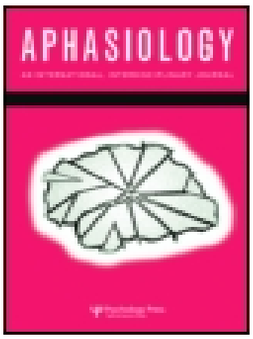

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Discourse elicitation with pictorial stimuli in African Americans and Caucasians with and without aphasia

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Background: Pictorial stimuli are a traditional means of discourse elicitation for individuals with aphasia. The discourse genre produced in response to pictures may be affected by the presence of aphasia, the nature of the stimulus, or both. Ethnicity may also influence discourse responses, an issue critical for effective differentiation between communication changes associated with pathology and normal differences associated with ethnicity. There is a need for discourse research with African Americans who have aphasia, highlighted by ethnic group differences in stroke prevalence, and potential ethnic group differences in dialect.

Aims: This study was designed to address whether the quantity and quality of discourse produced in response to pictorial stimuli differed between African Americans and Caucasians with and without aphasia.

Methods & Procedures: We investigated the discourse of 33 African Americans with aphasia, 30 African American non-brain-injured controls, 29 Caucasians with aphasia, and 32 Caucasian non-brain-injured controls in their responses to two single pictures and one picture sequence. For the individuals with aphasia, aphasia severity level ranged from mild to moderate. There were no significant group differences for age or education. Participants were asked to ''tell a story'' and responses were produced after the stimulus was removed. Analyses included length of response (in propositions), discourse genre of response (narrative versus descriptive), occurrence of ethnic dialect, and thematic content.

Outcomes & Results: In both ethnic groups, individuals with aphasia produced less language on the most complex stimulus. Single pictures elicited more descriptive discourse, and the picture sequence more narratives, for all groups. Features of African American dialect were observed in responses of both African American non-brain-injured controls and African Americans with aphasia on all stimuli, especially in narrative genre responses. Thematic content was similar across groups.

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Conclusions: Results hold implications for the design of picture-elicited discourse tasks. Lack of ethnic group differences in response length and the thematic content of responses may be a function of task artificiality, or a reflection of ethnic group similarity in overall discourse length and content. Picture sequences seem more effective for eliciting narrative discourse, and single pictures for eliciting descriptive discourse. Descriptive discourse may be simpler to produce for individuals with and without aphasia. Findings suggest a robustness of ethnic dialect features, at least for individuals with mild aphasia, although this may be best seen on responses that are narrative in type. Differentiation between discourse genres provides a useful complement to other approaches to discourse assessment.

The need for clinical investigations of African Americans with aphasia is highlighted by the higher prevalence of stroke and advanced hypertension among African Americans as compared to Caucasians (e.g., Kittner, White, Losonczy, Wolf, & Hebel, 1990). Discourse studies are an important element of the research on aphasia and ethnicity, because discourse performance approximates functional communication ability (Ulatowska, Freedman-Stern, Doyel, Macaluso-Haynes, & North, 1983) and reveals preferred ethnic styles of communication (Heath, 1983).

The clinical discourse literature has traditionally focused on Caucasians with aphasia or has not specified the ethnicity of study participants (e.g., Bloom, Obler, DeSanti, & Ehrlich, 1994; Brownell & Joanette, 1993). This occurs despite the tenet that ethnic differences commonly are associated with differences in communication styles; a reality that affects clinicians' ability to avoid false positives and false negatives in diagnostic testing (Wolfram, 1992). The utility of discourse measures in African Americans with aphasia has received only cursory attention (Wallace, 1996). Moreover, our understanding of the multifactorial nature of discourse testing is still in its infancy (e.g., Doyle et al., 1998). However, recent studies of discourse in African Americans with aphasia highlight the similarities and differences between the discourse of African Americans and Caucasians with aphasia (Wertz et al., 2000), as well as communication patterns specific to African Americans who have aphasia (Ulatowska, Olness, Hill, Roberts, & Keebler, 2000; Ulatowska et al., 2001a, b).

