

ORAL DISCOURSE SKILLS IN AGING
AFRICAN-AMERICAN ADULTS

By

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AFRICAN-AMERICAN ADULTS

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SUMMARY OF MEASURES BY GROUP

ASK

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CHAPTER I

INTRODUCTION

The aging population is increasing at a rapid rate as we enter the 21st century. Population projections by the U.S. Census Bureau estimate that the elderly, those aged 65 and over, now comprise approximately 13% of the population and will comprise 16.9% of the population by the year 2020 (Hale, 1992; Manuel, 1988; Shadden & Toner, 1997). Those elderly over the age of 85 will grow at an even faster rate than those between the ages of 65 and 85 (Jackson, Chatter, & Taylor, 1993; Payne, 1997; Shadden & Toner, 1997). The elderly population is affected disproportionately with illnesses that affect cognition and language. One of the leading causes of language impairment in the elderly is cerebrovascular accident (CVA) or stroke (Holland & Bartlett, 1985; Jackson, 1988). Aged individuals are also affected by traumatic brain injury and dementia which are significant other causes of language and cognitive impairments. Chronic diseases such as heart disease, diabetes, and hypertension, which increase the likelihood of stroke, also affect the elderly disproportionately. Approximately 10% of the elderly population are currently projected to be in need of speech-language pathology services due to language impairments (Payne, 1997).

The elderly in America are an extremely heterogeneous group. As the total number of elderly individuals is rising in this country so too are the cultural and ethnic

subgroups within the aging population. The numbers of African-American, Hispanic-American, Native-American, and Asian-American elderly are increasing at a rate comparable to their Anglo-American peers. For example, African-American elderly are expected to increase to 9.6 million by 2050. In this same time period, Hispanic-Americans will increase to 7.9 million and Native- and Asian-Americans combined will rise to 5.0 million (Payne, 1997). These figures indicate that over 20% of the 68.5 million elderly Americans in 2050 will be from a culturally or linguistically diverse background.

With this rapid shift in the population characteristics of the U.S., it is increasingly important that the field of speech-language pathology address the needs of this growing population. Fein (1983) has projected that by the year 2050, individuals over the age of 65 will comprise 39% of the caseloads of speech-language pathologists. In light of these realities, a number of disciplines have begun to address the need for research into the language characteristics of the elderly including psychology, psycholinguistics, sociolinguistics, and speech-language pathology. The goals of speech-language pathologists in research, however, are often quite different from other disciplines. Normal language skills and age-related changes in normal language are used as tools to understand language abnormalities due to neurological damage or other pathologic conditions (Shadden, 1995, 1997b). This leads to more accurate assessment, diagnosis, and intervention with the language impaired adult.

Over the past two decades numerous studies have identified changes in the comprehension and production of language in the elderly. Discourse skills in particular have become a major focus of research in the functional communication skills of the

elderly with typical language and those with neurologically based communication disorders such as dementia, aphasia, and traumatic brain injury. Cherney (1998) defines discourse as “a series of connected sentences or related linguistic units that convey a message.” Discourse embodies not only isolated units of language but also language within a social context. This inherent quality has made discourse a valuable tool to researchers and clinicians as a measure of an individual’s communicative competence or the ability to use language for a variety of purposes within different situations (Cherney, 1998; Shadden, 1997a, Terrell & Ripich, 1989).

Discourse processes involve both the comprehension and production of language. The comprehension of language directly involves dissecting language into its constituent units to derive meaning (North, Ulatowska, Macaluso-Hayle, & Bell, 1986). The production of language involves skills similar to comprehension such as decoding and encoding language as well as the planning of discourse (North et al., 1986). Glosser and Deser (1992) and Shadden (1997b) describe discourse as containing microlinguistic and macrolinguistic levels. The microlinguistic level of discourse refers to the ability to process or produce the phonological, lexical, or syntactic aspects of language in single words and sentences. The macrolinguistic level of discourse focuses on the ability to integrate linguistic information (i.e., sentences or groups of sentences) and nonlinguistic information (i.e., gestures, facial expression, knowledge of the rules of conversation) at the suprasentential level. An example of macrolinguistic discourse ability would be producing a type of discourse such as a narrative, or story, that is perceived by listeners to be effective and informative.

Several researchers have documented declines in discourse skills in the elderly. In the area of discourse comprehension, declines become evident as individuals age through their 50s into their 70s (Obler, Au, & Albert, 1995). Declines in performance are also associated with increases in task demands (Au & Bowles, 1991; Ska & Joannette, 1996). These declines in performance are attributed to stress on the neurological system, especially those areas involving working memory (Shadden, 1997b). Language abilities and memory abilities involving verbal information are related and dependent processes. Accordingly, researchers have most often investigated language, memory, and discourse comprehension through text recall or text summary of oral or written verbal material (MacKay & Abrams, 1996; Ska & Joannette, 1996). These methods of investigation have proven to be well-accepted measures of language comprehension abilities.

Kemper (1987) found in a study of middle-aged and elderly adults that elderly adults recalled significantly fewer propositions than middle-aged adults when presented with sentences containing single-clause left-branching or right branching embedded clauses, and subordinate clauses. Recall of propositions, however, varied according to the complexity of the sentences presented. The elderly adults recalled fewer propositions when proposition density increased and when left-branching clauses were present. Also, von Eye, Dixon, & Krampen (1989) discovered similar results on the text recall abilities of concrete versus abstract text in elderly subjects. Older adults performed as well as middle-aged adults on concrete text recall activities, however, a wide gap in performance emerged when abstract texts were presented with older adults performing more poorly than their middle-aged counterparts. Age, subject characteristics, task demands, type of discourse task, and orienting components (such as instructions to subjects or

recommended cueing strategies) were identified as variables in determining overall performance (Shadden, 1997a; von Eye et al., 1989).

The variables of age, task demands, and type of discourse task were also factors in other studies targeting the text recall abilities of the elderly (Adams, 1991; Adams, Labouvie-Vief, Hobart, & Dorosz, 1990; Jackson & Kemper, 1993). In these studies older subjects generally performed more poorly than younger subjects on recall of non-fable texts, narratives, and expository texts. The studies also outlined positive performance of older adults on selected discourse comprehension tasks. Adams et al. (1990) found that older adults did not differ from middle-aged adults in the story recall of fables and often produced more interpretive responses to non-fables. Older adults also produced more succinct written summaries than younger adults (Jackson & Kemper, 1993). This trend toward more interpretive or integrative recall of text-based information may be related to compensatory strategies developed by older adults to circumvent limited discourse processing capacity (Adams, 1991; Adams et al., 1990). Alternately, older adults may demonstrate superiority in summarizing texts due to experience and skill (Jackson & Kemper, 1993).

In summary, older adults tend to perform less well on discourse comprehension when task demands are increased. There is, however, considerable variability in performance between aged individuals especially when educational level and continued mental activity are considered as factors in performance (Shadden, 1997a). In addition, there are several discourse abilities that are well preserved in old age including recall of concrete information and summarization of text. The importance of reporting discourse comprehension abilities in the literature review is directly related to the integral role that

comprehension plays in the organization, sequencing, and production of all types of discourse.

Of particular interest to the current study is discourse production. Discourse production has been studied extensively in recent years. Ska and Joannette (1996) in their review of the literature found that research has shown (see Obler & Albert, 1984; Ska & Guenard, 1993) that the macrostructure of discourse is relatively untouched by the aging process unless cognitive demands of the task are increased. This view is in contrast with the findings of other researchers in the area of discourse production who have identified an apparent age-related decline in discourse performance across a variety of discourse tasks. Evidence by several researchers shows that productions of narrative, procedural, descriptive, and conversational discourse undergo age-related changes (Cannito, Hayashi, & Ulatowska, 1988; Glosser & Deser, 1992; North et al., 1986; Shewan & Henderson, 1988; Ulatowska, Hayashi, Cannito, & Fleming, 1986).

Glosser & Deser (1992) examined the discourse productions of middle-aged and elderly healthy subjects. The subjects produced narratives describing their families and then a past work experience. Discourse was analyzed on the microlinguistic level, using syntactic and lexical measures, and on the macrolinguistic level, using cohesion and thematic coherence measures. The elderly subjects were less adequate than middle-aged subjects on syntactic measures but the differences did not reach statistical significance. There was also no difference between middle-aged and elderly subjects on lexical measures such as verbal paraphasias (i.e., substitution of one lexical item for another) or the use of indefinite terms (e.g., nonspecific nouns or pronouns). However, elderly subjects obtained significantly lower ratings of global thematic coherence producing

more verbalizations that were incoherent and unrelated to the topic introduced when compared to their middle-aged counterparts. These results show that elderly individuals often maintain syntactic and lexical forms or the microlinguistics of language production while simultaneously experiencing a breakdown in the organization and coherence of overall discourse.

Ulatowska et al. (1986) also found differences between middle-aged and elderly subjects on a variety of tasks. The subjects were all college-educated and lived in a Roman Catholic convent. In this study, the subjects produced three types of narrative discourse; retell of a simple narrative, retell of a complex narrative, and a self-generated account of a memorable experience. The subjects also produced a description of two different procedures, one designed to be simple and familiar and a more complex activity. The samples were analyzed for noun/pronoun proportion, ambiguous reference, syntactic/semantic complexity, as well as comprehension. The elderly subjects produced more pronouns than middle-aged subjects in the complex story retell, procedural discourse tasks, and the memorable experience narrative. The elderly subjects also produced more instances of ambiguous reference. While the elderly subjects produced fewer noun types and more general nouns than middle-aged subjects, no significant differences in syntactic ability were found between the two groups.

Shewan & Henderson (1988) analyzed a number of syntactic measures, including number of utterances, sentence complexity, percentage of grammatical errors, paraphasias, and repetitions on a picture description task. The subjects, aged 40 – 79, represented a range of socioeconomic and educational backgrounds. No statistically significant differences were found between middle-aged and elderly subjects on any of

the measures analyzed by the investigators. This is consistent with the results of Glosser & Deser (1992) and Ulatowska et al. (1986) on the relative preservation of syntactic skills in the elderly. The two groups qualitative differences did arise. Normal elderly subjects (North et al. (1986) investigated age related differences between middle-aged subjects (mean age=45.6) and elderly subjects (mean age=76.2) in story retell, procedural discourse, picture description, and narrative production tasks. The subjects were two groups of college-educated women from a Roman Catholic order. The narrative used for the story retell task was a 600 word modified version of the O'Henry Story. The subjects were required to produce an oral and written narrative for the retell task. Elderly subjects were unable to recall as many explicit propositions on the story retell task as middle-aged subjects. No statistical difference was found between middle-aged subjects and older subjects on selected measures in the picture description, narrative production, or procedural discourse tasks.

