

FORM AND FUNCTION OF NARRATIVE REPETITION IN APHASIA: CLINICAL IMPLICATIONS

Clinical aphasiologists have long recognized that repetition is found in the discourse of speakers with acquired neurogenic communication disorders. Examples of repetition associated with pathology may include echolalia, perseveration, stereotypies, false starts, and recurrent digression. These types of repetition are often interpreted as signs of poor inhibition of undesired responses or poor activation of desired responses, e.g., as associated with anomia. What is typically not addressed in clinical research is the relative degree to which similar categories of performance errors are also found in the discourse productions of non-brain-injured communicators.

There are additional types of repetition that fill productive, communicative roles in discourse, but which have been less frequently studied in the clinical literature. Again, these productive repetition types are used both by speakers with aphasia and by speakers without aphasia. For example, in personal narratives, repetition may be used by narrators with and without aphasia alike to *emphasize* or *evaluate* important information (Olness, Matteson, & Stewart, 2010; Ulatowska, Olness, Hill, Roberts, and Keebler, 2000). Likewise, in situated conversational client-clinician exchanges, repetition may be used cooperatively to establish shared reference and to support learning (Hengst, Duff, & Dettmer, 2010).

Thus, non-productive types of repetition (such as false starts and perseverations) and productive types of repetition (such as repetition for emphasis or for establishing joint reference) may be found both in the discourse of speakers with aphasia and in the discourse of non-brain-injured speakers without aphasia. The ideal balance to be struck by any speaker, aphasic or non-aphasic, is to minimize repetition of the *dispensable* information in discourse, and to maximize selective repetition of the *indispensable or important* information in discourse. Consequently, a key goal in rehabilitation of discourse functionality may be to help the client shift away from repetition of dispensable discourse information and toward repetition of indispensable or important discourse information.

Method

Methods of the current study were designed to compare narrators with and without aphasia in their relative proportion of use of different types of repetition, and to create a means of profiling individuals for the variety of functions filled by repetition in their narratives.

Participants/interviewees

Participants were 39 English-speaking African-American (A) adults: Of these, twenty-one had aphasia (APH) associated with a history of left-hemisphere stroke and chronic aphasia, and eighteen had no neurological disorder or injury (NBI). Age, gender, education, and socioeconomic status of the two clinical groups were comparable. Participants were selected to be ethnically homogenous, to control for the potential effects of ethnicity on the use of repetition (Shepherd, 1994; Tannen, 1989). (See Table 1.) A range of aphasia severity levels was represented, based on Western Aphasia Battery (WAB) scores (Kertesz, 1982; see Table 2.) A variety of fluent and non-fluent aphasia types were represented. WAB scores of the NBI participants all fell into the normal range. (See Table 3.)

Narrative sample

The discourse sample consisted of personal narratives, to represent the functional ubiquity of narratives in everyday conversations (Norrick, 2000). Personal narratives of a frightening experience were elicited in a conversational context as part of a larger discourse interview. Participants were asked, "Think of a time when you were frightened or scared. What

happened?" All participants were interviewed individually by a middle-aged African-American female interviewer. The interviewer acted as an interested listener during the narration.

Analysis

Twelve categories of repetition were identified, based on differences in context, form, and timing (Tannen, 1989): the local discourse context of the repetition, the form of the repetition (exact vs. paraphrase), and the timing of the repetition (immediate vs. delayed). (See Appendix.) For each participant, the total instances of repetition were counted, and the percentage of total repetitions contributed by each repetition type was calculated. (See Figures 1 and 2.)

For each repetition type used in each group, the percentage of group members who used the repetition type at least once was calculated. For each group, the four repetition types used by the highest percentage of participants in that group were designated as being used by a high percentage of participants in that group (H); the four repetition types used by the lowest percentage of participants in that group were designated as being used by a low percentage of participants in that group (L); and the remaining four repetition types were designated as being used by a medium percentage of participants in the group (M). (See Table 4). For each repetition type, the relative percentage use (H, M, or L) was compared across the two groups.

For each narrative, the number of propositions (semantic units, roughly equivalent to an utterance) was counted. (See Tables 2 and 3.) For each narrative, the total number of uses of repetition of any type was counted. From these raw numbers, the proportion of repetitions per proposition was calculated for each narrative. (See Figures 3 and 4.)

Results

The APH narratives overall included less variety of repetition types, as compared to the NBI narratives (Figures 1 and 2).