Pictorial stimuli have been a traditional means of discourse elicitation in both research (e.g., Bottenberg, Lemme, & Hedberg, 1987; Brenneise-Sarshad, Nicholas, & Brookshire, 1991; Correia, Brookshire, & Nicholas, 1990; Doyle et al., 1998; Nicholas & Brookshire, 1995; Potechin, Nicholas, & Brookshire, 1987) and clinical assessment (Goodglass & Kaplan, 1983; Goodglass, Kaplan, & Barresi, 2001; Kertesz, 1982). Yet, to our knowledge, comparison of discourse performance between African Americans and Caucasians with aphasia on different pictorial stimuli has not been addressed.

Responses from picture stimuli may reveal ethnic group differences, as well as differences associated with aphasia, both in amount (quantity) and nature (quality) of the language produced. With regard to quantity, individuals with aphasia typically produce less language than non-brain-injured controls on picture-elicited discourse tasks (Brenneise-Sarshad et al., 1991). However, it is not known whether African Americans and Caucasians differ in the amount of language they produce in response to pictures, nor whether differences associated with aphasia are similar between ethnic groups. Differences in reaction to the relatively artificial nature of picture tasks, for example, may lead to ethnic variation in response.

With regard to the quality (or nature) of responses, analyses of picture-elicited discourse are often conducted on a word-by-word or sentence-by-sentence level. These include measures based on semantic content, for example, ''correct information units'' (CIUs) or ''accurate and complete propositions'' (Brenneise-Sarshad et al., 1991; Correia et al., 1990; Doyle et al., 1998; Potechin et al., 1987), as well as measures of grammatical

complexity, cohesion, and verbal productivity (e.g., Brenneise-Sarshad et al., 1991; Doyle et al., 1998; Goodglass et al., 2001). A primary difficulty in advancing this research has been the time-consuming nature of these item-by-item analyses.

With specific regard to content analyses, there has been a suggestion that individuals with aphasia may produce more labelling or descriptive units in response to pictures than do non-brain-injured controls (Correia et al., 1990). In addition, responses to some types of picture stimuli may produce more descriptive units than others (Bottenberg et al., 1987; Correia et al., 1990). One means of assessing these tendencies is to categorise responses to picture stimuli according to the discourse genre they represent: descriptive versus narrative. This genre differentiation is important both in its clinical and its functional implications. Clinically, differentiation of the discourse is important because the cognitive-linguistic demands of producing narratives are very different from the cognitive-linguistic demands of producing descriptive discourse (Longacre, 1996). Narratives (stories) require emplotment of the cognitive representation of events into their linguistic form (Huber, 1990); the ability to express temporal progression; the ability to establish and maintain personal reference; and the ability to highlight certain events (e.g., the climax) above other events (Ulatowska & Olness, 1997). Conversely, descriptive discourse does not require expression of temporal progression, but it involves mention of characters and their actions, which may or may not be thematically related through inference formation. From a functional perspective, descriptive and narrative discourse fill basic, but different, communicative functions in daily life.

We know of no studies that address the discourse genre produced by individuals with aphasia in picture-elicited discourse tasks, nor any studies investigating ethnic group differences in discourse genres produced in reaction to pictures. Individuals with aphasia may respond to pictures differently from non-brain-injured controls, based on the differential cognitive-linguistic demands of narrative versus descriptive discourse. In addition, African Americans may respond with different discourse genres than Caucasians due to ethnic group differences in communication styles (Johnson, 2000) and reactions to clinical tasks. There may also be an effect of task, for example, certain categories of picture stimuli may elicit more descriptive responses (Bottenberg et al., 1987). Thus, inclusion of a range of picture tasks may be important.