To a lesser degree studies in aging have investigated the effects of the aging process on referential cohesion. It is well known that referential cohesion is the most commonly occurring cohesive device in discourse and errors of referential cohesion diminish message clarity to the listener (Glosser, 1993; Ripich & Terrell, 1988; Ulatowska, et al., 1986). It is important, therefore, to be able to distinguish between levels of referential ambiguity that are consistent with aging and levels that represent disordered communication. Ripich and Terrell (1988) investigated structural (nonpropositional elements) and semantic (reference, conjunction, and ellipsis) cohesion in normal elderly and elderly individuals with senile dementia of the Alzheimer type (SDAT). Although this study did not specifically address the effects of aging on the use

of cohesion in discourse it did yield valuable information on normal versus disordered cohesion in the elderly. Ripich & Terrell (1988) found that while errors in cohesion did not distinguish the two groups qualitative differences did arise. Normal elderly subjects produced more appropriate cohesion than SDAT subjects (89.7% versus 75.8%). Absence of a clear referent was cited as a common disrupter of cohesion in both groups; however, these errors did not affect the overall coherence of the discourse produced.

Pratt, Boyes, Robins, & Manchester (1989) investigated narrative cohesion in the story retellings of younger, middle-aged, and older adults. Their findings indicated that additions and ambiguities of reference accounted for 98% of all referential errors in the stories produced by all subjects. The elderly group produced more referential errors than both the middle-aged and younger groups. Elderly subjects were also less likely to use character names in their retellings, which correlated at a significant level with referential errors.

The studies outlined above have yielded valuable information that has added to our understanding of language changes in the elderly. Despite these efforts normative information regarding language changes associated with age is limited (Chapman & Ulatowska, 1991). It is also evident from the above studies that investigations of language changes in the elderly have primarily been conducted with populations that are not truly representative of the diversity within the aging community. Many of the studies outlined in the above text make no mention of the racial or ethnic background of the participants. When reference is made to racial or ethnic make-up of the participants, overwhelmingly the pool consists of Anglo-Americans (Caucasian). It can only be assumed that the subject pools of most major aging research in speech-language

pathology is devoid of individuals from culturally and ethnically diverse backgrounds. Several authors have noted the absence of research regarding the normal speech, language, and hearing of individuals from culturally and linguistically diverse backgrounds (Payne, 1997; Payne-Johnson, 1992; Shadden, 1997b; Wallace & Freeman, 1991). This trend is not unique to the study of language in the elderly. Medicine, psychology, and sociology are related fields that have also struggled with this issue. For example, in clinical trials research the number of elderly included in studies is generally small and the number of black elderly even smaller (Knuckles & Brooks, 1988). The lack of inclusion of minority subjects is due to a number of factors including: 1) inexperience of researchers in the recruitment and retention of minority subjects and 2) reluctance of minority groups to participate in research (Harris, 1996).

The importance of conducting research on the normal language characteristics of individuals from culturally and linguistically diverse backgrounds becomes apparent when the incidence of neurological impairment and the resultant communication deficits in these populations are examined. Wallace and Freeman (1991) cite that African-Americans, Hispanics, Native Americans, and Asian and Pacific Islanders are at risk for neurological impairment due to a number of factors including CVA, head injury, substance abuse, and dementia. CVA and traumatic brain injury were the most common causes of neurological impairment comprising 88% of the caseload at surveyed hospitals (Wallace & Freeman, 1991). Alzheimer's disease is also more prevalent in aging African-Americans than in their White counterparts (Espino & Lewis, 1998). The African-American elderly are at a greater risk for hypertension, heart disease, and stroke than their non-minority counterparts (Payne-Johnson, 1992). Given these increased risk

factors coupled with the rising number of African-American elderly it is likely that increasing numbers of the African-American adult population will be in need of language intervention due to neurological impairment.

The lack of normative data on the discourse skills of aging African-Americans is troubling given the incidence of neurological impairment in this population. Normative data would provide more accurate measures of the characteristics of language in aging African-Americans as well as the pre-morbid communicative abilities of this population (Payne-Johnson, 1992). Discourse provides a powerful tool for identifying function and/or deficit in communication skills. Discourse is a complex amalgamation of individual experiences, influences, differences, and sociocultural factors (Hyter & Westby, 1996) and is thus not only an appropriate measure of communicative competence but also is more likely to reveal language differences that are unique to various cultures. Therefore, discourse allows clinicians to evaluate an individual's ability to manipulate language within both a social and cultural context, a factor important in assessing communicative competence. The current status of research, however, leaves clinicians with a lack of information regarding the communication skills of aging African-Americans. Such information would provide clinicians with a useful tool to appropriately diagnose disordered communication in their African-American clients. Without sufficient information on narrative characteristics of different cultures the likelihood of erroneous conclusions regarding the communicative competence of individuals from linguistically and culturally diverse backgrounds increases (Wallace, 1996). Even if such individuals are appropriately identified, intervention strategies may not be ideally tailored to specific needs and linguistic profiles.

Studies conducted on language attributes of African-Americans have centered on isolating dialectal differences attributable to African-American English (AAE) (Labov, 1972; Peters, 1983; Washington & Craig, 1994; Williams & Wolfram, 1977). These studies have typically focused on the phonologic, morpho-syntactic, and pragmatic parameters of speech and language. Several writers such as Smitherman-Donaldson (1988), Labov (1972), and Kochman (1981) have argued that studies restricted to the structure of language, particularly specific dialectal variations, used by African-Americans detracts from the view that language is a valuable communication tool. Smitherman (1997) further states that the language of African-Americans, dialect dense or not, is a communication system that serves to connect communities whether biologically related or not. Additionally much of the aforementioned research has mainly centered upon the development of AAE in children.

To date only a few studies have looked at language measures and the language skills of African-American adults (Harris, 1993; Ripich, Carpenter, & Ziol, 1997; Ulatowska, Chapman, Hill, Thompson, Parsons, & Wertz, 1998). However, these studies have tended to focus on disordered communications in aphasia or Alzheimer disease (Ripich et al., 1997; Ulatowska et al., 1998). They have failed to investigate language skills that could be used to establish norms for communicative competence in this diverse community of aging individuals. Discourse provides a medium to investigate not only surface or sentential level characteristics of an individual's language or dialect but also intersentential and macrolinguistic features of discourse such as cohesion, coherence, and proposition density. This study will attempt to correct this oversight in the literature and

provide normative data that can be referenced by clinicians in their assessment of their communicatively disordered African-American patients.

CHAPTER II

METHODS

Participants

Twenty volunteer participants, aged 35 to 90 (Appendix A) were recruited from Oklahoma City and Langston area churches and community organizations. The participants were divided into two groups. Group 1 had ten participants between the ages of 35 and 50. Ten participants were assigned to Group 1. Participants in Group 2 were between the ages of 65 and 80. A total of ten participants were in Group 2. All participants had a minimum educational level of a high school diploma (or its equivalent) and a maximal educational level no higher than a Bachelor's degree. In addition, all participants were independently living in the community. Independent living was defined as living alone, with a spouse, or with family members in an apartment, house, or senior residential community (Payne, 1997) and having the ability to perform independent activities of daily living such as meal preparation, shopping, health care, and housekeeping (Willis, 1996).

All of the participants were native speakers of English. To be included in the study, each participant passed the Speech Discrimination Screening Task from the Arizona Battery of Communication Disorders of Dementia (ABCD) (Bayles & Tomoeda, 1993). Speech discrimination screening was conducted using the ABCD to ensure that

participants could adequately hear speech at conversational levels. Participants were also required to complete a medical history and demographic questionnaire (Appendix C). Participants were excluded from this study if they presented with a history of any of the following: psychological disorders, cognitive disorders, dementia, cerebrovascular accident, head injury, cancer, uncontrolled diabetes, uncontrolled hypertension, past or current history of alcohol or substance abuse, learning disability, or treatment for speech or language disorder or delay.

The data collected on the participants in this study was collected at local and metropolitan churches, a community facility, or the home of the participants.

Procedures

Tasks

All of the participants in this study completed the same tasks. Data were collected from each participant individually in one 30 minute to one-hour session. The first portion of each session was devoted to speech discrimination screening and completion of the participant questionnaire. The second portion of the session was dedicated to the collection of discourse samples from the participant.

An African-American examiner collected all data. To ensure uniformity of procedures each participant received the same set of instructions for each task. All instructions and feedback were given using Standard American English (SAE). The directions for completion of the required tasks were read aloud by the examiner from typewritten copy (Appendix D). A copy of the instructions for each task was also made available in written format in large typeface to each participant. A copy of the directions

was visually present for the participants throughout the entire session for reference, if needed. Completion of the two tasks took approximately 45 minutes for participants in the elderly group (Group 2) and approximately 25 minutes for participants in the middle-aged group (Group 1). Order of presentation of the two tasks was randomized.

Personal Narrative Procedures: Each of the participants produced an oral narrative of a memorable experience. The participant was asked to talk for at least five minutes. Additionally, the participants were asked to be as detailed as possible and instructed to take as much time as needed to complete the task. The examiner had minimal verbal participation during the narrative and confined responses to discourse continuations such as “uh-huh” or “mm-hmm” and to general questions such as “What else happened?” or “Can you tell me anything more?” The examiner also gave generic reinforcement such as “You’re doing fine”, if necessary. Each session was audio-taped using a Califone 5200AV Series cassette recorder and Maxell Professional Industrial Communicator Series C90 cassette tapes. Each sample was transcribed orthographically verbatim for analysis. Contextual notes including gesturing, intonation, volume, or other situational variables (e.g., loud noises or a person entering the room) were included in the written record when this information could be preserved.

Story Retell Procedures: Each of the participants verbally reproduced one story orally presented to them by the examiner. The “Lost Wallet” story (Appendix E) from the Story Retelling - Immediate subtest of the ABCD (Bayles & Tomoeda, 1993) was used as the stimulus item for this study. Procedures used in the standard administration of the Story Retelling - Immediate Subtest in the ABCD were followed in the current task.

Each participant was told that a story would be presented orally by the examiner. The examiner instructed the participant as follows: "I am going to tell you a short story. When I am done, I want you to tell it back to me." The examiner then read the story aloud to the participant. The story retell was audio-taped using a Califone 5200AV Series cassette recorder and Maxell Professional Industrial Communicator Series C90 cassette tapes. Each sample was transcribed orthographically verbatim for analysis.

Measures

Once transcribed, each sample was segmented into terminal units (T-units). The purpose of the T-unit is to segment continuous language (Hunt, 1970, Shadden, 1998). A T-unit consists of one main clause plus any subordinate clauses or non-clausal structures attached to or embedded in the main clause. Samples were then edited for extraneous verbal material that did not contribute to the language unit produced. Mazes (e.g., "um", "uh"), fillers (e.g., "you know", "like"), unintelligible words, and revisions were not included in total word counts or subsequent analyses. Each sample collected was then analyzed for selected measures of productivity, syntax, dialect, semantics, and referential cohesion. The following parameters were measured:

Productivity

- Total number of words produced
- Total number of T-units produced

Syntactic measures

- Number of words per T-unit

- **Number of sentence fragments.** Fragments were defined as utterances (e.g., pronouns, plural, and possessive markers) that lacked either a subject or predicate (or sometimes both). These utterances were not active revisions or elliptical responses. The total number of sentence fragments was tallied.

Example: "When I was a girl...um...Teenagers today have so many opportunities."

- **Rate of occurrence of grammatical errors.** Grammatical errors were defined as omission of the following structures: the subject, the main verb (excluding zero copula or auxiliary), required function words (articles, demonstratives, prepositions, clausal coordinators).

