards diverse culturally linguistic backgrounds.

There is relatively little empirical research addressing issues of AAE and aphasia. Ulatowska and Olness were early pioneers in research regarding how aphasia manifests within AAE. Ulatowska and Olness (2001) compared discourse of African Americans with aphasia and African Americans without aphasia searching for nonmainstream forms of AAE. General American English (GAE) and AAE share many forms. GAE is the mainstream dialect used in America. GAE is spoken in educational and professional settings. The forms that are present in AAE but not present in GAE are referred to as nonmainstream forms of AAE (Oetting, Gregory & Riviére, 2016). Ulatowska and Olness stated using discourse tasks allows observation of grammatical and stylistic nonmainstream forms in AAE that may not be captured or are masked by traditional language impairment and functional communication measures. The investigators collected three different language samples in two different conditions. Their study utilized two examiners (one White examiner and one African American examiner). Participants produced a structured language sample and unstructured language sample. Participants were asked to retell an Aesop's fable and describe a story depicted in pictorial form for the structured language task.

All the examiners spoke GAE during the elicitation of these samples. Only one participant used a feature of AAE during the structured language task.

Ulatowska and Olness (2001) stated structured tasks such as story retell and picture description create an artificial socio-pragmatic condition which may not invite the use of the dialect in a natural way. They hypothesized that dialects other than the standard dialect for a language are typically reserved for more informal settings, personal topics, and familiar communication partners. Ulatowska and Olness suggested that if one is interested in the manifestations of the effects of aphasia in non-standard dialectical forms, one first needs to elicit the language in a context which invites the use of the dialect. They stated personal narratives of frightening experiences when elicited by another speaker of AAE are likely to invite the use of AAE. To elicit the unstructured language task or personal narrative in their study, the African American examiner produced nonmainstream forms of AAE during interviews with two-thirds of the participants and a white examiner who spoke a Southern American English dialect to the remaining one-third. All groups of African American participants produced nonmainstream forms of AAE during this task. Yet, only one participant produced a narrative with nonmainstream forms of AAE under the structured language task. They also revealed that African Americans with moderate aphasia produced less verb forms and produced shorter narratives, but those individuals who produced more nonmainstream verb forms of AAE also produced longer narratives.

It is important to note that one's socio-economic status influences the use of grammatical nonmainstream forms of AAE. In contrast, phonological variables often are consistently used regardless of socioeconomic class. Ulatowska and Olness found no specific differences in the use

of dialects based on the examiners race, however they did not formally control for dialect. The impact of utilizing an examiner who shares the same dialect while eliciting a story retell task has yet to be explored. This yields the question, "If the examiner used AAE dialect during the structured tasks would there have been more verbal output overall and/or more nonmainstream forms of AAE demonstrated by African American PWA?"

In a subsequent study, Olness and Ulatowska et al. (2002) explored the impact of various types of stimuli on the production of AAE in PWA. They compared discourse elicitation of African Americans and White Americans with and without aphasia when prompted by picture description, story retelling, and personal narratives. Their sample included thirty-three African Americans and twenty-nine White Americans with aphasia as well as thirty African American and thirty-two White American neurotypical controls. They found that both African American groups produced nonmainstream forms of AAE across all stimulus types, but they occurred primarily in the narrative response genre. They stated they purposefully included the African American neurotypical controls to differentiate between differences associated with aphasia and differences associated with ethnicity. They determined that specific stimuli can more likely prompt the use of AAE than other stimuli and concluded story retell tasks and personal narratives elicited more nonmainstream forms of AAE than other methods of discourse elicitation such as picture description (Olness & Ulatowska et al., 2002). They suggested personal narratives and story retell be used as a measure to obtain a true representation of the PWA's use of dialect.

Collectively Ulatowska and colleagues have found that nonmainstream forms of AAE were present in African Americans with and without aphasia (Olness et al., 2002; Ulatowska & Olness, 2001; Ulatowska et al., 2001; Ulatowska et al., 2003,). This suggests that despite the presence of aphasia, use of a nonmainstream dialect is still evident. Due to the similarities between agrammatism and AAE, this finding is important. An AAE speaker with aphasia might be misinterpreted as being agrammatic, when there is in fact just a language difference. This means it is pertinent that any service provider be familiar with AAE and dialectical variations when conducting an aphasia assessment.

Nonmainstream Forms of AAE

AAE varies from GAE in several ways. Differences occur in the domains of phonology morphology and syntax. Tables 1 and 2, adapted from several sources, (Lee & James, 2018; Cukor-Avila & Balcazar, 2019; Wright-Harp, 2016), presents the main differences in nonmainstream forms of AAE and GAE in those domains. Differences in morphosyntax are especially important to note because both bidialectal and bilingual speakers demonstrate morphosyntactic differences from GAE (Lee & James, 2018).

Table 1: Phonological Variations between General American English (GAE) and

Nonmainstream Forms of African American English (AAE)

<u>Feature</u>	*GAE Example	**AAE Example
Consonant Reduction in Syllables	Hand	Han
Ing Cluster Reduction in alliterations	He's running fast	He's runnin' fast
Initial /th/ and /d/	them	dem
Deletion of middle and final /r/	alright	aiight
Final /th/ and /f/	mouth	mouf
Final consonant deletion	fast	fas

*GAE- General American English; **AAE- African American English

Table 2: Morphosyntactic Variations between General American English (GAE) and

Nonmainstream Forms of African American English (AAE)

<u>Feature</u>	GAE Example_	AAE Example
Zero Copula (omission of copula)	You are happy	You happy
Multiple Negatives	He does not know anything.	He don't know nothing
Past Tense Marker Omission	He lived in Kentucky	He live in Kentucky
Habitual be	Its always hot	It be hot
Omission of Third Person Plural	She goes to UH	She go to UH
Past tense from was/were	We were at the park	We was at the park
Omission of noun possessive	That's the woman's purse	That the woman purse
Omissions of Third-person singular present-tense marker	She walks home	She walk home
Other mission of forms of to be	She is a nice woman	She a nice woman
Lack of distinction between	I thought I went downstairs.	I thought I had went downstairs
preterite and irregular past		
participle form		

Code switching and Bilingual Aphasia _

Code switching is defined as a process of shifting from one linguistic code (i.e. a language or dialect) to another depending on social context or conversational settings. (Craig & Washington, 2005). Although it is difficult to fully understand the socio-pragmatic rules involved in codeswitching, it is largely affected by the overall interaction and content of a communication partner (Ulatowska & Olness et al., 2001). Speakers of AAE must learn to code switch between AAE and GAE because GAE is the dialect most used in academic settings (Agerton & Moran, 1995). Code switching is an indication of a speaker's awareness of social factors like setting, topic, and language background of the communication partner (Neumann, Walters & Altman, 2016). For PWA, code switching may have an impact on their ability to communicate more functionally.

In a study comparing narrative discourse of four bilingual Spanish-English PWA to four neurotypical bilingual Spanish-English speakers, researchers found that both groups demonstrated language mixing, but there was a greater frequency of code switching patterns for the PWA (Neumann, Walters & Altman, 2016).. Bilingual PWA used code switching as a mechanism to maintain fluency or compensate for differences in lexical access. It was suggested that there is a greater reliance on both languages and codeswitching after a stroke or neurologic injury as an attempt to improve fluency (Munoz et al., 1999). There have been several studies that support the view that bilingual PWA use codeswitching as a tool to aid in fluency. Neumann, Walter and Altman (2016) found that when a bilingual PWA is unable to find lexical access to a word in one language, they can supplement it by accessing that word in the other language. For example, if a bilingual English-Spanish PWA were having trouble accessing the word "shoes," they could supplement it by saying the word "zapatos." This in turn makes them more fluent.(Neumann, Walters & Altman, 2016). Research has recently found a relationship between bilingualism and the enhancement of cognitive systems, specifically executive control and language. This enhanced executive function may be what gives a bilingual PWA the ability to supplement their fluency through code switching (Neumann, Walters & Altman, 2016).