With regard to the overall nature (quality) of the discourse produced in response to pictures by African Americans with aphasia, measures that reflect ethnic differences are also of interest. Recent studies of discourse in African Americans with aphasia indicate that certain tasks (e.g., producing a personal narrative of a frightening experience) are effective in eliciting ethnic dialect features (Ulatowska & Olness, 2001), and other tasks (e.g., proverb interpretation, and deriving lessons from fables) elicit ethnic cultural themes (Ulatowska et al., 2001b). In the present study, we explored whether features of ethnic dialect (Mufwene, Rickford, Baily, & Baugh, 1998) and ethnic theme (Payne-Johnson, 1992) could be elicited with picture stimuli, to examine the degree to which picture-elicited discourse would be representative of ethnic communication and whether ethnic features would be altered by the presence of aphasia. This is necessary groundwork for eventual differentiation between communication changes associated with pathology and normal differences associated with ethnicity.

This study was designed to answer the following questions:

(1) Is the quantity of discourse (number of propositions) produced in response to pictorial stimuli different between African Americans and Caucasians with and without aphasia?

(2) Is the quality of discourse produced in response to pictorial stimuli different between African Americans and Caucasians with and without aphasia, as manifested in:

(a) discourse genre (narrative versus descriptive),
(b) occurrence of ethnic dialect features, and
(c) occurrence of ethnic thematic content?

METHOD

Subjects

A total of 124 participants participated in the study: 33 African Americans with aphasia (AA-APH), 30 African American non-brain-injured controls (AA-NBI), 29 Caucasians with aphasia (C-APH), and 32 Caucasian non-brain-injured controls (C-NBI). Of these participants, 78% were raised in the Southern USA (29 AA-APH, 26 AA-NBI, 21 C-APH, 21 C-NBI). All individuals with aphasia sustained a left-hemisphere stroke and were at least 1 month postonset. Non-brain-injured controls had no history of neurological impairment. Both the participants with aphasia (premorbidly) and the non-brain-injured participants were literate, monolingual speakers of English. All participants passed sensory screening criteria—vision, no worse than 20/100 corrected in the better eye, and auditory, hearing no worse than an estimated 40 dB speech reception threshold in the better ear. Potential participants were excluded if they had sickle cell disease, psychiatric problems, or dementia. Finally, potential study participants with severe oral-expressive aphasia were excluded, because they could not produce sufficient language for discourse analysis.

Subject characteristics are summarised in Table 1. Paired group comparisons, *t*-tests, revealed no significant group differences for age or education among groups. Socioeconomic status (SES) was rated on a 1–7 scale (adapted from Featherman & Stevens, 1980) for the highest occupational level attained, where the higher number indicates lower occupational level. SES was significantly lower for both African American groups as compared to the Caucasian groups ($p < .02$). Months postonset in participants with aphasia ranged from 1 to 336 months. Aphasia severity ranged from mild to moderate, based on ratings from the Boston Diagnostic Aphasia Examination (Goodglass & Kaplan, 1983). There were no significant differences between African Americans and Caucasians with aphasia for months postonset or severity of aphasia.

All participants were given a battery of standardised cognitive-linguistic tests: the Western Aphasia Battery (WAB; Kertesz, 1982), the Token Test (Spreen & Benton, 1969), and the ASHA Functional Assessment of Communication Skills for Adults (ASHA FACS; Frattali, Thompson, Holland, Wohl, & Ferketic, 1995) (see Table 2). Analyses of covariance, using SES as the covariate, were conducted, and alpha was adjusted ($p < .003$) for the multiple comparisons. Across AA and C groups, the NBI groups performed significantly better than the APH groups on all measures ($p < .003$). Across APH and NBI groups, there were no significant differences between African Americans and Caucasians on the standardised measures. Participants' scores on the WAB Fluency Scale and the WAB Naming subtest are also provided in Table 2, to characterise the expressive skills of the participants.