Additionally, changes in word order that diminished the understanding of the utterance were counted as errors. Grammatical errors were computed as a proportion of the total number of T-units produced.

Example: "I went into emergency room." (missing article "an" or "the")

Dialect features

Syntactic measures may be affected by the presence of AAE features in the discourse of participants. Dialect features were not classified as grammatical errors. Rate of occurrence of dialect features was computed as a proportion of the total number of T-units produced. The following grammatical features attributable to AAE dialect were analyzed separately from the grammatical features above (Owens, 1996; Washington, 1996):

Omission of copula or auxiliary "be"

"She sick."

Figure 1. Omission of grammatical morphemes (i.e., past tense, plural, and possessive markers)

Figure 1. Omission of grammatical morphemes (i.e., past tense, plural, and possessive markers)

Subject-verb mismatch

"He *like* candy."

Pronoun substitution

"*They* house is green."

Habitual use of "be"

"She *be* tripping."

Double modals

"I *might could* go."

Perfect construction

"He *been* gone."

Double/Triple negation

"*Don't nobody* go over there"

Miscellaneous dialect features

"She *sho* 'll (sure) is pretty."

"*Imma* meet you over there."

"We're *fixinta* go."

Semantic measures

Frequency of occurrence of the following semantic errors was computed as a proportion of the total T-units produced.

- Lexical errors were defined as an uncorrected substitution of one lexical item by another lexical item.

Example: "That *cake* has sharp thorns." (Target word: *rose*)

- Indefinite terms were defined as use of terms such as "whatever", "something", "thing", "stuff", "junk."

Discourse level skills were analyzed for frequency of referential cohesive ties (both demonstrative and personal) for both the story retell task and the personal narrative.

Figures were obtained for the total number of referential cohesive ties and the rate of cohesive ties per number of total of T-units produced, according to criteria established by Liles & Coelho (1998). Cohesive ties were analyzed in accordance with procedures developed by Liles & Coelho (1998). A word is identified as a cohesive marker if its meaning cannot be derived directly and the listener must search outside of that utterance for the completed meaning (Liles & Coelho, 1998). Halliday and Hasan (1976) delineated five linguistic categories of meaning relations or cohesive devices: reference, conjunction, lexical, substitution, and ellipsis. For this study, data analysis was limited to reference due to its common occurrence in discourse as compared to other cohesive devices (Glosser, 1993; Ripich & Terrell, 1988; Ulatowska, et al., 1986). Data were analyzed as follows (adapted from Liles & Coelho, 1998):

Reference: Information regarding the marker being referred to is contained in the preceding (anaphora) or following (cataphora) sentence.

- a. Personal Reference (e.g., he, she, it, they, one): personal pronouns, possessive determiners, and possessive pronouns that refer to the identity of a person, object, or event.

Example: Jeff is a teacher. *He* works in Washington.

Tom took the picture out of the packaging. He decided to hang *it* up on the wall.

- b. Demonstrative Reference (e.g., this, that, there, those): identifies the referent by location in place or time.

Example: I went to the deli for lunch. I saw an old friend *there*.

Finally, samples were analyzed for the rate of correct usage of these referential cohesive ties. Cohesive adequacy was analyzed according to criteria established by Liles & Coelho (1998). Ties were scored as correct if they had a clear referent in a preceding utterance. A tie was incomplete or in error if it had an absent or ambiguous referent. The total number of correct ties was analyzed as a proportion of the total number of referential cohesive ties produced to yield a rate of correct use.

Reliability

A second examiner, an Anglo-American graduate student in Communication Sciences and Disorders, repeated the analysis procedures for twenty-five percent of the samples ($n=5$) for both the story retell and the personal narrative tasks. The second examiner was trained on the analyses used in this study by the first examiner until she felt comfortable with all measures. The samples were randomly selected. The second examiner was not told the group membership of individual participants. Reliability data was collected for each of the twelve measures detailed above.

Initial inter-examiner agreement was 99% and 98% for total number of words and total number of T-units respectively. The syntactic measures had reliability of 97% for total number of words per T-unit, 88% for number of fragments, and 45% for grammatical errors. Dialect was found to have inter-examiner reliability of 83%. Lower percentages for grammatical errors and dialect features were directly related. Confusion over classification of dialect features and grammatical errors was remedied by re-training of the second examiner by the first examiner. Any further disagreements were resolved

by discussion by both examiners until a consensus was reached. Final agreement of 94% was reached for number of fragments and 100% for both grammatical errors and dialect.

The semantic measures of lexical errors and indefinite terms reached 100% and 97% inter-examiner agreement respectively. Referential cohesion measures had a relatively high level of inter-examiner agreement. For the total number of attempts at referential cohesion, rate of referential cohesion per total number of T-units, total number of correct referential cohesive ties, and cohesive adequacy inter-examiner agreement was as follows: 90%, 91%, 94%, and 92%.

Analysis

Descriptive statistical measures were to describe the frequency of productivity, syntactic, semantic, AAE dialect features, and referential cohesive devices under both experimental conditions for both groups. The means and standard deviations were determined for each group on both the story retell and personal narrative tasks. Between group differences were analyzed using Independent sample t-Tests in measures of productivity, syntax, semantics, dialect features, and cohesion. On measures that reached significance level on the t-Tests, Group (2) x Task (2) analysis of variance (ANOVA) procedures was used to determine whether main effect or an interaction between group member and task accounted for the differences between the groups.

CHAPTER III

RESULTS

The middle-aged and elderly participants were compared across both story retell and personal narrative tasks. To determine whether there were group differences Independent Sample t-Tests were performed on the twelve measures for each task. Summaries of the differences between the middle-aged and elderly groups on the story retell task are presented in Table 1. Results of the differences on the personal narrative task for middle-aged and elderly participants are presented in Table 2.

ANOVA Analysis

To explore how group and task interact, Group (2) x Task (2) analyses of variances (ANOVAs) were run on selected dependent variables. Specifically, six ANOVAs were run after analysis of group/task means and T-tests results indicated a significant interaction effect was a possibility. Results reported below are grouped according to the broad categories of productivity, syntactic, dialect, semantic, and cohesion measures.

Productivity Measures

Total number of words

For the story retell task, the t-Test did not reveal significant differences between the groups. Middle-aged and elderly participants produced an average of 64.7 and 66.10

Table 1Results of t-Tests

Means, standard deviations (SD), t values ($df = 1, 18$), and significance levels for differences between groups - Story Retell Task

Measures	Middle-aged		Elderly		t	Sig. Level (2-tailed)
	Mean	SD	Mean	SD		
<u>Productivity</u>						
Total # of words	64.7	17.73	66.10	24.60	-.146	.886
Total # of T-units	7.0	2.16	7.30	2.79	-.269	.791
<u>Syntactic</u>						
Words per T-unit	9.41	1.418	9.51	2.327	-.108	.915
# of fragments	0	0	0	0	0	0
Rate of grammatical errors	.0278	.060	.020	.0632	.282	.781
<u>Dialect</u>						
Rate of dialect features	0	0	.0861	.1052	-2.589	.019*
<u>Semantic</u>						
Rate of lexical errors	0	0	.0200	.063	-1.000	.331
Rate of indefinite term	0	0	.0577	.111	-1.640	.118
<u>Cohesive ties per T-unit</u>						
Total # of attempts	10.40	3.57	9.80	4.44	.333	.743
Total # of correct ties	10.00	3.37	9.10	4.56	.502	.622
Rate of ties per T-unit	1.470	.27	1.434	.536	.190	.851
<u>Cohesive Adequacy</u>						
Rate of correct cohesive ties	.967	.043	.898	.180	1.186	.251

0 = feature not present

* significant at $p < 0.05$

Table 2

Results of t-Tests

Means, standard deviations (SD), t values ($df = 1, 18$), and significance levels for differences between groups - Personal Narrative Task

Measures	Middle-aged		Elderly		t	Sig. Level (2-tailed)
	Mean	SD	Mean	SD		
<u>Productivity</u>						
Total # of words	398.1	93.23	416.20	235.73	-.226	.824
Total # of T-units	37.90	10.81	49.20	26.13	-1.264	.222
<u>Syntactic</u>						
Words per T-unit	10.68	1.255	8.614	2.176	2.605	.018*
# of fragments	1.00	1.05	1.10	1.45	-.176	.862
Rate of grammatical errors	.008	.013	.067	.067	-2.724	.014*
<u>Dialect</u>						
Rate of dialect features	.058	.063	.163	.127	-2.339	.031*
<u>Semantic</u>						
Rate of lexical errors	.003	.009	.006	.013	-.637	.532
Rate of indefinite term	.063	.052	.044	.044	.912	.374
<u>Cohesive ties per T-unit</u>						
Total # of attempts	24.10	8.63	37.50	39.81	-1.040	.312
Rate of ties per T-unit	.651	.234	.646	.328	.034	.973
Total # of correct ties	21.10	7.13	28.50	38.41	-.599	.557
<u>Cohesive Adequacy</u>						
Rate of correct cohesive ties	.889	.088	.637	.215	3.423	.003*

0 = feature not present

* significant at $p < 0.05$

words respectively. The narrative task also did not reveal significant differences on the total number of words produced between the groups. Middle-aged participants produced an average of 398.1 words while the elderly participants produced 416.20. Although these measures did not show a significance level based on group membership it was important to determine whether task or an interaction between task and age created an effect. Therefore, a 2 x 2 ANOVA was used to determine whether any effect on these parameters was present. Results are presented in Table 3 below.

Table 3: Total Number of Words

ANOVA: Two-Factor With Replication						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Group	950.625	1	950.625	0.058	0.811	4.11
Task	1167931	1	1167931	71.676	<0.001*	4.11
Group * Task	697.225	1	697.225	0.043	0.837	4.11
Within	586601.5	36	16294.49			
Total	1756180	39				

* significant at $p < 0.05$

A task main effect was present on the total number of words produced independent of age. Both middle-aged and elderly participants produced more words on the personal narrative task than the story retell task. There was no interaction effect.

Total number of T-units

For the story retell task, the t-Test did not reveal significant differences between the groups. Middle-aged and elderly participants produced an average of 7.00 and 7.30

T-units respectively. The narrative task also did not reveal significant differences on the total number of T-units produced between the groups. Middle-aged participants produced an average of 37.90 T-units while the elderly participants produced 49.20. Again, while these measures did not show a significance level based on group membership it was important to determine whether task or an interaction between task and age created an effect. Therefore, a 2 x 2 ANOVA was performed to determine whether any effect on these parameters was present. Results are presented in Table 4 below.

Table 4: Total Number of T-units

ANOVA: Two-Factor With Replication

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Group	336.4	1	336.4	1.657	0.206	4.11
Task	13249.6	1	13249.6	65.281	<0.001*	4.11
Group * Task	302.5	1	302.5	1.490	0.230	4.11
Within	7306.6	36	202.961			
Total	21195.1	39				

* significant at $p < 0.05$

The task variable demonstrated significance at the $p < 0.001$ level. Again, both groups overall produced significantly more T-units on the personal narrative task than the story retell task. These results represent that task had a salient effect on the total number of T-units produced. The interaction of group and task was not significant.