According to recent research regarding bilingual children, code switching has also been shown to be beneficial and helpful to children in various contexts for very different reasons (Craig et al., 2009). Antoniou et al. (2016) explored whether bidialectal children also gain cognitive benefits from codeswitching. They compared the cognitive abilities and executive function of bilingual and bidialectal children. They concluded that there are similar cognitive advantages for bidialectal children as there are with bilingual children. This suggested that dialect use and code switching between AAE and GAE can also be beneficial to the bidialectal child (Lee-James & Washington, 2018). The use of codeswitching as a tool to improve fluency, found in research in bilingual PWA, and research about bidialectal children may form a basis for understanding how this may affect African American PWA (Altman et al., 2012). Ulatowska & Olness et al. (2001) suggested due to the disparity in research regarding bidialectalism and aphasia that similar research focused on bidialectal children could assist in filling this gap.

Code switching has also been shown to create an increased cognitive demand. According to Green and Wei (2014) there is a control process that takes place while code switching. They refer to this as a control process model. While communicating a person who is bilingual or bidialectal has both languages and/or dialect coactivated. Depending on the context of the

conversation one language and/or dialect has to be inhibited while the other is activated. If the competing language/dialect has not only lexical but syntactic differences, then the syntactic forms as well as lexical forms have to be inhibited while the other code is activated. This simultaneous process of inhibiting and coactivating can create an increased cognitive demand on a speaker (Green & Wei, 2014). Although code switching can aid in lexical retrieval, it is unknown if there is a negative impact for a bidialectal PWA. If this person is more comfortable with AAE than GAE and is forced to code switch because of the formality of the context of standardized assessment, does this effect their overall performance? Could this increased cognitive load be more evident after brain injury or stroke?

Communication Partners and Aphasia

Communication partners (the person listening and actively engaged with the PWA at the time) can invite the use of code switching. When interacting with a communication partner that shares a linguistic code, it invites the speaker to also use that linguistic code. Communication partners may also have an impact on the way PWA respond or communicate (Harmon et al., 2019). For healthy adults without aphasia as well as adults with aphasia, poor partner responsiveness has been shown to increase the stress response, which in turn reduces verbal fluency. However, when a communication partner is attentive and responsive, verbal fluency improves (Harmon et al., 2019). These findings underscore the potential importance of the quality of the communication partner's communication and its influence on the fluency of PWA. The influence of the dialect of the communication partner on the communication of PWA has yet to be explored. Ulatowska & Olness et al. (2001) concluded that the use of

nonmainstream dialects is largely conditioned by the overall interaction and discourse content, the ethnic and regional origins of the conversational partner and nature of the relationship between the speaker and the communication partner. If comfortability and the communication partner have a large effect on persons without aphasia, it is hypothesized that this same effect will occur for PWA.

Agerton and Moran (1995) conducted a study on preschoolers with a similar question. They utilized three different examiners; One white examiner who spoke GAE, one African American examiner who spoke GAE, and one African American Examiner who spoke AAE. They elicited language samples from 17 preschoolers using single-picture tasks. First the examiner told their own narrative using their assigned dialect, then elicited the child to tell their own story. They found that nonmainstream forms of AAE were more prevalent with the African American examiners than the White examiner. Furthermore, the children produced more nonmainstream forms of AAE with the African American examiner who was speaking AAE over the African American examiner speaking GAE. They indicated this could be due to comfortability with the examiner.

Our study aims to investigate the effects of dialect of the communication partner on the quality of language samples and verbal outputs of PWA. If the communication partner shares the dialect of the PWA will they produce more nonmainstream forms of the dialect and/or more verbal output overall? Furthermore, could the difference in verbal fluency reported by Ellis and Peach (2017), be mitigated by encouraging the use of AAE?

Study Questions:

The study aims to answer the following questions:

- Is there a difference in verbal output and efficiency in a PWA who speaks AAE when they are speaking with an examiner who also speaks AAE? If a bidialectal PWA is speaking with someone who shares the same dialect, verbal output should increase as indicated by increases in: total number of words, total number of utterances, mean length of utterance.
- Is there a difference in the quality in verbal output in a PWA who speaks AAE when they are speaking with an examiner who also speaks AAE? If there is an impact of dialect you potentially would see increased verbal output as indicated by differences in: the number of correct information units, the cohesion of the narrative and the number of main concepts.

Hypothesis & Predictions:

1. There is no impact of the examiner's dialect on the quantity and quality of nonmainstream dialectical forms present in the narrative discourse of people with post-stroke aphasia.

1a: If the communication partner speaking in a dialect "invites" the use of that dialect more strongly than a communication partner speaking in a different dialect, then there will be an increase in the density and types of the nonmainstream forms of AAE when there is no examiner-speaker dialect mismatch. 1b: If there is an impact of the examiner's dialect on code switching, you will see differences in the quantity and quality of nonmainstream forms of AAE when there is a mismatch between the dialect spoken by the examiner versus the preferred dialect of the person with post-stroke aphasia.

2. There is no impact of examiner dialect i.e. General American English (GAE) versus African American English (AAE) on verbal output of narrative discourse in African Americans with aphasia who speak African American English (AAE).

2a: If there is a cognitive cost to responding to the examiner by code switching from AAE to GAE in response to the examiner speaking in GAE, you would see a decrease in verbal output in narrative discourse.

2b: If there is a cognitive cost to responding to the examiner by code switching from AAE to GAE in response to the examiner speaking in GAE, you would see decreases in the information content of narrative discourse and the amount of verbal output produced during narrative discourse, increase in local cohesion errors, and decrease in correct information units.

Due to the global pandemic data was collected via tele practice. Videoconference assessments have been proven to be as reliable as in person assessments. The WAB was administered via video conference to participants ranging from age 26 to 75 years. The scores over videoconference highly correlate with the in-person assessment, there were little effects on the outcome of that study (Dekhtyar et al., 2020), supporting the use in the current study.

Chapter Two: Methods

Inclusion and Exclusion Criteria

The study is a descriptive single case study. Informed consent was obtained from the participant as approved by the institutional review boards for University of Houston.

Inclusion criteria for the study were the following:

- Bidialectal (AAE and GAE) African American adults
- Previous history of mild to moderate post-stroke aphasia
- Aphasia diagnosis and severity was confirmed by administering the Quick Aphasia Battery (QAB) and assessing conversational discourse

Exclusion criteria for participant:

- Individuals with severe non-fluent aphasia or fluent aphasia with auditory comprehension impairment.
- Individuals who do not report having a history of speaking AAE
- Individuals who are not African American
- Individuals not from the Southern United States

Past use of dialect was determined by self-report during phone screening. Individuals who have severe non-fluent aphasia or fluent aphasia with auditory comprehension deficits for simple, canonical sentences, or do not report a history of having spoken AAE dialect were excluded from the study. Recruitment efforts, local hospitals and clinics, as well as the University Speech-Language-Hearing Clinic and the UH satellite clinics yielded very few potential subjects over a four-month period, likely secondary to the pandemic. Two potential subjects completed the screening process but did not qualify for the study: one did not qualify because they spoke another dialect other than AAE and GAE and the other did not qualify due to being bilingual and having other underlying neurological conditions. For this reason, this study was conducted as a single case, within subject design. Due to the global pandemic, all data were collected via telepractice. All Zoom licenses are encrypted by the university to ensure safety of the participant. The sessions were recorded for analytical purposes.

Experimental conditions

The study was conducted under two conditions. The participant was interviewed by an African American examiner across both conditions. The participant was shown six videos in total. In the first condition, the examiner showed a wordless video to the participant. Following presentation of the video, the participant was shown a prerecorded video model of the examiner summarizing the video that was just presented using only forms of GAE (all interactions with the participant were conducted only using GAE). The model narrative scripts can be found in Appendix C. Following presentation of the model narrative, the participant was shown a different wordless video of similar length and number of actions to the model, but different in content. This was used as the stimulus for the participant's language sample. The participant was asked to retell the contents of the that video. Following collection of this language sample, the participant was prompted to tell a personal narrative. Following a week's time, the second data collection session took place. In the second data collection the process was repeated with novel wordless videos, also calibrated for length and number of actions: The participant was shown another wordless video, followed by a prerecorded model video of the examiner retelling the narrative of the wordless video using nonmainstream forms of AAE. The participant was then shown another wordless video that was used as the stimulus for the AAE language sample. The participant

retold the contents of this video. Following collection of this language sample, the participant was prompted with the examiner using non mainstream forms of AAE to tell a personal narrative.