However, the two groups were similar in relative proportions of participants in each group who used each repetition type (Table 4). For instance, the relative percentage of APH and NBI participants who used false starts and paraphrase at least once was high in both groups. Exceptions to this pattern were that a higher relative percentage of APH narratives included iconic repetition as compared to the NBI narratives; and a lower relative percentage of APH narratives included morpho-syntactic parallelism and repetition between indirect and direct speech, as compared to the NBI narratives.

The proportion of total repetitions per proposition was higher and less consistent in the APH narratives as compared to the NBI narratives. The proportion in the APH narratives ranged from 0.14 to 1.43 repetitions per proposition. (See Figure 3.) The proportion of total repetitions per proposition in the NBI group ranged from 0.08 to 0.36 repetitions per proposition. (See Figure 4.)

Discussion

Repetitions of different forms are likely to fill different functions (Jakobson, 1990; Norrick, 2000). This study provides evidence that narrators with aphasia may use higher proportions of repetitions associated with repair and cognitive-linguistic processing as compared to speakers without aphasia, and may use lower proportions of repetitions which depend on complex morpho-syntax, as compared to speakers without aphasia. The density of repetition use may also be higher for certain narrators with aphasia, as compared to narrators without aphasia. However, this study also provides evidence that narrators with aphasia, like narrators without aphasia, are able to use repetition for purposes of information emphasis (e.g., through paraphrase) and have the cognitive resources to highlight key information elements within the

narrative structure (e.g., through reprise and thematic repetition). Full-length narrative samples will be provided, to illustrate the preceding points.

When addressing functionality of a client's discourse productions, clinicians should work with the client to simultaneously decrease non-productive repetitions of dispensable information and selectively increase productive repetitions of indispensable or important information. In other words, findings of this study would suggest that discourse-level rehabilitation for a client with aphasia should consider the overall balance and gestalt of both the client's disordered abilities and his or her preserved abilities.

References

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Table 1: Gender, age, highest education level attained, and socioeconomic status of participants (2 clinical groups in two gender sub-groups)

African-American adults	<i>n</i>	Age (in years)		Highest education level attained		Socioeconomic status (maximum = 7)	
		Mean	Range	Mean	Range	Mean	Range
With aphasia	20						
Male	9	56	43-72	3	2-5	4.4	2-7
Female	11	56	33-74	3	2-7	4.6	2-7
Without aphasia	16						
Male	6	54	44-66	3	2-5	3.8	2-6
Female	10	53	45-61	4.5	1-7	5.3	3-7

Highest education level attained specified ordinally by number; 1=less than 12th grade, 2=high school graduate, 3=community college or trade school, 4=some college, 5=four-year college graduate, 6=some graduate school, 7=graduate school graduate. Socio-economic rating adapted from Featherman & Stephens (1980); higher numbers reflect higher socioeconomic status.

Table 2: Clinical characteristics of participants with aphasia, and length of narratives

Participants	Aphasia severity	WAB-AQ	Time post-onset (nearest ½ year)	Etiology	Handedness	Narrative length (in propositions)
A-APH 22	moderate	50.1	2.5	Left CVA, frontal lobe and basal ganglia	R	14
A-APH 26	moderate	50.4	3.0	Left CVA, frontotemporal and parietal	R	16
A-APH 27	moderate	52.4	0.5	(records unavailable)	R	22
A-APH 21	moderate	53.8	5.5	Left CVA (MCA)	R	11
A-APH 04	moderate	59.5	4.0	Left CVA, frontoparietal	R	14
A-APH 17	mild-moderate	74.8	0.5	Left CVA, frontal	R	9
A-APH 08	mild-moderate	77.2	4.5	Left CVA, temporal (MCA)	R	14
A-APH 23	mild-moderate	80.4	3.0	Left CVA, including basal ganglia and internal capsule	L	26
A-APH 10	mild-moderate	80.8	12.5	(records unavailable)	R	4
A-APH 11	mild	89.2	11.0	Left CVA (MCA)	ambidextrous	11
A-APH 33	mild	90.2	0.5	Left CVA, including basal ganglia	R	9
A-APH 14	mild	90.5	7.5	(records unavailable)	R	13
A-APH 03	mild	92.0	2.5	(records unavailable)	R	32
A-APH 15	mild	93.1	3.0	(records unavailable)	R	43
A-APH 28	mild	93.4	0.5	(records unavailable)	R	71
A-APH 32	mild	93.6	0.5	Left CVA, frontal	R	38
A-APH 18	mild	unavailable	0.5	Left CVA	R	8
A-APH 29	very mild	95.1	1.5	CVA, s/p TPA	R	38
A-APH 25	very mild	98.8	3.0	Left CVA, thalamic	R	11
A-APH 09	very mild	99.7	1.5	Left CVA, parietal	R	75