Syntactic Measures

Words per T-unit

For the story retell task, the t-Test did not reveal significant differences between the groups. Middle-aged participants produced an average of 9.41 words per T-unit. Elderly participants produced 9.51 words per T-unit. The narrative task revealed a significant difference on the t-Test at the $p=0.020$ level. Middle-aged and elderly participants produced an average of 10.68 and 8.614 words per T-unit respectively. A 2 x 2 ANOVA was warranted to determine whether main effects or interaction effects existed. Results of the 2 x 2 ANOVA are presented in Table 5 below.

Table 5: Number of Words per T-units

ANOVA: Two-Factor With Replication

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Group	9.761	1	9.761	2.843	0.100	4.11
Task	0.342	1	0.342	0.099	0.754	4.11
Group * Task	11.686	1	11.686	3.403	0.073	4.11
Within	123.606	36	3.433			
Total	145.395	39				

* significant at $p<0.05$

Neither group nor task showed a main effect; however, the Group x Task interaction approached significance at the $p=0.073$ level. This Group x Task interaction demonstrates that there was a differential effect on total number of words produced by both groups based on the type of task undertaken. In middle-aged participants, the total

number of words per T-unit increased from 9.41 on the story retell task to 10.68 on the personal narrative task. The converse was true for elderly participants. The average total number of words per T-unit produced by the elderly group decreased from 9.51 in the story retell task to 8.614 in the personal narrative task. Elderly participants tended to shorten their utterances in response to the more complex personal narrative task.

Number of fragments

For the story retell task, the t-Test did not reveal significant differences between the groups. Neither middle-aged nor elderly participants produced any sentence fragments on the story retell task. The narrative task also did not reveal significant differences on the sentence fragments produced between the groups. Middle-aged participants produced an average of 1.00 fragments per T-unit while the elderly participants produced 1.10. Overall, there was a relatively low occurrence of fragments produced by both groups on the narrative task.

Rate of grammatical errors

For the story retell task, the t-Test did not reveal significant differences between the groups. Middle-aged participants produced an average rate of 0.028 grammatical errors per T-unit. Elderly participants produced 0.020 grammatical errors per T-unit. The t-Test on the narrative task; however, revealed a significant difference on the dependent variable of rate of grammatical errors at the $p=0.022$ level. Middle-aged and elderly participants produced an average of 0.008 and 0.067 words per T-unit respectively. A 2 x 2 ANOVA was warranted to determine main effect versus interaction effect on the dependent variable. Results are presented below in Table 6.

Table 6: Rate of Grammatical Errors per # of T-units

ANOVA: Two-Factor With Replication

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Group	0.008	1	0.008	2.594	0.116	4.11
Task	0.002	1	0.002	0.833	0.367	4.11
Group * Task	0.013	1	0.013	4.261	0.046*	4.11
Within	0.106	36	0.003			
Total	0.129	39				

* significant at $p < 0.05$

A Group x Task interaction effect was present for the rate of grammatical errors at the $p = 0.046$ significance level. The groups had comparable error rates on the story retell task. On the personal narrative task; however, error rate diverged with the elderly being more error prone, while middle-aged participants decreased their error rate. Although elderly participants produced more grammatical errors on the personal narrative task than their middle-aged counterparts, the effects of age alone were not enough to overcome the effect of task.

Dialect Measures

Rate of dialect features

For the story retell task, the t-Test revealed a significant difference between the groups at the $p = 0.029$ level. Middle-aged participants produced no dialect features in their retells. Elderly participants produced an average rate of 0.086 dialect features per T-unit. The narrative task also revealed a significant difference on the t-Test at the $p = 0.036$ level.

Middle-aged and elderly participants produced an average rate of 0.058 and 0.127 dialect features per T-unit respectively. A 2 x 2 ANOVA was warranted to determine main effects versus interaction effects on the dependent variable average rate of dialect features per T-unit. Results of the 2 x 2 ANOVA are presented in Table 7 below.

Table 7: Rate of dialect features per number of T-units

ANOVA: Two-Factor With Replication

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Group	0.091	1	0.091	11.668	0.002*	4.11
Task	0.046	1	0.046	5.891	0.020*	4.11
Group * Task	0.001	1	0.001	0.112	0.740	4.11
Within	0.281	36	0.008			
Total	0.418	39				

* significant at $p < 0.05$

The results of the ANOVA indicate that there was a statistically significant main effect on the use of dialect for both group and task, $F(1, 36) = 11.668$, $p = 0.002$, and task, $F(1, 36) = 5.891$, $p = 0.020$ respectively. Elderly participants overall produced more dialect than middle-aged participants on both tasks; however, both groups used more dialect features on the personal narrative task than on the story retell task. No interaction effect existed for the dependent variable.

Semantic Measures

Rate of lexical errors

For the story retell task, the t-Test did not reveal significant differences between the groups. Middle-aged participants produced no lexical errors on the story retell task. Elderly participants produced an average rate of 0.02 lexical errors per T-unit. The narrative task also did not reveal significant differences on rate of lexical errors per T-unit produced between the groups. Middle-aged participants produced an average of 0.003 lexical errors per T-unit while the elderly participants produced 0.006.

Rate of indefinite terms

For the story retell task, the t-Test did not reveal significant differences between the groups. Middle-aged participants produced no indefinite terms on the story retell task. Elderly participants produced an average rate of 0.058 indefinite terms per T-unit. The narrative task also did not reveal significant differences on rate of indefinite terms per T-unit produced by the groups. Middle-aged participants produced an average rate of 0.063 indefinite terms per T-unit while the elderly participants produced 0.044.

Referential cohesion

Cohesive ties per T-unit

The t-Tests performed on the total number of attempts, rate of ties per T-unit, and total number of correct ties did not distinguish the groups on the story retell task (Table 1). A significant difference between the groups on the same dependent variables was not found for the narrative task as well (Table 2). The measure related to cohesive adequacy, the rate of correct ties, did not distinguish the two groups on the story retell task ($p=0.263$). However, the rate of correct ties yielded a significant difference for the

narrative tasks, $p=0.005$. While elderly participants did not produce significantly more cohesive ties they did tend to use those cohesive ties less effectively than the middle-aged group (elderly = 64%, middle-aged = 89%). Results of the 2 x 2 ANOVA for the rate of correct cohesive ties are presented below in Table 8.

Table 8: Rate of correct cohesive ties

ANOVA: Two-Factor With Replication

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Group	0.257	1	0.257	11.688	0.002*	4.11
Task	0.288	1	0.288	13.114	0.001*	4.11
Group * Task	0.083	1	0.083	3.7916	0.059	4.11
Within	0.791	36	0.022			
Total	1.420	39				

* significant at $p<0.05$

This ANOVA revealed two effects. Group membership was significant, $F(1, 36) = 11.668$, $p=0.002$, and there was also a significant task effect, $F(1, 36) = 13.114$, $p<0.001$. There was a borderline interaction effect between group membership and task, $F(1, 36) = 3.792$, $p=0.059$. These results reveal that while elderly participants used cohesion more poorly than middle-aged participants did, task played a differential role in the correct use of cohesion for each group. Middle-aged participants were able to maintain a percentage of cohesive adequacy of 88% on the personal narrative task while elderly participants' use diminished to 63%. This interaction trend indicates that both groups performed differently based on the task undertaken.

CHAPTER IV

DISCUSSION

The purpose of this study was to explore age-related changes in the language skills of normally aging African-American adults. This goal was undertaken by comparing middle-aged and elderly groups on productivity, syntactic, semantic, and cohesion level measures on two narrative tasks; story retell and personal narrative. Specifically, the total number of words produced and total number of T-units produced served as productivity measures. The total number of words per T-unit, the total number of sentence fragments produced, and the rates of occurrence of grammatical errors were designated as the syntactic measures. Semantic measures were the rate of occurrence of lexical errors and indefinite terms. Finally, referential cohesion was analyzed for the total number of referential cohesive ties, the rate of occurrence of cohesive ties per T-unit, the total number of correct referential cohesive ties, and the percentage of correct usage of those same ties.

Main Findings

Group Differences

Group differences arose on both the story retell and personal narrative task in a few well-defined areas. Comparison of the middle-aged and elderly participants on the story retell task revealed a statistically significant difference for the rate of occurrence of

dialect features with the elderly group using dialect more than their middle-aged counterparts.

Statistically significant differences arose in four areas when comparing the middle-aged and elderly participants on the personal narrative task. Significant differences were detected on the number of words produced per T-unit and on the rate of grammatical errors per T-unit. Elderly participants produced fewer words and more grammatical errors per T-unit. Dialect usage per T-unit was also higher in the elderly group. In addition, the percentage of correct referential cohesive ties was decreased in elderly participants as compared to their middle-aged counterparts.

Group by Task Interactions

Elderly participants produced significantly fewer words per T-unit on the personal narrative task. The nature of the task likely played a significant role on this differential performance. Personal narratives are a “free speech” task that introduces different cognitive-linguistic functions such as communicating one’s intentions, word retrieval, and discourse organization (Mackay & Abrams, 1996). Glosser & Deser (1992) in their study of macro- and micro-linguistic changes in aging individuals, which included a work experience narrative, found that older subjects produced fewer syntactically complete utterances than middle-aged subjects although these differences did not approach statistical significance. The measures in the current study (number of words per T-unit) and the Glosser and Deser study (complete intelligible verbalizations) are not equivocal; however, they are both rough estimates of syntactic complexity. Labov & Auger (1993) reviewed a longitudinal study of elderly speakers in Montreal. The older subjects in this study also had reduced syntactic complexity, as measured by subordination index, when

narratives were inserted in the interviews conducted. A conclusion drawn in that study and in a duplication of the Montreal study by Kemper, Kynette, Rash, Sprott, & O'Brien (1989) was that elderly subjects tended to reduce syntactic complexity in an attempt to convey ideas that were easier for their listener to understand. As in the present study, these reductions in syntactic complexity do not appear to affect the clarity of the message presented. Because discourse is such a complex process it is impossible to definitively ascertain whether the elderly subjects in this study were sensitive to their listener's needs and reduced syntactic complexity to compensate for reduced understanding.

An alternative theory is better supported by the presence of errors in grammar and referential cohesion in the discourse of elderly participants. It is likely that information processing and working memory deficits may have played a role in the reduced performance of elderly individuals in the current study. Information processing and working memory models indicate increased age reduces the ability to carry out complex cognitive tasks such as language production (Smith, 1996). Communication requires the assembly and execution of a number of skills, with correct syntactic construction and referential cohesion being among these.

The presence of grammatical errors did not predominate the discourse of elderly participants but it occurred more frequently than in the discourse of middle-aged participants. Elderly participants produced approximately six grammatical errors per 100 T-units produced. The type of grammatical errors that were found most often in the elderly individuals in this study were omissions of function words, for example "I went to emergency room" (omission of definite article "the"). Word order errors that diminished

meaning also occurred, for example, “(They) wanted *me to pay* so much a mile” (instead of “(They) wanted *to pay me* so much a mile.”). Examples are included in Appendix B.