Stimuli

Prior to data collection wordless videos were selected based on similarity and length. The videos were edited for an equal number of actions and main concepts. There were two tasks used to elicit narrative discourse at each timepoint/condition: a story retelling and a personal narrative, under two different conditions AAE and GAE. During the story retelling, the participant was shown two wordless videos "Ormie the Pig" (Jam Filled, 2010) under the GAE condition and "Partly Cloudy" (Pixar, 2009) under the AAE condition. Following this, the participant watched a second video of the examiner summarizing the story to model the task and invite the use of the assigned dialect. The examiner summaries were presented as a recording to ensure consistency in the use of the assigned dialect. The AAE model recording contained a nonmainstream form of AAE in every utterance. The GAE model recording contained no utterances with nonmainstream forms of AAE. The participant was randomly assigned to begin under the GAE condition. Following presentation of the model, the first language sample was obtained from the participant retelling a different wordless video "For the Birds", (Pixar, 2000). The participant was then asked to tell a personal narrative of his favorite holiday memory to obtain a second language sample. This concluded data collection for session one. After a one-week gap, the participant returned for data collection session two, where the same procedures were followed, only this time the examiner spoke and modeled the AAE dialect. The participant was then shown "Pigeons" (Phillip, 2010) and elicited to retell the story. The participant was then prompted to tell a personal narrative of their least favorite memory. Narratives were audio and video recorded

for later transcription and analysis. The participant was recorded via zoom, with an encrypted license in order to protect his identity and information. The recordings were be uploaded to Microsoft SharePoint and encrypted with a password. A total of four language samples were collected and analyzed.

Transcription, Coding, and Analysis

To analyze the language samples the examiner transcribed all narrative samples orthographically. The orthographic transcription can be found in Appendix A. The samples were then broken into utterance boundaries as outlined in the CHAT manual (MacWhinney, & Wagner, 2000). These coded transcripts can be found in Appendix C. An utterance was defined as a the smallest unit of connected speech with meaning. The utterances were not defined based off of pauses, but off of independent and dependent clauses. Automatic phrases were also counted towards the word count. The utterances were then coded and analyzed using CLAN (MacWhinney & Wagner, 2000) software. CLAN identified the mean length of utterance (MLU), Unit Count (UC), total number of utterances (TNU), total number of words (WC). All nonmainstream AAE forms in the sample were identified and the density of nonmainstream AAE forms divided by the total number of utterances.

Correct Information Units

The samples were also analyzed for Correct Information Units (CIUs). Correct information units are words that are intelligible in context, accurate in relation to the picture or topic, and relevant to and informative about the content of the topic (Nicholas & Brookshire, 1993). Each CIU is a

word, but not every word in a language sample is a CIU. Articles and words that do not add content are not considered CIUs. If a person remains on topic and produces an informative narrative they will obtain a high percentage of CIUs. CIUs were obtained by calculating the total number of content and function words in the word count that were pragmatically appropriate, divided by the total WC.

Local Cohesion

Stroke can affect the cohesion of narrative discourse which results in a communication breakdown or a cohesion error in people with and without a diagnosis of aphasia (Barker, Young, & Robinson, 2017). Cohesion is defined as the structural and lexical connectivity of continuous utterances in a narrative (Andreeta & Marini, 2014). The cohesion of the narrative is important for understanding the overall message of the speaker. Cohesive ties connect continuous utterances. A word is considered a cohesive tie if its meaning cannot be interpreted without understanding how it relates to some other previously given information from the speaker. A misuse of a cohesive tie is defined as a local cohesion error. (Barker, Young, & Robinson, 2017). In this study, there were two types of local cohesion errors analyzed: conjunction errors and missing reference. Conjunction errors occur when a sentence stops abruptly, and the discourse makes a change into an unrelated or off topic utterance (I was walking and brown dog). A reference error or missing reference occurs when a pronoun is incorrect or missing in its entirety and one has no reference for who the speaker is referring to (She gave that to me) (Barker, Young, & Robinson, 2017). All of these instances occur in everyday speech, but when not connected to the content of the story a local cohesion error (LCE)

is produced. The local cohesion score was calculated by counting total number of LCEs and dividing it by the total number of utterances.

Story Themes: Main Concept Analysis

The story retelling narratives were also analyzed for content using a main concept analysis modeled after Kong, Whiteside, and Bargmann (2015). A main concept analysis (MCA) is used to measure how well an individual conveys the gist, or the essential elements, of a story. This measurement has been demonstrated to be able to discriminate between speakers with and without aphasia (Kong, Whiteside & Bargman, 2015). Dalton & Richardson (2019) define a main concept (MC) as an utterance containing one main verb, its constituent nouns, and any associated clauses, which is scored based on accuracy (i.e. all essential information is correct) and completeness (i.e. all essential information is present). The MCA system contains a fourcomponent main concept scale for analyzing the language samples by evaluating whether the main concepts are relevant to the content while also analyzing if information in each main concept mentioned was accurate and complete. The scale per Kong, Whiteside & Bargmann (2015) ranges from 1) Accurate and Complete (AC), 2) Accurate but Incomplete (AI), 3) Inaccurate (IN), and 4) Absent (AB). This accounts for three areas of discourse production: the presence of essential information (independent of the degree of correctness) in a description, the accuracy in providing essential information, and the completeness of essential information given. The main concept score was calculated using the formula:

Four neurotypical bidialectal college educated African American adults were shown the two story retelling stimuli videos. All of the main concepts produced by the neurotypicals were then recorded and transcribed. Following transcription, concepts that appeared in more than one sample were considered a main concept. The formula was then utilized to depict average main concept score for neurotypicals. Then the participant was compared to the neurotypicals main concept score. Percentages were achieved by dividing the score highest achievable score on each main concept. The highest achievable concept score for "*For the Birds*", (Pixar, 2000). 42 (3 x 14 AC). The highest achievable concept for "*Pigeons*" (Phillip, 2010) is 36 (3 x 12 AC),

Measurements

There were no formal statistical analyses completed as this was a single subject descriptive study. The independent variable was the dialect of the examiner during the narrative retell and personal narrative language sample. The dependent measures were the Mean Length of Utterance (MLU), Total Number of Words (WC), Utterance Count (UC), Main Concept Analysis (MCA), percentage of utterances containing AAE, and Correct Information Units (CIU) of the participant's language samples under two conditions. Table 3 contains a detailed definition of each measured variable.

Measure	Definition of Term
Mean Length of Utterance in words (MLU)	Calculated by finding the average amount of
	words per utterance
Total Number of Words (WC)	A total count of all phonologically well-
	formed words without repetitions, and
	unintelligible words
Unit Count (UC)	A total count all verbalizations including
	repetitions, unintelligible, and ill formed
	words
Total Number of Utterances (TNU)	A total amount of utterances as outline in
	CLAN manual
Correct Information Units (CIU)	Total number of content and function words
	in the Word Count that are pragmatically
	appropriate divided by the word count
Main Concept Analysis (MCA)	Calculated by identifying the % of main
	concepts the speaker produced when retelling
	a narrative $Q_{1} = 0$
Local Conesion (LC)	Calculated by counting % of Utterances that
	contain a Local Conesion Error
	Types of Local Cohesion Errors:
	Types of Local Concision Errors.
	-Conjunction Error (CJE): a sentence stops
	abruptly and the discourse makes a change
	into an unrelated or off topic utterance
	-Missing Reference (RE): an error is counted
	when a pronoun is incorrect or missing in its
	entirety
Density of Nonmainstream Forms of	Calculated by counting the incidences of
African American English	nonmainstream forms of AAE divided by the
	total number of utterances

Chapter Three: Results

Participants

Three potential participants responded to the recruitment efforts for this study. Two potential subjects completed the screening process but did not qualify for the study. One potential subject completed a phone screening but did not qualify due to speaking a Caribbean dialect. The second potential subject completed the phone screening and did not qualify due to having other underlying neurological conditions. The third participant, A001, met the screening criteria and was enrolled in the study.