Table 3: Clinical characteristics of non-brain-injured, and length of narratives

Participants	WAB-AQ	Handedness	Narrative length (in propositions)
A-NBI 32	94.7	R	18
A-NBI 16	95.5	R	30
A-NBI 15	97.6	R	42
A-NBI 01	98.0	R	110
A-NBI 22	98.2	R	33
A-NBI 23	98.5	R	34
A-NBI 03	98.8	R	87
A-NBI 06	98.8	R	34
A-NBI 11	98.8	R	60
A-NBI 28	98.8	R	15
A-NBI 30	99.1	R	25
A-NBI 14	99.2	ambidextrous	35
A-NBI 21	99.4	R	51
A-NBI 02	99.6	ambidextrous	28
A-NBI 04	100.0	R	25
A-NBI 10	100.0	R	129

Table 4: Percentage of group members who used the different repetition types at least once

Repetition type	Narrators with aphasia	Narrators without aphasia
False starts	H	H
Iconic repetition	H	M
Expanded paraphrase	H	H
Paraphrase	H	H
Morpho-syntactic parallelism	M	H
Reprise	M	M
Thematic repetition	M	M
Discourse marker repetition	M	L
Repetition between indirect and direct speech	L	M
Repeated speech act	L	L
Conversational repetition	L	L
Expanded false starts	L	L

H = Used by high percentage of participants in the group

M = Used by medium percentage of participants in the group

L = Used by low percentage of participants in the group

Figure 3: Proportion of repetitions per proposition, APH participants

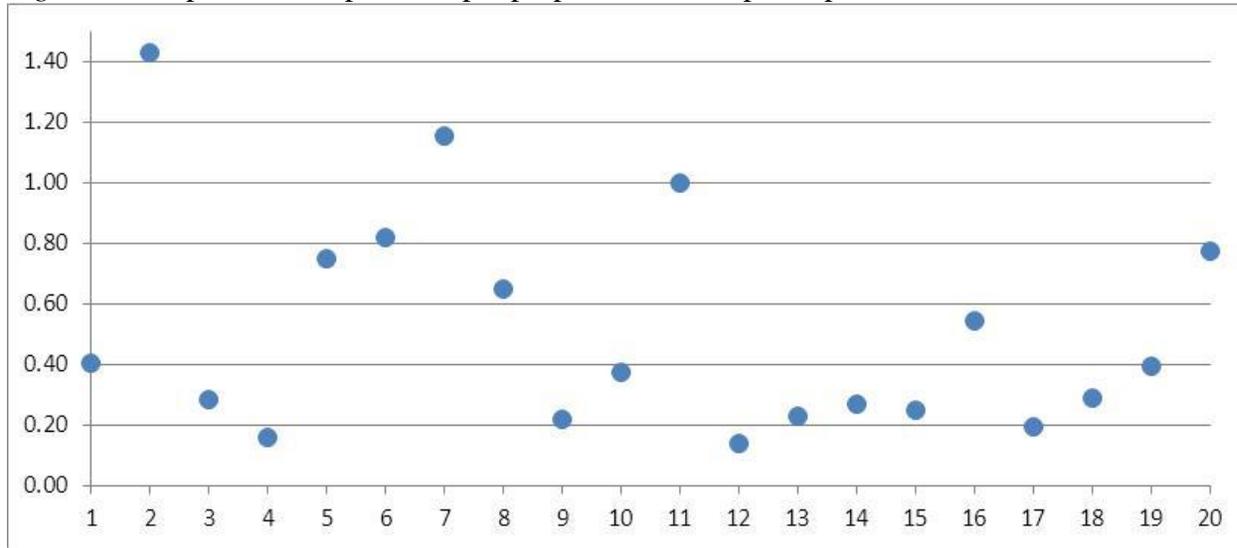
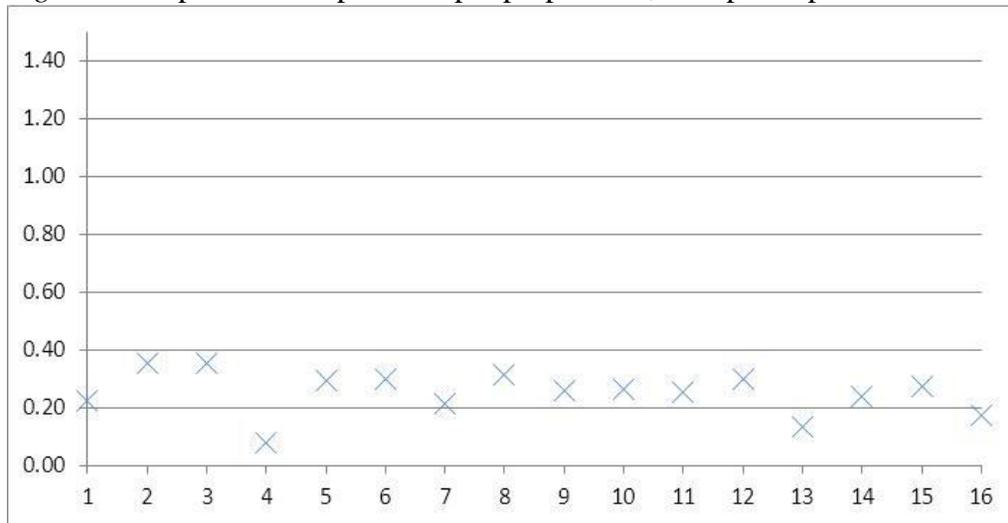