The presence of less adequate referential cohesion was of particular interest. Although elderly participants did not attempt more referential cohesive ties per T-unit the correct use of those ties was decreased as compared to the middle-aged participants. This finding is not unlike other studies investigating the use of reference in discourse (Pratt et al., 1989; Ulawtowska et al., 1986). It is important to note that there was considerable variability within the elderly group with percentages of correct use of reference ranging from 31% to 81%. This disruption of reference may be attributable to the differences in narrative structure of elderly participants in comparison to middle-aged participants. Middle-aged participants in the current study tended to give a complete narrative of a single event. Of the ten elderly participants; however, six of them produced two or more narratives. Elderly participants often required more prompting from the examiner on the narrative task presumably to gain a comfort level prior to divulging personal information. This familiarity established with the examiner may have increased the level of presupposition by the elderly participants and thus decreased cohesive adequacy.

Clinical Implications

Dialect

When comparing the performance of the elderly on the story retell versus the personal narrative it was evident that the free form nature of the personal narrative highlighted more salient dialect, syntactic, and cohesive features of the participant's naturalistic language use. Although rate of dialect use was found to be statistically significant the actual number of dialect features associated with the task were relatively

low and were most often subject-verb mismatches (for example, “the girl seen her”). A listing of the types and frequency of dialect features is included in Appendix F.

Participants who used more dialect in the personal narrative task also tended to produce these features in their story retell. This is an indicator that dialect may be a more ingrained feature in the discourse of some elderly African-Americans. It should be noted that many of the elderly participants in the current study were recruited from the all Black town of Langston, Oklahoma. Many of these elderly individuals had lived in this area all of their lives. Alternately, some individuals had lived in the Oklahoma City metropolitan area and relocated to their home community upon retirement. These factors are included here to explain the influence they may have exerted over the use of dialect. Dialect is a powerful cultural and communicative tool in the African-American community.

Although, society at large may attach less value to non-standard dialects the characteristics of this community may have been more insulated from these societal opinions of AAE usage.

The factors of age of the participants and the race of the examiner also cannot be ruled out as factors. Most of the elderly participants were retired and thus have more control over the communicative interactions they choose to have with others. Because these individuals may interact more with other African-Americans and specifically African-Americans who are dialect users, their use of dialect is indirectly reinforced. Thus social context may heavily contribute to the use of dialect. This is in contrast to the working middle-aged participants who generally worked in environments where Standard American English was the norm. Finally, the elderly participants were relating an experience to a younger African-American examiner. This inter-generational and intra-

racial transmission of a life experience may well have contributed to the use of more dialect. In studies of African-American women, AAE use varied as a function of the race of their communicative partner (van Dijk, Ting-Toomey, Smitherman, & Troutman, 1997). African-American women use fewer AAE features when speaking to European-Americans than other African-Americans. The elderly participants in the current study may have used more dialect due to one or a combination of the above factors.

Grammatical Errors

The rate of grammatical errors was relatively low for the elderly group on the story retell task with an average rate of approximately 2 errors in every one hundred words produced. On the personal narrative task the elderly participants' error rate increased to approximately 6 errors per one hundred words. The presence of more grammatical errors by elderly participants in the personal narrative task may have contributed to or interacted with the presence of reduced syntactic complexity as measured by the number of words per T-unit. However, even with reduced syntactic complexity elderly participants still produced more grammatical errors. Clinically speaking, this appreciable increase in errors in the context of connected discourse could likely interrupt the message being conveyed. As with dialect, these findings indicate that the personal narrative task may give a more representative sample of an elderly individual's use of particular syntactic structures.

Cohesion

Referential cohesion measures, including rate per T-unit and rate of correct use, were also not found to be different between the groups. The nature of the story retell task; however, provides a syntactic, semantic, and cohesion model for discourse

production. In addition, the story retell task chosen for the current study did not provide a significant load on working memory. The retell contained only 74 words and was immediately retold. The story also did not contain multiple characters that would have required more referential cohesion abilities.

Elderly participants performed as well as middle-aged participants in cohesive adequacy on the story retell task but less well on the personal narrative. Again, the nature of the story retell task versus the personal narrative is a contributor to these observations. Cohesion also appeared affected by length of personal narratives in the elderly participants in this study. Longer narratives generally contained more cohesive attempts increasing the likelihood that error or incomplete ties would appear in the sample. The nature of the personal narrative task could have also played a role in the difference in cohesive adequacy between the middle-aged and elderly groups. Again, the elderly participants may have presupposed some level of shared knowledge with the examiner and provided less clear referents as a result. Similar conclusions for the use of ambiguous reference have been used to explain differences in other aging populations (Ulatowska et al., 1986).

Variable usage of particular sentential and intersentential discourse features serves as an indicator that prescribed assessment techniques such as those employed in formal test batteries for communication disorders and many informal techniques may not give reliable information regarding specific discourse skills in African-American elderly. This conclusion can be based on the presence of increased dialect features and grammatical errors in the personal narrative task when compared to the story retell task. The reduced cohesive adequacy of referential ties in the personal narrative is also a powerful indicator

that task complexity makes a difference in actual performance. The constrained nature of the story retell task did not highlight differences in referential cohesion between the groups; however, referential errors increased substantially in the elderly on the personal narrative tasks. This is not unlike performance seen in all aging individuals with respect to referential cohesion (Kemper, Rash, Kynette, & Norman, 1990; Pratt et al., 1989; Ulatowska et al., 1986).

These observations in the current study are indicators that the analysis of discourse level skills such as personal narratives can be an effective tool in proper assessment of African-American clients. There are two caveats to this statement. First, collection and analysis of discourse can be a time-consuming process. It is of the utmost importance that tasks that are truly representative of communicative competence and procedures that are easy to employ be developed. Second, the elderly participants in the current study were often initially reluctant to divulge the very stories that highlighted such interesting differences. This may have been due to unfamiliarity with research oriented data collection. As mentioned previously, elderly participants required more prompting and reinforcement. They often commented that they had nothing important to say or that nothing interesting had happened in their lives. The data collection, therefore, took more effort by the examiner. A conclusion that could be drawn is that if it was difficult for an African-American examiner to collect discourse samples from elderly individuals that it would be equally or more difficult for an examiner of another race, particularly White, to obtain such information. It is felt that such a conclusion would be in error. The experiences of the current examiner point to a methodological issue rather than a racial issue. Elderly participants, in this case African-American, may need to feel

a higher comfort level with speech-language clinicians prior to divulging a complex personal narrative. In addition, the participants in this study did require more reinforcement thus indicating that there may have been an increased need for interaction to gauge the listener's understanding and draw the listener into the experience. Again, this was not felt to be a negative but simply a difference between the middle-aged and elderly in this particular study.

Limitations and Future Research

One limitation of the current study is related to the relatively small number of participants in both groups. Larger groups may have decreased some of the variability found in both groups.

A second limiting factor was the relatively high educational level of the elderly participants (mean educational level = 14.05) as compared to their same age cohorts. Overall, 40% ($n = 4$) of the elderly participants in the current study had a college degree compared to 7% of African-Americans over age 65 in the general population (U.S. Bureau of the Census, 1998). This factor limits the generalizability of results gained in the current study to the larger elderly African-American population. Twenty percent of the middle-aged participants in the current study had a college degree, which more closely approximates the national average of 17% for African-American adults between the ages of 35 and 49 (U.S. Bureau of the Census, 1998).

These factors highlight the need for continued research with African-Americans across the life span. The main purpose for conducting this study was to initiate a normative database for language skills in the aging African-American population. To that end, this study has served to fill a void in the literature and provide a tool that

speech-language pathologists can use to more critically and accurately assess their African-American clients. It is clear that there are unique qualitative features present in African-American narratives including variable dialect use and narrative formation. There are also discourse features, such as syntax and referential cohesion ability that appear to mirror the larger population. While it may not seem important to note areas that do not denote differences between groups it is equally important as clinicians to have knowledge of similarities between groups, whether it be by age or ethnicity. It is equally important to know when a difference is significant. Without further research these determinations cannot be made.

Additional research on discourse skills within the diverse population of aging African-Americans, therefore, is imperative. Future research would be well served by including larger samples so that differences not only by age but also by educational level and occupation can be explored. This would provide a more representative subject pool and a basis for generalizing results to the larger population. Such a design would also provide speech-language pathologists with a powerful tool to estimate pre-morbid characteristics of an individual's language abilities rather than relying on gross generalizations based on race or ethnicity alone. Because variability in measures appeared to be affected by task in the present study, future studies involving different stimuli would provide valuable diagnostic information for clinicians.

In conclusion, this study represents a beginning to the initiation of a normative database of aging African-Americans and their language characteristics. The need to continuing research is paramount to the understanding of diverse populations.

Continuing research will provide a tool for speech-language pathologists to provide optimal services to all those that they encounter.

REFERENCES

- Adams, C. (1991). Qualitative age differences in memory for text: A life-span developmental perspective. Psychology and Aging, 6, 3, 323-336.
- Adams, C., Labouvie-Vief, G., Hobart, C. J., & Dorsz, M. (1990). Adult age group differences in story recall style. Journal of Gerontology: Psychological Sciences, 45, 1, P17-P27.
- Au, R., & Bowles, N. (1991). Memory influences on language in normal aging. In D. N. Ripich (Ed.), Handbook of geriatric communication disorders (pp. 293-306). Austin, TX: Pro-ed.
- Bayles, K., & Tomoeda, C. (1993). Arizona battery of communication disorders of dementia. Tucson, AZ: Canyonlands Publishing, Inc.
- Cannito, M., Hayashi, M., & Ulatowska, H. (1988). Discourse in normal and pathologic aging: Background and assessment strategies. Seminars in Speech and Language, 9, 2, 117-134.
- Chapman, S. B., & Ulatowska, H. K. (1991). Aphasia and aging. In D. N. Ripich (Ed.), Handbook of geriatric communication disorders (pp. 241-254). Austin, TX: Pro-ed.
- Cherney, L. R. (1998). Pragmatics and discourse: An introduction. In L. R. Cherney, B. Shadden, & C. Coelho (Eds.), Analyzing discourse in communicatively impaired adults (pp. 1-7). Gaithersburg, MD: Aspen Publishers.
- Espino, D. V., & Lewis, R. (1998). Dementia in older minority populations. The American Journal of Geriatric Psychiatry, 6, 2, S19-S25.
- Fein, D. (1983). The prevalence of speech and language impairments. American Speech-Language Hearing Association, 25, 37.
- Glosser, G. (1993). Discourse production patterns in neurologically impaired and aged populations. In H. Brownell & Y. Joanette (Eds.), Narrative discourse in neurologically impaired and normal aging adults (pp. 191-211). San Diego, CA: Singular Publishing.

Glosser, G., & Deser, T. (1990). Patterns of discourse production among neurological patients with fluent language disorders. Brain and Language, 40, 67-88.

Glosser, G., & Deser, T. (1992). A comparison of changes in macrolinguistic and microlinguistic aspects of discourse production in normal aging. Journal of Gerontology: Psychological Sciences, 47, 4, P266-P272.