Discourse elicitation

Participants were presented with three pictorial stimuli. Two of these were single pictures: a picture depicting a theme of ''pinching pennies'' and budgeting (''Counting Money''), and a Rockwell picture depicting a family difference of opinion over church

TABLE 1
Demographic data

Variable		Groups			
		African Americans		*Caucasians*	
		APH (n = 33)	*NBI* (n = 30)	*APH* (n = 29)	*NBI* (n = 32)
Age (in years)	mean	53.8	53.0	56.1	54.2
	s.d.	7.8	8.9	7.6	9.1
	range	40–68	43–71	38–69	41–70
Education (in years)	mean	12.9	12.8	13.9	13.7
	s.d.	2.6	1.7	2.8	2.5
	range	4–18	9–17	7–19	8–22
SES (7-point scale)*	mean	5.1	5.6	4.3	3.7
	s.d.	1.2	1.1	1.3	1.2
	range	2–7	3–7	2–7	1–6
Months postonset	mean	36.7	–	50.5	–
	s.d.	47.7	–	67.4	–
	range	2–240	–	1–336	–
Boston severity rating	mean	3.9	–	4.3	–
	s.d.	1.1	–	0.9	–
	range	2–5	–	2–5	–

APH = persons with aphasia; NBI = non-brain-injured controls.

* Higher number indicates lower SES; SES significantly lower for African Americans than Caucasians (APH and NBI) ($p < .02$).

TABLE 2
Means, ranges, and standard deviations on the standardised aphasia measures

Measure		Groups			
		African Americans		*Caucasians*	
		APH (n = 33)	*NBI* (n = 30)	*APH* (n = 29)	*NBI* (n = 32)
WAB Aphasia Quotient*	mean	83.8	98.7	88.1	99.5
	s.d.	10.1	1.6	9.3	0.6
	range	59–99	93–100	60–99	98–100
WAB Fluency Scale*	mean	6.9	10	7.9	10
	range	4–10	–	5–10	–
WAB Naming subtests*	mean	8.5	9.7	8.7	10
	range	5–10	9–10	5–10	–
WAB Cortical Quotient*	mean	81.3	96.7	87.3	98.9
	s.d.	11.4	2.1	9.4	1.2
	range	57–98	92–99	61–99	95–100
Token Test*	mean	106.8	152.3	122.4	157.9
	s.d.	47.0	9.9	43.6	7.8
	range	12–163	127–163	27–163	139–163
ASHA FACS*	mean	5.9	6.9	6.1	7.0
	s.d.	1.3	0.5	0.9	0.0
	range	0–7	6–7	3–7	7–7

APH = persons with aphasia; NBI = non-brain-injured controls.

* APH had significantly lower scores than NBI, for both ethnic groups ($p < .003$).

attendance (''Easter Morning''). The third stimulus was a picture sequence composed of four conjoint panels, depicting mischievous boys foiled in their attempt to steal apples (''Boys and Apples''). Each stimulus was designed to depict a theme potentially meaningful to African Americans and Caucasians and for its portrayal of a complicating event to encourage narrative (story) responses. Participants saw each stimulus, one at a time, and were allowed as much time as they desired to view each stimulus. After each stimulus presentation, the stimulus was removed, and the participant was instructed to ''tell a story'' based on the stimulus. Most African American participants were interviewed by an African American clinician, and most Caucasian participants were interviewed by a Caucasian clinician. Responses were audio recorded and transcribed. Sample transcripts are found in the appendix.

Analysis

Amount of language was measured in the number of propositions produced (Mross, 1990). A proposition was defined as a semantic unit consisting of a predicate and its argument(s). The discourse genre (i.e., narrative versus descriptive) produced in response to each picture was determined, based on inclusion of features characteristic of each discourse type. Discourse was categorised as narrative when it included temporal progression of events and as descriptive when it mentioned characters and/or actions without temporal progression. The presence or absence of African American dialect features (Mufwene et al., 1998; Ulatowska & Olness, 2001) was recorded for each response. The thematic content (global semantic theme) of responses (e.g., budgeting, religion, family, honesty, etc.) was also recorded and compared across groups for each stimulus.