Participant A001 is a 44-year-old right-handed African American self-reported bidialectal AAE and GAE speaker. He was born in Houston, Texas and has resided in Texas his entire life. The participant has a college degree in architecture. He experienced a transient ischemic attack (TIA) in 2017 with reportedly no residual effects. He experienced a left hemisphere cerebrovascular accident (CVA) on December 26, 2020. He was hospitalized for a week following the CVA. His wife reported he had extreme difficulty expressing thoughts, being understood by others, understanding what others were saying, orientation and memory. He received speech therapy services in inpatient rehab for two weeks and was then discharged. He has been receiving treatment from and outpatient clinic since late January. A001 received a 9.7/10 on the QAB. Although this places him within normal limits for this assessment there was overt evidence of word finding difficulties with spontaneous speech that is consistent with a diagnosis of anomic aphasia.

Reliability Measures

A subset of the participant narratives (25%) was transcribed and analyzed by a second rater for reliability purposes. Point to point interrater reliability was completed on local cohesion errors, density of nonmainstream forms of AAE, WC, and CIU. Interrater reliability was calculated using point to point interrater agreement. The percent agreement was calculated by dividing the number of agreements by the total number of observations. The results of this measure are presented in Table 4. Reliability ranged from 84% in reliability for MLU up to 100% for LCE, AAE, and UC

Table 4: Reliability Measures

Rater	MLU	Unit Count	Word Count	TNU	% of CIU	# of Nonmainstream AAE Forms	# of Local Cohesion Errors
Rater 1	11.84	395	96%	32	51%	11	17
Rater 2	9.947	395	94%	38	50%	11	17
Percent Agreement	84%	100%	97%	87%	98%	100%	100%

Verbal Output Measures

Tables 5 depicts the results of all measured verbal output variables under the two conditions. A001 had the highest MLU and the lowest percent of local cohesion errors for the story retell task in the AAE condition (AAE story retelling). He had the highest percentage of complete words (WC) and total number of utterances (TNU) with the personal narrative in the AAE condition. A001 demonstrated the highest amount of local cohesion errors (LCE) on the story retell task in the GAE condition. Both narratives in the AAE condition yielded fewer LCE errors, suggesting better quality narratives in this condition. Conversely, the story retell task in the GAE condition yielded the highest unit count (UC) and main concepts (MC) but also the highest number of local cohesion errors (LCE). There was a lower percentage of CIUs in the personal narrative in the GAE condition, but otherwise little difference in the amount of content conveyed for the other narratives.

Narrative Sample	MLU	% of Sample with complete words (WC)	Unit Count	Word Count	TNU	% of CIU	LCE
Story retelling GAE Condition	11.45	89%	309	275	24	54%	63%
Personal Narrative GAE Condition	9.5	81%	187	152	16	42%	56%
Story Retelling AAE Condition	13	77%	251	195	15	48%	33%

I able of Iteballs of terbal output	Table 5	5: I	Results	of	verbal	out	put
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Personal Narrative AAE Condition	11.29	97%	395	384	34	51%	50%
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Main Concept Analysis:

The process for main concept analysis followed procedures outlined by Kong, Whiteside, & Bargmann (2015). Table 6 depicts the results of the main concept analysis for the "*For the Birds*" (Pixar, 2000) video which was modeled using GAE dialect for the controls and A001. The neurotypical samples obtained an average of 72.25% for the main concept score while A001 received a main concept score of 40%. For the neurotypical controls, the first sample produced only one accurate but incomplete (AI) concept, and the rest were accurate and complete. The remaining three neurotypical controls only produced accurate and complete (AC) concepts or the concept was absent (AB) from the narrative. Many of the errors produced by the neurotypicals on the "*For the Birds*" sample occurred in the middle of the narrative. Participant A001 produced main concept errors primarily on the initial concepts of the stimuli. Overall, Participant A001 demonstrated more AB errors, which yielded a lower main concept score as compared to the neurotypicals.

Main Concept	Control Sample 1	Control Sample 2	Control Sample 3	Control Sample 4	Participant A001
A little bird is sitting on a telephone line	AC	AC	AC	AC	AB
A second little bird comes and sits on the line	AC	AC	AC	AC	AB

 Table 6: For The Birds main concept analysis with four neurotypical controls, and participant A001

They start fighting	AC	AC	AC	AC	AI*
More little	AB	AC	AB	AB	AB
birds come					
They all start	AB	AC	AB	AB	AB
fighting					
A big bird	AC	AC	AC	AC	AC
comes					
The little birds	AC	AC	AC	AC	AC
make fun of					
the big bird					
The big bird	AC	AC	AC	AC	AC
gets on the					
line and					
weighs it					
The big bird	AD		AC		
flips upside	AD	AD	AC	AC	AD
down					
down					
The little birds	AB	AC	AC	AC	AB
start pecking					
at his feet to					
get him off the					
line					
The big bird	AI	AB	AB	AB	AB
falls off					
The little birds	AC	AC	AC	AC	AC
fly in the air					
The little birds	AC	AC	AC	AC	AC
lose all their					
The big bird	AC*	A D*	AD	AD	AD
laughs at them	AC.	AD '	AD	AD	AD
Main concept	$3(AC) \times 9 +$	3(AC) x	$3(AC) \times 10=$	3(AC) =	$3(AC) \times 5 +$
score:	$2(AI) \times 1=$	11=	5(110) × 10	5(110)	$2(AI) \times 1=$
	2(11)/11				
	29	33	30	30	17
% Correct	69%	78%	71%	71%	40%

*Accurate and Complete (AC), Accurate but incomplete (Ai), Inaccurate (IN), Absent (AB).

Table 7 depicts the results of the main concept analysis for the stimuli "*Pigeons*" (Phillip, 2010) which was modeled for the neurotypicals and A001 using AAE dialect. On average the main concept score for the neurotypical controls was 74.75% while A001 main concept score was 30%. All of the errors produced by neurotypical controls were AB concepts, with no incidences of AI or IN concepts. A001 demonstrated two AI errors as well as eight AB errors, yielding a lower main concept score.

Main	Sample 1	Sample 2	Sample 3	Sample 4	Participant
Concept					A001
There are 3	AC	AC	AC	AC	AC
little birds in					
a nest on a					
roof					
They make	AB	AC	AC	AB	AB
a lot of					
noise					
They see a	AC	AC	AC	AC	AB
cupcake on					
a tall ledge					
they can't					
reach					
They start	AC	AC	AC	AC	AC
plotting					
ways to get					
to the					
cupcake					
They get a	AB	AB	AC	AC	AB
seesaw and					
try to					
catapult					
their way to					
the ledge					

Table 7: Pigeons main concept analysis with four neurotypical controls, and participantA001

They still don't get the	AC	AC	AC	AC	AB
cupcake	4.5			4.5	4.5
They climb	AB	AC	AC	AB	AB
on top of					
each other					
They still	AB	AC	AC	AB	AC
don't get the					
cupcake					
They go	AB	AC	AC	AC	AB
back to the					
nest					
They're sad	AB	AB	AC	AB	AB
they didn't					
get the					
cupcake					
Another bird	AC	AC	AC	AC	AB
flies over					
them and					
drops a					
worm					
They're	AC	AC	AC	AC	AI
disappointed					
they didn't					
get the					
cupcake					
Main	3(AC) x 6	3(AC) x	3(AC) x 12	3(AC) x 8	3(AC) x 3 +
Concept		10=			2(AI)
Score	=18	30	=36	=24	=11
% Correct	50%	83%	100%	66%	30%

In summary, across both conditions the average of the neurotypical controls performance on the main concept analysis was above 70%, and the two videos were relatively equal in the maximum expected main concept score. A001 performance for both conditions was substantially lower than the neurotypical controls average. A001 produced 40% of the main concepts in the GAE condition as compared to 30% of the main concepts in AAE condition, demonstrating poorer performance in both conditions, but a somewhat worse performance under the AAE condition.

Density of Nonmainstream Forms of AAE

Table 8 depicts the nonmainstream phonological and morphosyntactic forms of AAE used by A001 in each condition. A001 produced more nonmainstream AAE forms under the AAE condition. A001 also produced a greater variety of nonmainstream forms of AAE under this condition, and utilized more syntactic nonmainstream forms under this narrative than the other samples. The participant had greater density of nonmainstream forms of AAE under both AAE conditions. In relation to the story retell task when presented with the GAE model the participant's sample contained a 8% density of nonmainstream forms of AAE. When presented with the AAE model, the participants sample contained a 20% density of nonmainstream forms of AAE. The participant produced the highest density of nonmainstream forms of AAE for the personal narrative in the AAE condition; this narrative indicated a density of 34% nonmainstream forms of AAE. The personal narrative under the GAE condition yielded a density of 19% nonmainstream forms of AAE.