Figure 4: Proportion of repetitions per proposition, NBI participants



Appendix: Repetition Types

<u>Repetition type</u>	<u>Description</u>	<u>Examples</u>
Reprise	Re-statement of content following intervening material or interruption	<i>So I don't know if he's out now. That's the, that was the same year my son died in '93. So I don't know if he's out now...</i> (A-NBI-01)
Discourse marker repetition	Speaker-specific use of discourse markers	<i>And of course, uh, I sat through it. I'm frightened of snakes, of course.... Of course, when the show was over I immediately had to go to the restroom.... And he made the assumption, of course, that....</i> (A-NBI02)
Conversational repetition	Repetition of interlocutor	(Interviewer: <i>He was your angel.</i>) Participant: <i>He sure was.</i> (Interviewer: <i>He was your angel.</i>) Participant: <i>He sure was.</i> (A-NBI-01)
Iconic repetition	Encodes durativity, iteration, or plurality	<i>He just talked, talked, talked, talked...</i> (repeated 12 times) (A-NBI-03)
Expanded paraphrase	Paraphrased content is augmented	<i>She was gone. She just knew she was gone.</i> (A-NBI-01) <i>...she's alive.. She's on top of the dirt and the dirt's not on top of her.</i> (A-NBI-01)
Thematic repetition	Specific content carried across the discourse, as a discourse theme	[preceding propositions about a man shooting a woman] <i>And for what?</i> [six intervening propositions about a man shooting a woman] <i>And for what?</i> (A-NBI-01)
Repetition between indirect and direct speech	Original statement is in indirect speech, and is later repeated within direct speech	<i>And so I thought someone had played a horrible joke on me...</i> [indirect speech, followed by direct speech...] " <i>I thought someone was playing a joke on me</i> " [as spoken by narrator to police officer]
Morpho-syntactic parallelism	Morphology or syntax is repeated	<i>I just kept <u>talki</u>ng to him... and <u>singi</u>ng and <u>talki</u>ng</i> (A-NBI10) <i>And and one of (th)em say, "What difference does it make, <u>who we are</u>?"</i> <i>Don't worry about <u>who we are</u>"</i> (A-NBI-03)
Repeated speech act	Same speech act, different wording	<i>Princess don't leave with him. Why do you have to leave with him?</i> (A-NBI01)
Expanded false starts	Statement is progressively expanded	<i>He had a leak, he had a leak of red</i> (A-NBI03) <i>That's why his jaw is, that's why his jaw is torn up</i> (A-NBI03)
False starts	Immediate re-start of statement	<i>I, I kind of turned</i> (A-NBI01) <i>a, a shotgun</i> (A-NBI01)
Paraphrase	Re-statement, different wording	<i>He was less than a man... that's a wimp.</i> (A-NBI01)