Cinderella Narratives by Persons with Aphasia: The Production of Nouns, Verbs, and Main Ideas

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Introduction

Speech-language pathologists are interested in functional communication skills of persons with aphasia (PWAs). confrontation naming tasks tell us something about a person's lexical retrieval ability, but does not necessarily mean that verbal communication at the discourse level will be successful.

Johnston et al. (2012) and Dillow et al. (2013) performed word-level analyses of narratives produced by PWAs. The current study examines narratives of PWAs using a discourse-level analysis to explore whether the ability to produce core single nouns and verbs in a narrative is related to the ability to produce main ideas of the story.

Johnston et al. (2012): Compared PWAs' confrontation naming to production of core nouns and verbs in telling the Cinderella story.

Controls produced significantly more verbs than PWAs (90%) vs. 13.5% (p<.001).

Subjects with Broca's aphasia produced significantly fewer verbs than other PWAs (21% vs. 90%; Amongst). Anomic

Participation Inclusion/Exclusion Criteria:

- Diagnosis of aphasia

- Adequate vision and hearing

- English-speaking monolingual

- Left hemisphere damage post-stroke

- Aphasia duration ≥ 6 months

- No history of other neurological conditions

Subjects

Verbal: Mean corrected comprehension score of 76.7

Controls: 26/27

PWAs: 77/77

Subjects with Broca's aphasia produced significantly fewer verbs than other PWAs (21% vs. 90%; Amongst). Anomic

Results

1) Do persons with different types of aphasia differ in the number of core nouns, core verbs, or main ideas they produce while telling the Cinderella story? Yes! There was a strong correlation between the number of core nouns or core verbs produced and the number of main ideas produced.

2) Is there a positive correlation between the number of core nouns or core verbs produced and the number of main ideas produced? Yes! There is a positive correlation between the number of single core nouns or single core verbs and the number of main ideas produced.

Hypotheses

1) Persons with Anomic and Conduction aphasia will produce more core nouns, core verbs, and main ideas than subjects with Broca’s and Wernicke’s aphasia.

2) There will be a strong correlation between the number of single core nouns or single core verbs and the number of main ideas produced.

Results of a stepwise multiple regression analysis showed that nouns most strongly accounted for the variability in main ideas production, followed by verbs. Total number of words and WAB AQ did not contribute to the variability in number of main ideas produced.

Conclusions

Using the CLAN program (MacWhinney et al., 2011), transcripts of Cinderella narratives from the 77 PWAs were analyzed for the presence of the core (20) nouns and verbs produced by control subjects (Johnson et al., 2012).

We identified 25 main ideas from the transcripts of 102 control participants from the AphasiaBank database, and then tallied the number of main ideas produced by the 77 PWAs.

Inter-rater reliability for # of main ideas produced was calculated for 10.3% (n = 8) of main ideas produced. For scores that differed by ≤ 1 main idea, inter-rater reliability was 75%.

Post-Hoc Analyses and ANCOVA

Results of one-way ANCOVAs showed a significant difference among the types of aphasia in terms of:

- number of nouns produced (F [3.73] = 7.77, p < .001)
- number of main ideas produced (F [3.73] = 8.15, p < .001)
- severity of aphasia (WAB AQ) (F [3.73] = 9.62, p < .001)

Detailed analyses revealed the following:

- PWAs with Broca's aphasia produced significantly more core nouns (25) than those with Wernicke’s aphasia.

- PWAs with Broca’s aphasia produced significantly more core verbs than those with Wernicke’s aphasia.

- PWAs with Broca’s aphasia produced significantly fewer main ideas than those with Anomic aphasia.

References


Appendix: Table of main ideas produced by control subjects (Johnson et al., 2012).