Reliability

Interrater reliability of the discourse genre categorisation was analysed by comparison of the original rater's categorisations with those of a second rater on the full data set. Point-by-point interrater agreement was 98%.

RESULTS

Quantity

Results of the quantitative analysis are found in Table 3. Group comparisons, analyses of covariance with SES as a covariate, were conducted for the number of propositions across tasks with the alpha level adjusted to $p < .003$ to correct for the multiple comparisons. Individuals with aphasia, in both ethnic groups, produced significantly fewer propositions, $F(1, 118) = 19.32$; $p < .0001$, than both non-brain-injured control groups for the Easter Morning stimulus. There was no significant difference between the African American and Caucasian non-brain-injured groups or the African American and Caucasian groups with aphasia. On the other two pictorial stimuli, no significant group differences in the number of propositions were found between the NBI and APH groups, or between ethnic groups.

Quality

Discourse genre. Percentage occurrence of descriptive versus narrative discourse for the four groups across the three tasks are displayed in Table 4. The picture sequence (Boys and Apples) consistently elicited narratives in all groups. Conversely, single pictures (Counting Money and Easter Morning) elicited primarily descriptive discourse,

TABLE 3
Means, ranges, and standard deviations for discourse length (in propositions) on each picture stimulus

		Groups			
		African Americans		*Caucasians*	
Picture stimulus		*APH* (n = 33)	*NBI* (n = 30)	*APH* (n = 29)	*NBI* (n = 32)
Counting Money	mean	6.06	8.21	8.69	9.35
	s.d.	4.08	6.19	5.65	6.12
	range	2–16	2–28	3–27	3–29
Easter Morning*	mean	6.33	9.72	7.89	12.69
	s.d.	3.81	6.30	4.04	6.05
	range	2–18	3–34	2–19	4–30
Boys and Apples	mean	10.61	12.03	12.83	14.91
	s.d.	6.41	7.89	7.52	6.59
	range	2–27	3–39	5–36	7–37

APH = persons with aphasia; NBI = non-brain-injured controls.

* APH responses contained significantly fewer propositions than NBI responses for both ethnic groups ($p < .0001$).

TABLE 4
Percent of discourse genre (narrative versus descriptive) on each picture stimulus

	Groups			
	African Americans		*Caucasians*	
Picture stimulus	*APH* (n = 33)	*NBI* (n = 30)	*APH* (n = 29)	*NBI* (n = 32)
Counting Money*				
Narrative	3.0%	17.2%	17.2%	32.3%
Descriptive	97.0%	82.8%	82.8%	67.7%
Easter Morning**				
Narrative	6.0%	13.8%	10.3%	31.2%
Descriptive	94.0%	86.2%	89.7%	68.8%
Boys and Apples				
Narrative	97.0%	96.6%	100.0%	100.0%
Descriptive	3.0%	3.4%	0.0%	0.0%

APH = persons with aphasia; NBI = non-brain-injured controls.

* Significant relationship between discourse genre and group (χ^2 = 9.58, $p < .05$). ** Significant relationship between discourse genre and group (χ^2 = 8.98, $p < .05$).

for all groups. For each single picture, a chi-square analysis was conducted to test the relationship between group and discourse genre.

A significant relationship was found for Counting Money (χ^2_{obt} = 9.58, df = 3, $p <$ .05). Subsequent 2 $\times$ 2 chi-square analyses with Yates' correction factor for low degrees of freedom approached, but did not reach, significance when comparing AA-NBI to AA-APH (χ^2_{obt} = 2.12, χ^2_{crit} = 3.84, df = 1, $p > .05$) and reached significance when comparing

C-NBI to AA-APH ($\chi^2_{obt} = 7.65$, $p < .01$), with individuals with aphasia producing fewer narratives than non-brain-injured controls. No other significant relationship between group and discourse genre was found in any other two-group comparisons for the Counting Money stimulus.