Hale, C. (1992). A demographic profile of African Americans. In R. Braithwaite & S. Taylor (Eds.), Health issues in the black community (pp. 6-19). San Francisco: Jossey-Bass Publishers.

Halliday, M., & Hasan, R. (1976). Cohesion in English. London: Longman.

Harris, J. (1993). Stimulus-effects on monologic language samples elicited from African American women. Dissertation Abstracts International, 53, 120B, 6256.

Harris, J. (1996). Issues in recruiting African American participants for research. In A. Kamhi, K. Pollock, & J. Harris (Eds.), Communication development and disorders in African American children: Research, assessment, and intervention (pp. 19-34). Baltimore: Paul H. Brookes Publishing Company.

Holland, A., & Bartlett, C. (1985). Some differential effects of age on stroke-produced aphasia. In H. K. Ulatowska (Ed.), The aging brain: Communication in the elderly (pp. 141-155). San Diego, CA: College-Hill Press.

Hunt, K. W. (1970). Syntactic maturity of school children and adults. Monograph of the Society for Research in Child Development, 35, 1-78.

Hyter, Y. D., & Westby, C. E. (1996). Using oral narratives to assess communicative competence. In A. Kamhi, K. Pollock, & J. Harris (Eds.), Communication development and disorders in African American children: Research, assessment, and intervention (pp. 247-284). Baltimore: Paul H. Brookes Publishing Company.

Jackson, J. J. (1988). Social determinants of the health of aging black populations in the United States. In J. S. Jackson (Ed.), The black American elderly: Research on physical and psychosocial health (pp. 25-49). New York: Springer Publishing.

Jackson, J. S., Chatters, L., & Taylor, R. (1993). Status and functioning of future cohorts of African-American elderly. In J. S. Jackson, L. Chatters, & R. Taylor (Eds.), Aging in black America (pp. 301-318). Newbury Park, CA: Sage Publications.

Jackson, J., & Kemper, S. (1993). Age differences in summarizing descriptive and procedural texts. Experimental Aging Research, 19, 39-51.

Kemper, S. (1987). Syntactic complexity and elderly adult's prose recall. Experimental Aging Research, 13, 1, 47-52.

Kemper, S., Kynette, D., Rash, S., Sprott, R., & O'Brien, K. (1989). Life-span changes to adults' language: Effects of memory and genre. Applied Psycholinguistics, 10, 49-66.

Kemper, S., Rash, S., Kynette, D., & Norman, S. (1990). Telling stories: The structure of adults' narratives. European Journal of Cognitive Psychology, 2, 3, 205-228.

Kochman, T. (1981). Black and white: Styles in conflict. Champaign: University of Illinois Press.

Knuckles, B. N., & Brooks, C. A. (1988). Clinical trials and the black elderly: Issues and considerations. In J. S. Jackson (Ed.), The black American elderly: Research on physical and psychosocial health (pp. 354-366). New York: Springer Publishing.

Labov, W. (1972). Language in the inner city. Philadelphia: University of Pennsylvania Press.

Labov, W., & Auger, J. (1993). The effect of normal aging on discourse: A sociolinguistic approach. In H. Brownell & Y. Joanette (Eds.), Narrative discourse in neurologically impaired and normal aging adults (pp. 115-130). San Diego, CA: Singular Publishing.

Liles, B., & Coelho, C. (1998). Cohesion analyses. In L. R. Cherney, B. Shadden, C. Coelho (Eds.), Analyzing discourse in communicatively impaired adults (pp. 65-83). Gaithersburg, MD: Aspen Publishers.

MacKay, D., & Abrams, L. (1996). Language, memory, and aging: Distributed deficits and the structure of new-versus-old connections. In J. E. Birren & K. W. Schaie (Eds.), Handbook of the psychology of aging (pp. 251-265). San Diego, CA: Academic Press.

Manuel, R. C. (1988). The demography of older black in the United States. In J.S. Jackson (Ed.), The black American elderly: Research on physical and psychosocial health (pp. 25-49). New York: Springer Publishing.

North, A., Ulatowska, H., Macaluso-Haynes, S., & Bell, H. (1986). Discourse performance in older adults. International Journal of Aging and Human Development, 23, 4, 267-283.

Obler, L. K., & Albert, M. L. (1984). Language in aging. In M. L. Albert (Ed.), Neurology of aging. New York: Oxford.

Obler, L. K., Au, R., & Albert, M. L. (1995). Language and aging. In R. A. Huntley & K. S. Helfer (Eds.), Communication in later life (pp. 85-97). Boston: Butterworth-Heinemann.

Payne, J. (1997). Adult neurogenic language disorders: Assessment and treatment. San Diego, CA: Singular Publishing.

Payne, J. (1998). Ethnocultural dynamics and acquired aphasia. In M.T. Sarno (Ed.), Acquired aphasia (pp. 551-567). San Diego, CA: Academic Press.

Payne-Johnson, J. (1992). Communications and aging: A case for understanding African Americans who are elderly. American Speech-Language-Hearing Association, 34, 1, 41-44.

Peters, C. A. (1983). A pragmatic investigation of the speech of selected Black children. Unpublished doctoral dissertation. Howard University, Washington, DC.

Pratt, M. W., Boyes, C., Robins, S., & Manchester, J. (1989). Telling tales: Aging, working memory, and the narrative cohesion of story retellings. Developmental Psychology, 25, 4, 628-635.

Ripich, D., Carpenter, B., & Zioli, E. (1997). Comparison of African-American and white persons with Alzheimer's disease on language measures. Neurology, 48, 781-783.

Ripich, D., & Terrell, B. (1988). Patterns of discourse cohesion and coherence in Alzheimer's disease. Journal of Speech and Hearing Disorders, 53, 8-15.

Shadden, B. (1995). The use of discourse analyses and procedures for communication programming in long-term care facilities. Topics in Language Disorders, 15, 2, 75-86.

Shadden, B. (1997a). Discourse behaviors in older adults. Seminars in Speech and Language, 18, 2, 143-157.

Shadden, B. (1997b). Language and communication changes with aging. In B. Shadden and M. Toner (Eds.), Aging and Communication (pp. 135-170). Austin, TX: Pro-ed.

Shadden, B. (1998). Obtaining the discourse sample. In L. R. Cherney, B. Shadden, C. Coelho (Eds.), Analyzing discourse in communicatively impaired adults (pp. 9-34). Gaithersburg, MD: Aspen Publishers.

Shadden, B., & Toner, M. (1997). Introduction: The continuum of life functions. In B. Shadden and M. Toner (Eds.), Aging and Communication (pp. 3-17). Austin, TX: Pro-ed.

Shewan, C., & Henderson, V. (1988). Analysis of spontaneous language in the older normal population. Journal of Communication Disorders, 21, 139-154.

Ska, B., & Guénard, D. (1993). Narrative schema in dementia of the Alzheimer's type. In H. H. Brownell & Y. Joannette (Eds.), Narrative discourse in neurologically impaired and normal aging adults (pp. 299-316). San Diego, CA: Singular Publishing.

Ska, B., & Joannette, Y. (1996). Discourse in older adults: Influence of text, task, and participant characteristics. Journal of Speech-Language Pathology and Audiology, 20, 2, 101-108.

Smith, A. D. (1996). Memory. In J. E. Birren & K. W. Schaie (Eds.), Handbook of the psychology of aging (pp. 236-250). San Diego, CA: Academic Press.

Smitherman-Donaldson, G. (1988). Discriminatory discourse on Afro-American speech. In G. Smitherman-Donaldson & T. van Dijk (Eds.), Discourse and discrimination (pp. 144-175). Detroit: Wayne State University Press. (NEED PAGE NUMBERS)

Smitherman, G. (1997). Black language and the education of black children: One mo once. The Black Scholar, 27, 1, 28-35.

Terrell, B., & Ripich, D. (1989). Discourse competence as a variable in intervention. Seminars in Speech and Language, 10, 4, 282-297.

Ulatowska, H. & Chapman, S. B. (1991). Neurolinguistics and aging. In D. Ripich (Ed.), Handbook of geriatric communication disorders (pp. 21-37). Austin, TX: Pro-ed.

Ulatowska, H., Chapman, S. B., Hill, C., Thompson, J., Parsons, S., & Wertz, R. (1998). Discourse production in African-Americans with aphasia. Brain and Language, 65, 1, 236-239.

Ulatowska, H., Hayashi, M., Cannito, M., & Fleming, S. (1986). Disruption of reference in aging. Brain and Language, 28, 24-41.

U.S. Bureau of the Census. (1998). Educational attainment of persons 15 years old and over, by age, sex, race, and Hispanic origin: March 1998. Current Population Reports, P20-513. Washington, D.C.: U.S. Government Printing Office.

van Dijk, T. A., Ting-Toomey, S., Smitherman, G., & Troutman, D. (1997). Discourse, ethnicity, culture, and racism. In T. A. van Dijk (Ed.), Discourse as a social interaction (pp. 145-179). London: Sage.

von Eye, A., Dixon, R., A., & Krampen, G. (1989). Text recall in adulthood: The roles of text imagery and orienting tasks. Psychological Research, 51, 136-146.

Wallace, G., & Freeman, S. B. (1991). Adults with neurological impairment from multicultural populations: Results of a clinical survey. American Speech-Language-Hearing Association.

Wallace, G. (1996). Management of aphasic individuals from culturally and linguistically diverse populations. In G.L. Wallace (Ed.), Adult aphasia rehabilitation (pp. 103-119). Newton, MA: Butterworth-Heinemann.

Washington, J. A. (1996). Issues in assessing the language abilities of African American children. In A. Kamhi, K. Pollock, & J. Harris (Eds.), Communication development and disorders in African American children: Research, assessment, and intervention (pp. 35-54). Baltimore: Paul H. Brookes Publishing Company.

Washington, J. A., & Craig, H. K. (1994). Dialectal forms during discourse of poor, urban, African American preschoolers. Language, Speech, and Hearing Services in Schools, 37, 4, 816-823.

Williams, R., & Wolfram, W. (1977). Social dialects: Differences vs. disorders. Washington, DC: American Speech and Hearing Association.

Willis, S. L. (1996). Everyday problem solving. In J.E. Birren & K.W. Schaie (Eds.), Handbook of the psychology of aging (pp. 287-307). San Diego, CA: Academic Press.