Table 8: Nonmainstream Phonologic and Morphosyntactic Forms of AAE spoken by participant

	Story Retell Task GAE	Story Retell	Personal	Personal					
		Task AAE	Narrative	Narrative AAE					
			GAE						
Nonmainstream Phonologic Forms of AAE									

Ing Cluster	"I'm not gonna say	"I wanna say"	"We was	"They was
Reduction in	arguing"		goin out"	standin "
alliterations	"They made the mistake	"Three pigeons		"They was
	of lettin him on"	tryna get on		takin"
		each other"		"We was all
				standin"
				"He was takin"
				"Two people
				that was ridin
				these boats"
Final consonant	N/A	"They had a	N/A	N/A
deletion		problem wit it"		
AAE Specific	N/A	N/A	N/A	Well that
Word				wadn't a
Productions				holiday
				memory"
				"Errbody was
				waiting"
Nonmainstream Mo	orphosyntactic forms of AAE			
Past tense from	"They was falling	"There was	"We was	"They was
was/were	down"	three pigeons"	goin"	standin "

				"Two people
				that was ridin
				these boats"
				"We was all
				standin"
Preterite Had +	N/A	N/A	"We had	"It had flooded"
Verb			went to the	
			store"	
Total number of	2	3	3	11
AAE				
occurrences				
Total number of	24	15	16	32
Utterances				
*Density of	8%	20%	19%	34%
nonmainstream				
forms of AAE				

*Density of nonmainstream AAE forms calculated by diving the number of occurrences by the

total number of utterances

Chapter Four: Discussion

This study investigated whether there was an impact of examiner's dialect on the quantity and quality of narrative discourse in a bidialectal African American with mild aphasia. We hypothesized that there may be a cognitive cost for bidialectal individuals when responding to the examiner by code switching from African American English (AAE) to General American English (GAE) as has been described in bilingual aphasia (Neuman, Walters & Altman, 2016). We predicted that if there was a cognitive cost to code switching, we would see decreases in the amount, content and quality of verbal output produced and the information content in narrative discourse. We tested this hypothesis in an individual who was bidialectal for AAE and GAE and who presented with mild post-stroke aphasia by eliciting story retell and personal narratives on two separate occasions, under two conditions: one where the examiner spoke exclusively using GAE and the other where the examiner spoke exclusively in AAE. These narratives were analyzed for differences in the density of nonmainstream AAE forms, amount of verbal output, local cohesion errors and the information content of the narratives.

Our first hypothesis stated that there would be an impact of the examiner's dialect on the quality and quantity of nonmainstream dialectical forms present in the narrative discourse for bidialectal people with post-stroke aphasia. If the communication partner speaking in a dialect "invites" the use of that dialect more strongly than a communication partner speaking in a different dialect, then there will be an increase in the density of the nonmainstream forms of AAE. Conversely, we expected to see differences in the quantity and quality of nonmainstream AAE forms when there is a mismatch between the dialect spoken by the examiner versus the preferred dialect of the person with post-stroke aphasia. The results of our analysis provide support for this

hypothesis. While the participant produced nonmainstream forms of AAE across all samples, the density of nonmainstream AAE forms was higher for both tasks in the AAE condition. The story retell task in the GAE condition contained 8% density of nonmainstream AAE forms as compared to 20% density of nonmainstream AAE forms in the AAE condition. The personal narrative task in the AAE condition contained a 34% density of nonmainstream AAE forms whereas the personal narrative in the GAE condition yielded a density of 19% of nonmainstream AAE forms. There was also an influence of task demands on the density of nonmainstream AAE forms as evidenced by a higher density of nonmainstream AAE forms overall in the personal narrative task in both conditions as opposed to the story retell task. In addition to the highest density of nonmainstream AAE forms, the personal narrative sample in the AAE condition contained the greatest variety and the most nonmainstream morphosyntactic forms of AAE.

The increase in nonmainstream AAE forms during personal narratives is inconsistent with previous reports in the literature (Ulatowska and Olness, 2001). However, in their study during the structured language tasks (story retell) only one of their participants produced nonmainstream forms of AAE in contrast to the unstructured language tasks (personal narratives) where all the participants produced at least one form of AAE. Ulatowska and Olness suggested that dialects other than the standard dialect are typically reserved for more informal settings, personal topics, and familiar communication partners. Structured tasks such as story retell and picture description may create an artificial socio-pragmatic condition, which may not invite the use of the dialect in a natural way. Importantly, the examiners in the Ulatowska and Olness (2001) only used AAE during the personal narrative elicitation. This may suggest an influence of examiner dialect on

the use of AAE as evidenced by the increased use of nonmainstream AAE forms in the AAE condition for both tasks in our study.

Our second hypothesis stated there will be a difference in the quantity and quality of verbal output produced by the participant when being presented with the AAE model versus the GAE model. To address this hypothesis, we first assessed the impact of condition on the amount of verbal output by comparing total number of utterances, unit count, percentage of complete words, and mean length of utterance for each task. The results of these analyses were mixed. During the structured language story retell task, A001 demonstrated a MLU of 15.26 in the AAE condition, whereas the MLU for the GAE condition was 12.16. However, the more structured story retell task in the GAE condition yielded a longer narrative containing more utterances, a higher unit count, and a higher percentage of complete words compared to the AAE condition. Thus, there did not appear to be a negative impact of the examiner's dialect for this more structured task. Other than MLU, the GAE condition generated higher structural scores, perhaps linking more consistency between the more formal task and the more formal dialect of the examiner. This notion is supported by fewer nonmainstream forms of AAE used by the participant during this condition.

However, the picture differs somewhat for the personal narratives. While both personal narrative samples yielded similar MLUs, the AAE condition produced higher outcomes in unit count, percentage of the sample with complete words, and total number of utterances. The personal narrative sample in the AAE condition was the longest sample across all samples. This provides some support for an advantage for our participant when producing a less structured narrative

with an examiner who also spoke AAE. In this condition, not only did the participant use more nonmainstream forms of AAE, but he produced a greater variety of nonmainstream forms and notably evidenced nonmainstream morphosyntactic as well as nonmainstream phonologic forms of AAE. These results are consistent with the suggestion from Ulatowska and Olness (2001) that participants that produced more nonmainstream morphosyntactic forms of AAE produced longer personal narratives. Together these results suggest the examiner dialect influenced the use, the amount, and the variety of nonmainstream AAE forms, and the impact was greater for personal narratives.

To examine the impact of examiner dialect on the quality of the verbal output, we assessed differences in content by calculating correct information units (CIUs), the number of main concepts in the story retelling (MCA), and the percentage of the sample containing local cohesion errors (LCE). The participant's personal narrative in the AAE condition yielded 51% CIUs, while in the GAE condition personal narrative contained 38% CIUs. The MCA also speaks to the quality of the narrative, as it depicts the ability of the participant to accurately and completely recall the important content of the narrative. Here, the impact of condition was reversed: the participant recalled 40% of the main concepts in the GAE condition. As there is no way to determine main concepts for the unstructured tasks, this comparison is less informative. Differences in local cohesion between the two conditions reveal a more consistent impact of condition for both types of narrative discourse. The participant produced more local cohesion errors in the GAE condition than in the AAE condition for the story retell task (63% of the narrative in the GAE condition contained a local cohesion error as opposed to the 33% of AAE) and the personal narrative task (56% in the

GAE condition and 41% in the AAE condition). There were fewer local cohesion errors overall for both types of discourse in the AAE condition. Collectively, greater informative words and fewer errors in local cohesion in the AAE condition suggests an advantage in the quality of narrative discourse for our participant when speaking with an examiner who also speaks AAE. This provides support for the control process model suggested by Green and Wei (2014). It is possible in an attempt to inhibit AAE our participant experienced an increased cognitive load when code switching to GAE. GAE and AAE have differences not only in phonology but also in syntax. Green and Wei (2014) suggested differences of syntax can yield a greater cognitive load than differences of lexicon. This simultaneous process of inhibiting and coactivating can create an increase cognitive demand on a speaker, which was evident in A001's increase of cohesion errors. Cohesion is a cognitive process. The increase of local cohesion errors in the GAE condition supports this increased cognitive demand.