A significant relationship between group and discourse genre was also found for Easter Morning ($\chi^2_{obt} = 8.98$, $df = 3$, $p < .05$). Subsequent 2×2 chi-square analyses with Yates' correction approached, but did not reach, significance when comparing C-NBI to C-APH ($\chi^2_{obt} = 2.81$, $df = 1$, $p > .05$), and reached significance when comparing C-NBI to AA-APH ($\chi^2_{obt} = 5.27$, $df = 1$, $p < .05$), with individuals with aphasia producing fewer narratives than non-brain-injured controls. No other significant relationship between group and discourse genre was found in any other two-group comparisons for the Easter Morning stimulus.

Ethnic features. Both African Americans with aphasia and African American non-brain-injured controls produced features of African American ethnic dialect across all stimulus types, but these occurred primarily in the narrative response genre. Thematic content for each picture stimulus was similar across ethnic groups with and without aphasia.

DISCUSSION AND CLINICAL IMPLICATIONS

We observed a significantly greater quantity of language in the discourse of non-brain-injured controls than in the discourse of individuals with aphasia. However, this difference was found on only one of the single-picture stimuli (Easter Morning). The relative homogeneity of response length on the other two stimuli may result from our participants with aphasia being mildly impaired. Response length differences between the APH and NBI groups appeared only on the Easter Morning stimulus perhaps because meaning can be derived from this picture only through an understanding of the context-based relationships in the picture; what Myers and Linebaugh (1984) call ''context dependence''. Thus, length of response may vary on this picture, because many different inferences can be drawn between and among the many elements in the picture. Conversely, the Boys and Apples picture sequence is more explicit and delineated in the content it depicts. Clinically, perhaps, one should consider using pictures that require a variety of inferences if one's goal is to explore differences in response length between individuals with aphasia and individuals without aphasia.

Our results suggest that there are no significant differences between ethnic groups—non-brain-injured or with aphasia—in the quantity of language produced for our stimuli. This lack of ethnic difference may result from picture stimuli artificially constraining individuals to a limited range of response length. Moreover, one may wonder whether responses to pictorial stimuli are representative of potential ethnic differences in the length of discourse produced in daily life. Of course, the results may be straightforward and imply that discourse to picture stimuli and in life does not differ between ethnic groups.

Picture sequences elicited more narratives, and single pictures elicited more descriptive discourse, confirming previous reports that single pictures elicit responses that are more descriptive (Bottenberg et al., 1987). This pattern appears to hold for both ethnic groups, and individuals with aphasia appear to produce proportionately more descriptive discourse than do the non-brain-injured controls. These findings may result from narratives' greater linguistic demands for expression of temporality and reference

and suggest that descriptive discourse may be simpler to produce than narrative discourse for individuals with and without aphasia, especially when responding to single-picture stimuli. Clinically, if one is interested in an individual's ability to produce narratives, picture sequence tasks may be the tasks of choice.

Features of ethnic dialect were found in the responses of African Americans with and without aphasia. This may suggest a robustness of ethnic features, at least in individuals with mild aphasia. Clinically, however, if one is interested in examining dialectal forms, the stimulus of choice may be one that most consistently elicits narratives (i.e., picture sequence). Narratives contain a wide range of dialectal verb forms which represent a complex and pivotal grammatical system of African American dialect (Green, 1998). However, because spontaneity of response is also important for displaying ethnic features, the best means of eliciting ethnic dialect may be in personal narratives (Ulatowska & Olness, 2001). This may be an important methodological consideration in any attempt to discern morpho-syntactic differences attributable to ethnic dialect, from those attributable to pathological processes.

Our failure to find differences in thematic content of responses between the two ethnic groups contrasts with our observation of ethnic thematic content differences in tasks such as deriving lessons from fables or proverb interpretation (Ulatowska et al., 2001b). The themes depicted in our stimuli (e.g., frugality and hard times, family conflict, and boyhood mischief) may be common in both African American and Caucasian cultures, thus thematic content differences cannot be expected.