APPENDIXES

APPENDIX A
SUMMARY OF PARTICIPANTS

SUMMARY OF PARTICIPANTS

Participant #	Age	Gender	Education Level
<u>Middle-aged Participants</u>			
1	50	Female	14
3	42	Female	16
4	48	Male	15.5
5	41	Female	14.0
6	47	Male	14.0
7	41	Male	12.0
8	45	Female	15.0
9	42	Male	13.5
10	45	Female	13.0
11	42	Female	16.0
Mean	44.3		14.3
n=10			
<u>Elderly Participants</u>			
1	67	Female	14.0
2	75	Male	11.0
3	65	Male	12.0
4	69	Female	12.0
5	79	Male	12.0
6	67	Male	15.5
7	65	Female	16.0
8	80	Female	16.0
9	67	Female	16.0
11	80	Female	16.0
Mean	71.4		14.05
n=10			

APPENDIX B

SUMMARY OF MEASURES BY GROUP AND TASK

Group 1 - Middle-aged
Story Retell Task

Participant #	# of words	# of T-units	#words/T-unit	# of fragments	# & rate of grammatical errors		# & rate of dialect features	
1	66	6	11.00	0	0	0	0	0
3	65	9	7.22	0	1	.11	0	0
4	81	10	8.10	0	0	0	0	0
5	77	8	9.63	0	0	0	0	0
6	87	9	9.67	0	0	0	0	0
7	39	5	7.80	0	0	0	0	0
8	69	6	11.50	0	0	0	0	0
9	30	3	10.00	0	0	0	0	0
10	70	8	8.75	0	0	0	0	0
11	63	6	10.50	0	1	.17	0	0
Mean	58.82	6.36	8.56	0	.20	.03	0	0
SD	17.73	2.16	1.42	0	.42	.06	0	0
Range	30 - 87	3 - 10	7.22-11.50	0	0 - 1	0 - .17	0	0

0 = feature not present

Group 2 - Elderly
Story Retell Task

Participant #	# of words	# of T-units	#words/T-unit	# of fragments	# & rate of grammatical error		# & rate of dialect features	
1	58	7	8.29	0	0	0	1	.14
2	39	3	13.00	0	0	0	0	0
3	127	13	9.77	0	0	0	4	.31
4	66	7	9.43	0	0	0	1	.14
5	52	5	10.40	0	1	.20	0	0
6	47	10	4.70	0	0	0	1	.10
7	55	6	9.17	0	0	0	1	.17
8	76	6	12.67	0	0	0	0	0
9	63	7	9.00	0	0	0	0	0
11	78	9	8.67	0	1	0	0	0
Mean	66.10	7.30	8.61	0	.10	.02	.80	.086
SD	24.60	2.79	2.18	0	.32	.06	1.23	.105
Range	39 - 127	3 - 13	4.70 - 13.00	0	0 - 1	0 - .20	0 - 4	0 - .31

0 = feature not present

Group 1 - Middle-aged
Story Retell Task

Participant #	# & rate of lexical errors		# & rate of indefinite terms		# of attempts - reference	# of correct ties	rate of ref. / T-units	% of correct ties
1	0	0	0	0	9	9	1.50	1.00
3	0	0	0	0	12	11	1.33	.92
4	0	0	0	0	12	12	1.20	1.00
5	0	0	0	0	15	15	1.88	1.00
6	0	0	0	0	13	12	1.44	.92
7	0	0	0	0	8	8	1.60	1.00
8	0	0	0	0	8	8	1.33	1.00
9	0	0	0	0	3	3	1.00	1.00
10	0	0	0	0	14	13	1.75	.93
11	0	0	0	0	10	9	1.67	.90
Mean	0	0	0	0	10.40	10	1.47	.97
SD	0	0	0	0	3.57	3.37	.26	.04
Range	0	0	0	0	3 - 15	3 - 15	1.00-1.88	.92 - 1.00

0 = feature not present

Group 2 - Elderly
Story Retell Task

Participant #	# & rate of lexical errors		# & rate of indefinite terms		# of attempts - reference	# of correct ties	rate of ref. / T-units	% of correct ties
1	0	0	0	0	11	7	1.57	.64
2	0	0	0	0	5	5	1.67	1.00
3	0	0	1	.08	15	15	1.15	1.00
4	0	0	0	0	8	8	1.14	1.00
5	1	.20	0	0	9	9	1.80	1.00
6	0	0	0	0	2	1	.20	.50
7	0	0	2	.33	7	7	1.17	1.00
8	0	0	1	.17	12	11	2.00	.92
9	0	0	0	0	13	12	1.86	.92
11	0	0	0	0	16	16	1.78	1.00
Mean	.10	.02	.40	.06	9.80	9.10	1.43	.90
SD	.32	.06	.70	.11	4.44	4.56	.54	.18
Range	0-1	0-.2	0-2	0-.33	2-16	1-16	.20-2.00	.50-1.00

0 = feature not present

Group 1 - Middle-aged
Personal Narrative
Task

Participant #	# of words	# of T-units	#words/ T-unit	# of fragments	# & rate of grammatical error		# & rate of dialect features	
1	398	36	11.06	2	0	0	0	0
3	405	47	8.62	1	0	0	1	.02
4	606	61	9.93	0	0	0	2	.03
5	501	48	10.44	3	1	.02	3	.06
6	352	34	10.35	2	0	0	0	0
7	400	34	11.76	0	1	.03	7	.21
8	372	28	13.29	1	0	0	2	.07
9	336	32	10.50	0	0	0	1	.03
10	322	33	9.76	0	1	.03	4	.12
11	289	26	11.12	1	0	0	1	.04
Mean	398.10	37.90	10.68	1	.30	.01	2.10	.06
SD	93.23	10.81	1.25	1.05	.48	.01	2.13	.06
Range	289-606	26-61	8.62-13.29	1-3	0-1	0-.03	0-7	0-.21

0 = feature not present

Group 2 - Elderly
Personal Narrative Task

Participant #	# of words	# of T-units	#words/ T-unit	# of fragments	# & rate of grammatical error		# & rate of dialect features	
1	416	69	6.03	0	0	0	11	.16
2	253	30	8.43	0	6	.20	4	.13
3	660	59	11.19	3	8	.14	26	.44
4	908	108	8.41	4	2	.02	29	.27
5	304	37	8.22	0	1	.03	9	.24
6	176	37	4.76	1	4	.11	5	.14
7	467	49	9.53	0	3	.06	1	.02
8	237	30	7.90	1	3	.10	4	.13
9	548	57	9.61	2	1	.02	2	.04
11	193	16	12.06	0	0	0	1	.06
Mean	416.20	49.20	8.61	1.10	2.80	.07	9.20	.16
SD	235.73	26.13	2.18	1.45	2.62	.07	10.20	.13
Range	176-908	16-108	4.76-12.06	0-4	0-8	0-.20	1-29	.02-.44

0 = feature not present

Group 1 - Middle-aged
Personal Narrative Task

Participant #	# & rate of lexical errors		# & rate of indefinite terms		# of attempts - reference	# of correct ties	rate of ref. / T-units	% of correct ties
1	0	0	0	0	32	25	.89	.78
3	0	0	3	.06	18	14	.38	.78
4	0	0	3	.05	32	30	.52	.94
5	0	0	5	.10	34	30	.71	.88
6	0	0	2	.06	23	23	.68	1.00
7	1	.03	1	.03	13	12	.38	.92
8	0	0	2	.07	27	23	.96	.85
9	0	0	6	.19	20	19	.63	.95
10	0	0	1	.03	32	25	.97	.78
11	0	0	1	.04	10	10	.38	1.00
Mean	.10	.003	2.40	.06	24.10	21.10	.65	.89
SD	.32	.009	1.90	.05	8.63	7.13	.23	.09
Range	0-1	0-.03	0-6	0-.19	10-34	10-30	.38-.97	.78-1.00

0 = feature not present

Group 1 - Elderly
Personal Narrative Task

Participant #	# & rate of lexical errors		# & rate of indefinite terms		# of attempts - reference	# of correct ties	rate of ref. / T-units	% of correct ties
1	0	0	5	.07	64	52	.93	.81
2	0	0	0	0	8	4	.27	.50
3	2	.03	1	.02	40	23	.68	.58
4	0	0	6	.06	138	128	1.28	.93
5	0	0	0	0	21	13	.57	.62
6	1	.03	1	.03	12	4	.32	.33
7	0	0	2	.04	13	11	.27	.85
8	0	0	3	.10	26	8	.87	.31
9	0	0	7	.12	45	37	.79	.82
10	0	0	1	.01	19	11	.27	.58
11	0	0	0	0	8	5	.50	.63
Mean	.30	.01	2.50	.04	37.50	28.50	.65	.64
SD	.67	.01	2.64	.04	39.81	38.41	.33	.22
Range	0-2	0-.03	0-7	0-.12	8-138	4-128	.27-1.28	.31-.93

0 = feature not present

APPENDIX C

PARTICIPANT QUESTIONNAIRE

AND HEARING DISCRIMINATION SCREENING

Participant #: _____

Date: _____

PARTICIPANT QUESTIONNAIRE

Participant's Age: Years _____ Months _____

Please answer each of the following questions:

EDUCATION and WORK HISTORY:

1. Did you complete high school? _____ yes _____ no
If "no": What is the highest level of schooling you have achieved? _____
2. Have you ever attended college? _____ yes _____ no
If "yes": How many years of college have you completed? _____
What was your major field of study? _____
3. What type(s) of vocational training have you had? _____
4. Is English your first language? _____ yes _____ no
5. Do you speak any other language(s)? _____ yes _____ no
If "yes", please list the other language(s) you speak. _____
6. Are you employed? _____ yes _____ no
7. What is your occupation? (If retired, please list occupation prior to retirement.) _____
8. Were you ever skipped or retained a grade in school? _____ yes _____ no
If "yes", please explain: _____
9. Were you ever told that you had a learning disability? _____ yes _____ no
If "yes", please explain: _____
10. Were you ever placed in a special class for learning? _____ yes _____ no
11. Have you ever had speech or language therapy? _____ yes _____ no
If "yes", please explain: _____

DAILY ACTIVITIES:

1. Do you prepare your own meals? _____ yes _____ no
2. Do you shop for food and clothing? _____ yes _____ no
3. Do you wash, iron, and mend your own clothes? _____ yes _____ no
4. Do you drive a car? _____ yes _____ no
Or use public transportation (including bus or taxi service)? _____ yes _____ no
5. Do you clean your own home? _____ yes _____ no

MEDICAL HISTORY:

1. Are you currently or have you ever been treated by a doctor or other professional for any of the following:

a. hearing loss: _____ yes _____ no

If "yes", please explain: _____

b. stroke (CVA): _____ yes _____ no

If "yes", please explain: _____

c. neurological disorder (i.e., Parkinson's disease, brain tumor) : _____ yes _____ no

If "yes", please explain: _____

d. migraine headaches (diagnosed by a physician) : _____ yes _____ no

If "yes", please explain: _____

e. head injury: _____ yes _____ no

If "yes", please explain: _____

f. epilepsy or recurrent seizures: _____ yes _____ no

If "yes", please explain: _____

g. high blood pressure (requiring medication) : _____ yes _____ no

If "yes", is your high blood pressure controlled with medication? _____ yes _____ no

If your condition is NOT controlled with medication, please explain: _____

h. diabetes: _____ yes _____ no

If "yes", is your diabetes controlled with medication? _____ yes _____ no

If your condition is NOT controlled with medication, please explain: _____

i. cardiovascular disease (including heart attack, clogged arteries, etc.): _____

yes _____ no

If "yes", please explain: _____

j. cancer: _____ yes _____ no

If "yes", please explain: _____

k. psychological or emotional disorder : _____ yes _____ no

If "yes", please explain: _____

l. alcohol or drug abuse: _____ yes _____ no

If "yes", please explain:

2. Are you currently under a doctor's care? _____ yes _____ no

If "yes", please explain:

3. Are you currently taking any prescription medications? _____ yes _____ no

If "yes", list the medication and for what the medication is taken:

Thank you for completing this questionnaire and for your participation in this study.