The results of this study, while limited, may suggest that there can be a negative impact on speakers of AAE when code switching to GAE in narrative discourse. For bilingual people with aphasia, code switching has been shown to support verbal fluency in the context of lexical retrieval deficits, especially for the preferred language (Neumann, Walters & Altman, 2016). While codeswitching between dialects may be less lexically motivated, in the context of aphasia there may be a greater demand placed on bidialectal speakers when codeswitching to a less preferred dialect. This may result in greater challenges for other aspects of language that require greater executive control, such as producing accurate and coherent narrative discourse. In our study, increased codeswitching was more evident on unstructured tasks. The participant codeswitched on every narrative sample but produced more variety and greater amount of

nonmainstream forms of AAE in the unstructured task where the examiner was speaking in AAE, which in turn resulted in a better quality narrative. Perhaps A001 felt more comfortable speaking in AAE with the unstructured task and was able to use AAE to enhance the quality of his narrative discourse. With less need for cognitive control processes to inhibit or select between more preferred and less preferred dialects, there may have been more cognitive control resources to generate a more coherent narrative.

The influence of type of discourse, i.e. differences in task demands between story retelling and personal narratives, on performance may also provide some explanation for the differences in outcomes for bidialectal speakers of AAE on aphasia tests that have been reported in the literature (Molrine & Peach, 2002;Ellis & Peach, 2017;Wertz et al.,1997). In their study, Molrine and Peach reported racial differences in word reading, animal naming, and paragraph retelling which are all structured language tasks. If structured tasks are considered out of context elicitation procedures which create an artificial socio-pragmatic environment (Ulatowska & Olness, 2001), this may contribute to differences in performance for speakers of AAE. It is not uncommon for researchers and clinicians to combine different types of narrative samples to yield a long enough sample for linguistic analysis (Barker, Young & Robinson, 2017). Typically, the target sample length is 300 words. Our results suggest that this practice of combining different types of narrative discourse, which may yield differences in the quality of the narratives, should be discouraged.

While differences in conditions and in task demands may have contributed to our findings, one must consider alternative explanations. One alternative explanation is the increased comfort level

with the examiner on the second testing timepoint versus the first (i.e. order effects). Harmon et al (2019) studied the effect of communication partner's responsiveness on verbal fluency in PWA. They reported when a communication partner is attentive and responsive, verbal fluency improves. As the AAE condition occurred second in the study, the participant may have become more comfortable with the examiner by that time. This may lend an explanation to the increase in verbal fluency and cohesion of the participant's personal narrative in the AAE condition. His familiarity with the examiner at this point may have influenced his verbal fluency and quality of his narrative. However, it is important to note that even within the AAE condition performance differences between the two types of narratives (story retelling vs personal narrative) were observed.

It is also important to consider the content of the personal narrative when discussing the results of this study. During the AAE condition the participant shared his experience with Hurricane Harvey. Ulatowska and Olness (2001) stated sharing frightening experiences are emotionally charged and salient to the individual. This invites free use of code switching to the preferred dialect of the speaker. According to the outcomes of that study, participants produced more nonmainstream forms of AAE while sharing a frightening experience. This could be another possible explanation for the noticeable increase in the density of nonmainstream forms of AAE with this language sample.

Another important factor to consider is that A001 presented with relatively fluent output and mild aphasia. It is possible that in individuals with more severe aphasia, a different impact of examiner dialect on narrative discourse may emerge.

Limitations:

There are a number of limitations for this study. One limitation is this study was conducted as a single case study. This presents an obvious threat to external validity and no assumptions can be made about generalizability of the results. Another limitation is the similarity between AAE and Southern American English. The participant is from Houston, Texas where there is strong presence of Southern American English. Some of the nonmainstream forms of AAE produced by the participant could also be attributed to be forms of Southern American English. The participant also presented with a high-level education and socioeconomic status. He is a college educated individual who formally worked as an architect prior to his CVA, resulting in likely more consistent exposure and use of GAE. There is evidence that socioeconomic status can influence the use of AAE (Craig et al, 2009) and the results of this study may not generalize to others for whom these parameters differ. Another study limitation, as mentioned above, is the order effect. The personal narrative in the AAE condition was the last sample collected and familiarity with examiner and the order of data collection may have influenced the results. Finally, it is also important to discuss the concept of preferred dialect. Although the participant and his wife reported speaking AAE at home, they never explicitly stated this was their preferred dialect. This may have resulted on a lower density of nonmainstream forms of AAE in both conditions.

Future Directions

It is recommended this study be duplicated on a larger scale with more participants. Future research could focus on how the severity of aphasia influences the use of nonmainstream dialectal forms. Considering fluency is the main inconsistency on aphasia batteries, future studies on how examiner dialect influences speech rate and fluency measures could be explored. Further

research is needed on the impact of examiner dialect on global as well as local cohesion measures.

Clinical Implications

It is imperative to use multiple forms of stimuli when collecting a language sample. The different stimuli may yield different outcomes and paint a more accurate overall depiction of a person's language ability, especially when assessing a person who is bilingual of bidialectal. If a speech language pathologist is bidialectal and their client is also bidialectal (they have a shared dialect), the use of code switching may allow their client to feel more comfortable to use the nonmainstream dialect. This will allow a bidialectal speech pathologist to see the effect the nonmainstream dialect has on the person's narrative language. It is also important to consider creating an environment that does not overtly promote a mainstream dialect over a nonmainstream dialect. Creating an environment that allows for code switching can possibly eliminate some communication barriers.

Conclusions

The results of this study suggest that while the examiner's dialect had an effect on the use of nonmainstream AAE forms across all tasks, there was less impact on narrative discourse in PWA for structured language tasks, but there were noticeable differences on the unstructured narrative tasks, resulting in differences in the quality of the verbal production. This implies that when assessing a person who is bidialectal the same considerations need to be made as assessing a person who is bilingual. Multiple discourse samples should be collected. Further research needs to be conducted on if codeswitching can be used to enhance the quality and quantity of narrative

discourse tasks to confirm these findings. This project supports the need for formal and informal measures when assessing a bidialectal PWA as it can yield a more accurate depiction of the person's language abilities.

Appendix A: Transcripts

Story Retell GAE Condition Transcript

Ok. Um. Started out that the birds um they were they they they were they were arguing. I'm not gonna I'm not gonna say arguing. But um they didn't they didn't like each other at first you know? So they seemed to they seemed that they argued over you know why this one or why that one was looking at each other you know they were arguing with each other. And then um they all uhh got together because there was another bird who wanted to get on the pole but he was much bigger than they are you know and so you know they didn't like him they made fun of him and uh so then they decided they decided ok we'll we'll let you on and uh when they decided to let him on um that is when the problem really started, you know they decided to let him on and uh you know they went they went to both sides they let him in the middle and he was so he was so heavy that he took all of them to the middle with him (laughs). Uh you know they didn't uh really have anything for him to do so then he decided to go to do the reverse flip you know go under and they decided ok we will get him by each of the uh feet you know and uh so when they did that you know they thought that you know this would be good if we got his feet you know they made the mistake of lettin him on then he made all of um fly (laughs) uh but when they came down they uh they were naked. (laughs) you know one came down first then uh all of um came down so you know (laughs) and the bird laughed at um when they was falling down

Personal Narrative GAE Condition Transcript

Oh yeah good um (Pause) My favorite holiday memory? I would say it was um here at the house you know uh? We had the brother in law the sister in law um the other sister in law and it was it was all of us in the house you know? And it probably it probably was the last the last one we did you know? And so uh he and I we was goin out to get uh yeah for yeah uh thanksgiving or christmas you know we was going to get we was going to get uh some stuff and uh we had went to the store and uh you know he was just saying yeah I would I would do you know stuff for his wife and stuff like that you know but you know that's that one that one would be the closest one you know if you ask me that one would be the closest one and the uh the uh last one I remember before you know the stroke and all of that stuff but that would be a good one

Story Retell AAE Condition Transcript

Ok um there was three pigeons that were you know they wanted to see what was um you know what was it uh they were living on this um I could say um God why am I thinkin like that but anyway uh they were living on a roof I wanna say and uh the pigeon on the right um he seemed to um what was it? The pigeon on the right seemed to have had something he seemed to to have something but uh the other two pigeons they looked at him like uh you know this is just um you know not for us and the pigeon on the um the pigeon on the uh left I don't know they seemed to have had a problem wit it and so um then they came with an idea that they can jump on the uh roof that uh they cant get the cupcake and um each of um they they tried they got on each other top the one to the one two three it was three pigeons on each other tryna get on the roof and so um you know after trying for so long you know it didn't work so uh they had given up until they got to the end they came to the end then all of um you know they were they seemed to have uh came to the realization that uh it wasn't to be and um that's all I got from the story.