The discourse measures and methodology we employed may provide a useful complement to other approaches to discourse assessment. Micro-measures of content, syntactic complexity, cohesion, and productivity may be complemented by macro-differentiation of the discourse response genres. Differentiating between discourse genres may assist in assessing the functional ability to produce a range of discourse types that are important in daily communication. Moreover, micro-measures may differ by discourse genre (Ulatowska & Olness, 2000), just as they have been found to differ by stimulus (Bottenberg et al., 1987; Brenneise-Sarshad et al., 1991); task (Doyle et al., 1998); subject demographics (Juncos-Rabadan, 1996); and individual styles (Doyle et al., 1998). The future of clinical discourse analysis for individuals with aphasia may require a multi-factorial approach that employs a variety of stimuli, means of elicitation, discourse types, and analyses.

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APPENDIX: SAMPLE TRANSCRIPTS

C.P., African American woman with aphasia.
Narrative discourse on picture sequence ''*Boys and Apples*''.
''They got a apple tree and they picking them off the apple tree. And that's the bag. And they got them off the apple tree. They done spilled the whole thing of apples. I think they apples. [Interviewer: Yeah, they apples.] They done spilled them off. They done dropped the whole bag of apples. He done wasted them. They pulled them though the fence. They done spilled all of them.''

J.C., Caucasian woman with aphasia.
Narrative discourse on picture sequence ''*Boys and Apples*''.
''Ah, they are looking at the tree. They go in the crack and fetch apples. No fetch, no I mean steal apples. Ah the man comes and they get the apples and go out the crack and ah, dropping the apple. Runaway, the two boys run away. And the man ah, ah, ah, 'Do not steal where you do not go'.''

A.D., African American female non-brain-injured control.
Narrative discourse on picture sequence ''*Boys and Apples*''.
''The little boys, there was a hole in the fence and the little boys snook through the fence and stole some apples. They are trying to get away and they couldn't get the bag through the hole and they lost all the apples they got. I don't know if they got caught, but that was it.''

M.C., African American woman with aphasia.
Descriptive discourse on single picture ''*Easter Morning*''.
''There is a man reading the newspaper. Um, sweak da um there is a, two, three girls and a little boy going to church. Outside the window is a house a, a house.''

A.D., African American woman with aphasia.
Descriptive discourse on single picture ''*Easter Morning*''.
''Ah the family is going to church and the daddy is sitting at home and reading the paper.''

B.C., Caucasian man with aphasia.
Narrative discourse, in the form of drama, on single picture ''*Easter Morning*''.
''Wake up Sunday. Wife cleanie up for church, kids they strutted up. Boys, two boys, two girls, two girls and one boy cleanup for church too and me is, 'Ah man, honey I sick.' [Uses voice with higher pitch] 'Bill get up.' [Uses voice with lower pitch] 'No honey wait a minute, no I sick, you and the kids go the church, I stay home read the paper'. Sit down, 'Bye, bye'.''

M.C., African American woman with aphasia.
Descriptive discourse on single picture ''*Counting Money*''.
''It a man and a lady counting their money in a room. Ah, ah, ah, ah, it got a picture and a ah, a po, a po, a big pot.''

L.B., African American man with aphasia.
Descriptive discourse, in the form of a scenario, on single picture ''*Counting Money*''.
''Well, well, the mortgage payment is due. And the old man is trying to figure out how make his mortgage payment due and buy groceries. And the woman telling him, 'Don't worry about it. It gon be alright.' And ah, he have to scuffle and make his money due. But ah, pay half on the mortgage, pay half on the food''.
F.D., African American female non-brain-injured control.
Descriptive discourse on single picture ''*Counting Money*''.
''Grandpa and Grandma sitting at the kitchen table with the funds laid out, figuring out how they gon pay this month's bills and get the necessities. Papa is sitting there doing the figuring while Grandma listening.''