Participant #: _____

Date: _____

SPEECH DISCRIMINATION SCREENING TASK				Discrimination of Word Pairs	Word Repetition	
				Score 1 or 0	Score .5 or 0	Score .5 or 0
T	map	lap	(different)			
1.	bare	dare	(different)			
2.	past	fast	(different)			
3.	home	home	(same)			
4.	thin	shin	(different)			
5.	sharp	sharp	(same)			
6.	cheap	jeep	(different)			
7.	gave	gave	(same)			
8.	day	they	(different)			
9.	town	town	(same)			
10.	zip	zip	(same)			
11.	gum	gum	(same)			
12.	vase	vase	(same)			
13.	bat	pat	(different)			
14.	hop	hop	(same)			
15.	vote	boat	(different)			
16.	cheese	cheese	(same)			
17.	soil	foil	(different)			
18.	vine	vine	(same)			
Maximum Total = 18						
Total Speech Discrimination Score						

from the ABCD (Bayles and Tomoeda, 1993).

APPENDIX D

INSTRUCTIONS PROVIDED TO PARTICIPANTS

INSTRUCTIONS PROVIDED TO THE PARTICIPANTS

The examiner will orally present the following instructions verbatim to each participant:

PERSONAL NARRATIVE:

Have you ever had anything really special or scary happen to you? I want you to think about a time that something good or something bad happened to you in your life and tell me a story about it.

STORY RETELL:

I am going to tell you a short story. When I am finished, I want you to tell it back to me in as much detail as possible.

APPENDIX E
STORY RETELL STIMULI

Story retell - Experimental stimuli

The Lost Wallet

While a lady was shopping, her wallet fell out of her purse, but she did not see it fall. When she got to the check-out counter, she had no way to pay for her groceries. So she put the groceries away and went home. Just as she opened the door to her house, the phone rang and a little girl told her that she had found her wallet. The lady was very relieved.

(from the ABCD - Bayles and Tomoeda, 1993).

APPENDIX F

EXAMPLES OF DIALECT FEATURES AND
FREQUENCY OF USE

Dialect Feature	Example from transcripts	Frequency of occurrence
Omission of copula or auxiliary "be"	And <i>she hollering</i> , "Catch me, Sarah."	14%
Omission of grammatical morphemes	They had watermelon cut in heart <i>shape</i> .	1.6%
Subject-verb mismatch	I <i>plays</i> with him and everything. And we <i>was</i> losing.	58%
Pronoun substitution	And then they had <i>they</i> pots and pans in there. And I just bought <i>me</i> a brand, new Ford Escort.	5%
Habitual use of "be"	They be following me.	.8%
Double modals	It <i>might could</i> work.	.8%
Perfect construction		0%
Double/Triple negation	Then she found that she <i>didn't</i> have <i>no</i> money	9.1%
Miscellaneous dialect features	I could <i>sholl</i> see them cars running. I had <i>a</i> opportunity to play football against him.	10.7%

APPENDIX G

SAMPLES OF STORY RETELL AND NARRATIVE TASKS

Story Retell - Participant 1-11, F, 42

Okay. While a lady was at the grocery store, she, uh, her wallet fell out of her, uh purse. But she did not see it fall out. So when she got to the check-out counter she did not have any money to pay for her groceries. Um, when she got home her phone was ringing. Little girl told her she had found her wallet. She was very relieved.

Story Retell - Participant 2-9, F, 67

Well a lady was shopping. Her wallet fell out of her pocket. Once she got to the grocery, check-out stand she couldn't find her wallet. So she had to put her groceries back. When she got home just as she got to her door her phone rang. And a little girl told her she had found her wallet. And how happy she was.

Personal Narrative - Participant 1-11, Female, 42

You wrong for that Tee. Okay, um, when I was, I guess I was in like, uh third grade I had, uh, it was like these little shoes that I wanted. And I kept begging my mom buy me these shoes. They were like little black and white, uh, they were like little cheerleader shoes. But, you know then they were real popular. And so my mom took me to Sears and bought... And you know they did not have the shoes in my size. They had like a half size smaller. And so, uh, (laughing) so I kept telling my mom you know that th- the shoes really you know they fit. And they felt good and stuff. So I get the shoes home and th- you know I wore them to school the next day. And the shoes hurt my feet so bad on the playground. Oh I was just sick. You know and I, and so you know every day I kept thinking every day Oh Lord I cannot wear these shoes. I came up with this idea that you know that if I like slit the shoe, you know the side of the shoe and then put some dirt in there you know it'll look like the shoe's ripped up. And so I that's what I did. I took a knife and I slit the shoe on the side and you know rubbed a little dirt in there and um, when my, uh, my mom saw the shoe she was like mad. She was like I paid good money for these shoes. Imma take these shoes back. So we ha-, we take the shoes back to Sears. And the people didn't want to take the shoes back (Laughs) because, because the shoe's [XXXXX] was all cut up with the dirt in there (uncontrollable laughter). So my mom wound up going off on the people because she thought the shoes had split. And they were like leather shoes. And she could not understand why the shoes split so fast. (laughing). But it did teach me a lesson. Never buy shoes too small. (laughter, E: Is that the end?) (more laughter)

Participant 2-4, Female, 69

Me and my girlfriend both worked at this, uh, beer joint. And we were both, at that time, eighteen, nineteen years old. We weren't very old. But we thought we were grown. And, uh, this guy came in one night. It was through the week and business was slow. And he had a pocket full of money. So he was just drinking beer and buying beer for everybody. And we know that there was a coupla guys that was waiting to get him outside. So we wouldn't let him go outside because we knew what they was gonna do. But we decided that we would take, with the money. We was gonna steal the money from him. So we kept him in there and closed up everything 'til we cleaned up. And he sitting up there sleep. So we got him, he had an old T-model Ford. And we got him and put him in this T-model Ford. And she didn't know how to drive. And I didn't know how to drive. But it was one of those that you had to crank. One of them old cars you had to crank. And uh, we got, this is in a little country town. Hugo, Oklahoma. And uh (laugh) we put him in there. So she said,

“Crank, Sarah, crank.” And I’m cranking. I’m trying to get this thing started. So finally we got it started. And she took off. And she didn’t know how to put on the brakes, you know. And she’s hollering. And she’s going ‘round and ‘round the block. And I’m, and I’m running behind this car. And she hollering, “Catch me, Sarah. Every time she’d pass me, she’d say, “Catch me, Sarah.” And I’m trying to catch her. Well, you know, back in those days they had running boards on the side of the car. Finally, I was able to grab the car and jump up on the running board ‘bout when she passed. So I messed around and, and, and, and fell through the window. Couldn’t get the door open so I just fell through the window. And we took off to the cemetery. Back in th, those days that’s where people went to make-out out there. After the clubs and things closed that’s where they went to drink, to fight, to do whatever else they decided to do. So we gonna take him down there... It’s a weeknight so won’t nobody be down there, right. We gone take him down there and rob him. So we gets down there and, would you, the place is jammed. So she didn’t know how to stop this car. So she’s coming up that little country narrow roads and they parked on each side. Cain’t no car [XXXX] come through. And she didn’t know how to stop it. So she’s gone run into the back of this man’s car. So she turned and went ‘cross the cemetery knocking down tombstones. Broke the man’s light and everything. But we stopped. Had to stop ‘cause the, the, them tombstones stopped us. But we undressed him looking for his money. We pulled his boots off. We went through his socks. We pulled his pants off. Can I say this? We pulled the man’s drawers off looking for this money. We couldn’t find the money so we get mad leave him out there windows down (laughing), car open, no clothes on and mosquitoes everywhere. (laughing). They tore him up. But the funniest thing was the next morning we goes back up to open up. And so we always have to go and clean up before we open up. So here he comes bamming on the door. So, this is funny, this was funny to us. Back then kids, you know, did things but wasn’t malicious. Because we didn’t hurt nobody, you know what I mean. Now this was wrong. I’m not trying to say that it was right. But it was so funny. I wish you coulda been there. It was so funny. So I looked up and I saw him. And I said to my friend I said, “Jean, here he is. Here he is.” She said, “Shut up, we don’t, you don’t want nothing no way. We already took him to the cemetery.” So we let him in. He say, “Ah, I tell you, I don’t know, I must have had a ball last night because I sho’ll feel it. And I end up down there in that damn cemetery.” It was so funny. He didn’t know how he got there. He asked for a cold beer. No we done shook him down. He has no money, right. So he say, “Gimme a beer.” Not a little bottle. One of them quarts. We said, “We will if you got any money to pay for it”, since we so sure he-he-he somebody done got him before we got him ‘cause he didn’t have no mo’. He said, “You damn right I got money to pay for it.” And pulled off his cowboy hat and went under the brim and there was all that

money. We coulda fell out. Ooh, you coulda sold us for fifteen cents 'cause we done took all that man's clothes off and... (laughing). He had a big white Stetson cowboy hat and round the, he had rolled up that money round the band of his hat. And we could not see... She never let me forget that. She never let me forget that. We was, we were young girls that was bad, just plain bad

APPENDIX H
INSTITUTIONAL REVIEW BOARD APPROVAL FORMS

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

Date: December 8, 1999 IRB #: AS-00-097

Proposal Title: "ORAL DISCOURSE SKILLS IN AGING AFRICAN-AMERICAN ADULTS"

Principal Investigator(s): Connie Stout
Nicole Cooks

Reviewed and Processed as: Expedited

Approval Status Recommended by Reviewer(s): Approved

Signature:



Carol Olson, Director of University Research Compliance

December 8, 1999

Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modification to the research project approved by the IRB must be submitted for approval with the advisor's signature. The IRB office MUST be notified in writing when a project is complete. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

VITA

Nicole Michelle Cooks

Candidate for the Degree of

Master of Arts

THESIS: ORAL DISCOURSE SKILLS IN AGING AFRICAN-AMERICAN ADULTS

Major Field: Speech

Biographical:

Education: Received Bachelor of Science degree in Speech Language Pathology from the University of Central Oklahoma, Edmond, Oklahoma, in May 1998. Completed the requirements for a Master of Arts degree from Oklahoma State University, Stillwater, Oklahoma, in July 2000.

Professional Experience: Employed by Oklahoma State University, Department of Communication Sciences and Disorders, as a graduate assistant from August 1998 to the present. Completed clinical practicum internships at: the University of Central Oklahoma Speech and Language Clinic, Edmond, Oklahoma, January 1998 to May 1998; the Oklahoma State University Speech-Language-Hearing Clinic, Stillwater, Oklahoma, January 1999 to July 1999; the Sheltered Workshop for Payne County, Inc., Stillwater, Oklahoma, January 1999 to May 1999; Guthrie Public Schools, October 1999 to December 1999; and Rehabilitation Center and Skilled Nursing Facility at St. Anthony Hospital, Oklahoma City, OK, December 1999 and March 2000 to June 2000.

Professional Affiliations: American Speech-Language-Hearing Association (ASHA), National Student Speech-Language-Hearing Association (NSSLHA), National Student Speech-Language-Hearing Association - OSU Chapter (OSU-NSSLHA),