Background

- Narratives are often the basis of daily conversational interactions.
- When narrative skills are compromised, functional communication is negatively impacted.
- Anomic aphasia is primarily characterized as a word-finding disorder; narrative coherence can also be impacted in this population.
- In order to continue progressive development of interventions for persons with anomic aphasia (PWAa), more information regarding narrative strengths and weaknesses in this population is needed.
- Deficits may be so minor that they are not apparent on traditional standardized assessment measures, but it should not be assumed that they do not exist and do not affect functional communication abilities.
- Story grammar analysis is a well-known and commonly used method of analyzing narrative discourse in several clinical populations.

Aims:
1. To determine if PWAs differ from their non-brain injured peers (NBIs) on discourse and story grammar measures.
2. To explore the relationship between story grammar and other discourse measures.
3. PWAs with the highest WAB-R AQ scores were selected for this study. These individuals should be the PWAs most similar to control subjects, so a finding of differences in story grammar elements would support the sensitivity of the measures.

Methods

Database
- Cinderella story transcripts of 14 NBIs and 14 PWAs were retrieved from the AphasiaBank database.
- Matched for gender, race/ethnicity, age, years of education, and handedness.
- NBIs: Age = 60.8 years (range = 36.2 to 82.3, SD = 12.5)
  - Education = 15.4 years (range 11-22 years, SD = 2.85)
  - 7 males, 14 white, 14 right-handed
- PWAs: Age = 58.5 years (range 34.4 to 83.2, SD = 13.3)
  - Education = 14.9 years (range 12-21 years, SD = 1.97)
  - 7 males, 14 white, 14 right-handed
- WAB-R AQ = 91.3 (range = 88.3 – 93.4, SD = 1.54)

Story Grammar Coding
- The Cinderella story was chosen based on its length and complexity, making it a better comparison to conversational speech than other types of discourse (i.e. procedural, picture description).
- Transcripts were divided into relevant concepts (i.e., utterances about the story that contained a subject, one main verb, and object (if appropriate).
- The following were calculated:
  - Story Length: Total number of tokens in transcript.
  - Story Component Usage: Frequency of use of seven different story components.
  - Story Efficiency: Ratio of total number of tokens with story grammar code to total number of tokens in transcript.
- Core Lexicon: The total number of words spoken in the transcript that have been identified in previous research as the core lexicon (spoken by 50% of AphasiaBank control participants e.g., Cinderella, prince, castle, end state, etc).

Data Analysis
- Aim 1: Wilcoxon Signed-Rank Tests
- Aim 2: Spearman’s Rank Order Correlation (rho)

Table 1. Story Grammar Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
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<tbody>
<tr>
<td>1. Setting</td>
<td>Habitual or static states of characters and locations.</td>
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<td>2. Initiating Events</td>
<td>The immediate cause for a response on the part of the protagonist.</td>
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<td>3. Response</td>
<td>The psychological state of the character after the initiating event or a verbal response to the situation.</td>
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<td>4. Plan</td>
<td>Statements that specify a character’s strategy for obtaining the goal.</td>
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<td>5. Attempt</td>
<td>The character’s overt action(s) to obtain the goal.</td>
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<td>6. Direct Consequence</td>
<td>The character’s success or failure at attaining the goal(s); any changes in the sequence of events resulting from the character’s actions.</td>
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<td>7. Reaction</td>
<td>The way the character feels or reports feeling about the outcome.</td>
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Discussion

- Communication deficits were not captured by WAB-R AQ scores in our PWAs, as all were performing near ceiling.
- Story grammar analysis reveals significant differences between the non-brain-injured controls and persons with “mild” anomic aphasia in this study.
- A reduction in the number and type of story components negatively impacts story length and story coherence.
- Word-finding deficits, the hallmark of anomic aphasia, are likely responsible for reduced usage of story components (microlinguistic deficits contributing to macrolinguistic deficits).
- The correlation between story length and core lexicon is much greater in PWAs than NBIs, and one interpretation is that reduced vocabulary drives reduced story use in PWAs.
- Traditional naming therapy is unlikely to result in improved narrative performance in this population (PWA who are already at or near ceiling). Word-finding in narrative and conversation would be most beneficial.
- Story grammar and other discourse analyses consistently reveal marked differences between PWAs and controls, even when treatment has been suspended because of high levels of performance. If increased life participation is truly the goal of speech-language intervention, then narrative discourse, and not traditional assessment measures, would be a better candidate for decision-making regarding treatment termination.
- Future directions includes assessment of a corpus of individuals in the AphasiaBank database who received a score of Not Aphasic by WAB, but who clearly have communication deficits following stroke that impact their daily lives.