Personal Narrative AAE Condition Transcript

I guess when (pause) well that wadn't a holiday memory but Harvey. I think uh during the hurricane harvey you know that was bad you know in the sense that uh all the water had risen up and it had flooded um kingwood and uh my boss had wanted to uh wanted me to get a picture of our of this place that we were doing um and I could not get to the other side because you know basically the road had become the water you know and I remember everybody had uh come up everybody came and they was standin at this one place we was all standin at this one place and the guy was on the boat you know takin people you know here he was takin people there you know and it was just you know he had to take you to the other side you know of kingwood and it was um only two people that was riding these boats ridin this boat and everybody was sayin that uh you know they never seen anything like this before I remember that you know it was horrible you know we could not drive a car errobdy was waiting on this one person boat to come back and forth and uh that would have to be one of the worst memories I ever had period. Never seen anything like that we've we've seen on the news and stuff you know but to actually go to It and actually see guy you know a guy taking people back and forth you know it was horrible and then my boss he wanted me to finally see the video of them going back and forth and I told him look man I cannot go I cant go you know it stopped right here you know I could not even get to the corner because that's how bad it was you know and so all I know is he had to build he had to build it up the place is finished now its built up but uh looking at it it was a mess we had to add all this stuff all the things I remember we had to make it bigger and ever since then It was made bigger for him to get up that's about the only thing I have for you

Appendix B: Coded Transcripts

Coded 1	Transcription	Non mainstream	Non	Word	Local	Correct
		Morpho	Mainstream	Count	Coherence	Information
		syntactic forms of	Phonologic		Error	Untis
		AAE	forms of			
			AAE			
1.	Ok. <um></um>	0	0	1	0	0
2.	Started out that the	0	0	8	0	4
	<i>birds</i> <um> <they were=""></they></um>					
	<they they="" were=""></they>					
	they were arguing.					
	• 0 0					
2	· · · · · · · · · · · · · · · · · · ·	0	1	_	0	0
3.	<im gonna="" not=""> 1'm not</im>	0	1	2	0	0
	gonna say arguing.	0		10	0	-
4.	but <um> <they didn't=""></they></um>	0	0	10	0	7
	They didn't like each					
	other at first you know?					
5.	So they seemed to <they< td=""><td>0</td><td>0</td><td>23</td><td>0</td><td>14</td></they<>	0	0	23	0	14
	seemed> <i>that they</i>					
	argued over you know					
	why this one or why that					
	one was looking each					
	other you know?					
6	they were arguing with	0	0	6	0	0
0.	each other	v	Ŭ	Ū	v	0
7	And then <um> they all</um>	0	0	18	RF	15
7.	subs got together	Ū	Ŭ	10	ICL .	15
	-un-goi iogeiner					
	because inere was					
	another bira who					
	wanted to get on the					
-	pole.			1.0		_
8.	but he was much bigger	0	0	10	0	7
	<i>than they are</i> you					
	know.					
9.	and so you know <i>they</i>	0	0	14	RE	9
	didn't like him they					
	made fun of him.					
10.	And <uh> then <they< td=""><td>0</td><td>0</td><td>9</td><td>RE</td><td>7</td></they<></uh>	0	0	9	RE	7
	decided> they decided					
	ok <we'll> we'll let you</we'll>					
	on.					

Story Retell GAE Condition Coded Transcript

11. And <ub> when they decided to let him on <ub> that is when the problem really started.</ub></ub>	0	0	15	RE	6
12. you know they decided to let him on.	0	0	8	RE	0
13. and <uh> you know they went they went to both sides.</uh>	0	0	10	RE	5
<i>14. they let him in the middle</i>	0	0	6	RE	5
15. and <he so="" was=""> he was so heavy that he took all of them to the middle with him</he>	0	0	16	RE	14
16. <uh> you know they didn't <uh> really have anything for him to do so then he decided to go to do the reverse flip</uh></uh>	0	0	22	RE	16
17. vou know go under	0	0	4	RE	0
18. and they decided ok we will get him by each of the <uh> feet you know</uh>	0	0	15	0	10
19. and <uh> so when they did that</uh>	0	0	6	RE	0
20. you know they thought that you know this would be good if we got his feet you know	0	0	18	0	0
21. they made the mistake of <u>lettin him</u> on then <i>he made all of um fly</i>	0	1	15	RE	5

22. <uh> but when they</uh>	0	0	9	RE	7
<i>came down the</i> y <uh></uh>					
they were naked.					
23. you know <i>one came</i>	0	0	12	RE	10
down first then all of um					
came down					
24. so you know and the	1	0	15	RE	9
bird laughed at um					
when they was falling					
<u>down</u> so					
Totals	1	2	275	15	150/275

Personal Narrative GAE Condition Coded Transcript

Coded Utteran	ce	Non Mainstream Morpho syntactic forms of AAE	Phonologic non mainstream forms of AAE	Word Count	Local Coherence Error	Correct Information Untis
1.	Oh yeah good <um></um>	0	0	3	0	0
2.	my favorite holiday memory?	0	0	4	0	0
3.	I would say it was <um> here at the house you know <uh>?</uh></um>	0	0	11	0	6
4.	We had the brother in law the sister in law <um> the other sister in law</um>	0	0	9	RE	5
5.	and it was <it was=""> all of us in the</it>	0	0	11	0	0

house you know?					
6. And <it probably> <i>it</i> <i>probably</i> <i>was</i> the <i>last</i> the last <i>one</i> <i>we did</i> you know?</it 	0	0	13	RE	7
7. And so <uh> he and I we was goin <u>out</u> to get <uh yeah> for yeah <uh> thanksgiving or Christmas you know</uh></uh </uh>	1	1	18	0	11
8. <u>we was</u> <u>going</u> to get <we was<br="">going to get> <uh> some stuff</uh></we>	1	0	9	CJE	7
9. and <uh> <u>we</u> <u>had went</u> to the store</uh>	1	0	7	0	6
10. and <uh> you know he was just saying yeah <i would=""> I would do you know stuff for his wife</i></uh>	0	0	17	RE	11
11. and stuff like that you know but <you know=""></you>	0	0	7	RE	0
12. that's <that one that> one would be the closest one you know</that 	0	0	9	RE	0

13. if you ask me that one would be the closest one	0	0	11	RE	0
14. and the <uh><the uh> last one I remember before you know the stroke</the </uh>	0	0	11	RE	5
15. and all of that stuff	0	0	5		0
16. but t <i>hat</i> would be a good one	0	0	7	CJE	6
Total	3	1	152	9	64

Coded Utterance	Non Mainstre am Morpho syntactic forms of AAE	Non Mainstrea m Phonologic Forms of AAE	Word Count	Local Coherence Erros	CIU
1. Ok <um> <u>there</u></um>	1	0	5	0	4
<u>was three</u> <u>pigeons</u>					
2. that were you know they wanted to see <what um<br="" was="">you know> [/] what was it [/] <uh> they were living on this</uh></what>	0	0	15	RE	5
3. <uh> [/] they were living on a roof <u>I wanna say</u></uh>	0	1	9	0	0

Story Retell AAE Condition Coded Transcript

4. and <uh>[/] <i>the</i></uh>	0	0	9	0	4
pigeon on the					
<i>right</i> <um></um>					
he seemed to					
5. The pigeon on	0	0	13	0	10
the right seemed					
to have had					
<i>something</i> [/] <he< td=""><td></td><td></td><td></td><td></td><td></td></he<>					
seemed to> to					
have something					
6. but [/] <uh> the</uh>	0	0	20	0	15
other two pigeons					
they looked at					
him like <uh></uh>					
you know this is					
just <um> you</um>					
know not for us	0	1	10	DE	
7. and the pigeon	0	1	19	RE	9
on the <um></um>					
<the on<="" pigeon="" td=""><td></td><td></td><td></td><td></td><td></td></the>					
the> <un> left 1</un>					
don't know <u>they</u>					
<u>seemea to nave</u>					
<u>nua a problem</u> wit it					
$\frac{wit}{u}$	0	0	15	0	14
8. allu so <ull></ull>	0	0	15	0	14
with an idea that					
they can jump on					
the <ub> roof</ub>					
9 that $they$	0	0	6	CIF	5
cant get the	Ū	v	0	CJL	5
cuncake					
10, and $ each of$	0	0	10	CJE	5
um [/] <thev< td=""><td></td><td>ľ</td><td></td><td>2011</td><td></td></thev<>		ľ		2011	
they> tried <i>they</i>					
got on each other					
11. top the one to	1	1	20	0	12
the one two					
three <u>it</u> was three					
pigeons on each					
other tryna get					
on the roof					
12. and so $<$ um $>$ you	0	0	14	0	8
know after trying					
for so long you					

know <i>it didn't</i> <i>work</i>					
13. so <uh> they had given up until they got to the end</uh>	0	0	11	0	10
14. then all of um you know they were they seemed to have <uh> came to the realization that <uh> it wasn't to be</uh></uh>	0	0	21	RE	13
15. and <um> that's all I got from the story.</um>	0	0	8	0	0
Total	2	3	195	5	114

Personal Narrative AAE Condition Coded Transcr
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Coded Utterances	Non Mainstrea m Morpho syntactic forms of AAE	Non Mainstream Phonologic Forms of AAE	Word Count	Coherence	CIU
1. I guess when	0	0	3	0	0
2. well that <u>wadn't</u> a holiday memory but Harvey	0	1	8	0	0
3. I think <uh> during the hurricane Harvey you know that was bad</uh>	0	0	11	0	6

4.	and <u>it had</u> <u>flooded</u> <um></um>	0	1	5	0	4
	kingwood					
5.	and <uh> <u>my</u></uh>	0	1	18	RE	17
	boss had <wanted< th=""><th></th><th></th><th></th><th></th><th></th></wanted<>					
	to> / <uh></uh>					
	wanted me to get					
	a picture of					
	<our> / of this</our>					
	place that we					
	were doing					
6.	and I could not	0	0	22	RE	16
	get to the other					
	<i>side because</i> you					
	know basically					
	the road had					
	become the					
	water you know					
7.	and <i>I remember</i>	0	0	10	RE	6
	everybody had					
	<uh> come up</uh>					
	everybody came	1	1		DE	-
8.	and <u>they was</u>	1	1	8	RE	/
	<u>standin at this</u>					
0	<u>one place</u>	1	1	0	DE	0
9.	<u>we was all</u>	1	1	8	KE	8
	<u>standin at this</u>					
10	one place	0	1	15	CIE	6
10.	and the <i>guy was</i>	0	1	15	CJE	0
	<i>on</i> the <i>boat</i> you know <i>takin</i>					
	neonle vou know					
	here					
11	he was takin	0	1	8	0	0
	people there you	0	-	0	Ŭ,	°
	know					
12.	and it was just	0	0	20	0	2
	you know he had					
	to take you to					
	the other side					
	you know <i>of</i>					
	kingwood					

13. and <u>it was</u> <um></um>	1	1	11	0	8
only two people					
<i>that was</i> <riding< th=""><th></th><th></th><th></th><th></th><th></th></riding<>					
these boats>					
ridin this boat					
14. and everybody	0	1	15	RE	10
was <u>sayin</u> that					
<uh> you know</uh>					
they never seen					
anything like this					
15. before <i>I</i>	0	0	12	RE	6
remember that					
you know <i>it was</i>					
<i>horrible</i> you					
know					
16. we could not	0	0	6	0	6
drive a car					
17. everybody was	0	0	13	0	13
waiting on this					
one person boat					
to come back					
and forth					
18. and <uh> <i>that</i></uh>	0	0	17	0	14
would have to be					
one of the worst					
memories I ever					
had period					
19. Never seen	0	0	6	RE	0
anything like					
that			_		_
20. <i>We've</i> [/] <weve></weve>	0	0	9	0	5
seen on the news					
and stuff you					
know		<u></u>			
21. but to actually	0	0	25	0	0
go to It and					
actually see guy					
you know a guy					
taking people					
back and forth					
you know it was					
horrible					

22. and then my boss	0	0	19	0	11
he wanted me to					
<i>finally see</i> the					
video of them					
going back and					
forth					
23. and I told him	0	0	15	0	8
look man I					
<i>cannot go</i> I cant					
go you know					
(repetition made					
for emphasis)					
24. you know <i>it</i>	0	0	7	RE	4
stopped right					
here					
25. you know <i>I</i>	0	0	17	0	14
could not even					
get to the corner					
because thats					
how bad it was					
26. you know and so	0	0	9	0	0
all I know is <he< th=""><th></th><th></th><th></th><th></th><th></th></he<>					
had to build> [/]					
27. he had to build it	0	0	12	RE	11
<i>up</i> the <i>place is</i>					
finished now					
28. its built up	0	0	3	RE	0
29. but <uh> looking</uh>	0	0	4	RE	4
at it [/]					
30. it was a mess	0	0	4	RE	3
31. we had to add all	0	0	13	RE	7
<i>this stuff</i> all the					
things I					
remember					
32. we had to make	0	0	7	RE	0
it bigger					
33. and ever since	0	0	14	RE	0
then It was					
made bigger for					
him to get up					
34. that's about the	0	0	10	0	0
only thing I have					
for you					

Total	3	9	384	17	196
4 TO 1 1 1 1 1	1	1 11	1 7	4	CIT I

Appendix C: Model Scripts

African American English Model Script

So, what happened was it was some storks, and dey was flyin in da sky and den they had landed on some very happy clouds. T he happy clouds was giving out babies and baby animals like baby cats, dogs. den da storks had to take da babies and da baby animals da clouds had made and dey got to da moms. but Den dere was a story cloud who was a lil different den da rest of da clouds. And da stormy cloud had a stork too. and him and dat stork was friends. Now dis stork look a lil rough. He kinda looked like he has been through some thangs. So Den da stormy cloud started to make some animals. He had made a alligator, and da alligator got real sharp teef. So den da alligator bit da stork in the face and da stork looked real scared. But den da cloud put da alligator in a bag so da stork could drop da bbay alligator off. So den da stork had flew away. Then da stormy cloud kept makin scary stuff. It had gave the stork a porcupine which had hurt the stork. The stork was tryna be nice and it kept comin back but it was hurt. Da stork clearly didn't know how to tell the cloud it didn't like the stuff it had been makin so it just flew away from da stormy cloud and went to one of the happy clouds. Den da stormy cloud got real mad cause da stork aint wanna be his friend no more. so he start like makin lightnin' and storm clouds and den he got sad and cried. So den da lightnin was goin da other baby went and grabbed what look like was a baby. But it actually was some like gear to protect himself da stork so da cloud stuff don't keep hurtin him. Den dey was best friends again and da cloud kept makin scary stuff.

General American English Model Script

The story is about a pig named Ormie. He is walking past with his chest poked out and he looks extremely proud. Then suddenly Ormie smelled an aroma coming from on top of the refrigerator. He looks up and he sees a jar of chocolate chip cookies. But there is one problem. The cookies are up too high and Ormie cannot reach the cookies. First he tries the most obvious solution.

To try and jump to reach the cookies, but he is still unable to reach them. So then he goes to look for something to help him get the cookies down and he comes back with a broom, but that doesn't work. he just ends up pushing the cookie jar back further. Of course he goes to the next logical option and gets a stool. The stool ends up being too short and getting stuck on the freezer door, and all the ice falls out of the freezer and covers Ormie. But guess what? He still doesn't get the cookies. Then ormie decides to get really creative. He gets a trapeze, a ramp and a bike, and even a fishing poll, a rocket blaster, and he still doesn't get the cookies down. So ormie has one last ditch effort to get the cookies down. He jumps out of a helicopter and gets so close to the cookies falling down, but they still don't fall. Then Ormie gets super frustrated and hits the refrigerator and then finally the cookies fall down one by one! Ormie is so excited to eat a cookie at last, But before Ormie can put one of those cookies in his mouth, the jar falls on his head and after all of that hard work and scheming, Ormie never gets to enjoy those chocolate chip cookies

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