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Comparing Measures of Discourse Deficits in Individuals with TBI and CVA

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INTRODUCTION

Traumatic brain injury (TBI) and cerebrovascular accidents (CVA), otherwise known as strokes, can both result in discourse deficits.

The present study compares the narrative discourse of individuals with CVA to individuals with TBI. This study aims to (1) determine potential diagnostic differences and (2) identify any consistent symptoms that may best guide treatment.

NOVEL MEASURES

Microlinguistic Deficits Text-Level Analysis	Macrolinguistic Deficits Within-Sentence Analysis
Type Token Ratio: measures lexical diversity by dividing types of words by the total words.	Story Grammar: measures overall story structure by dividing narrative episode T-units (either initiative event, attempt, or direct consequence) by total T-units.
Easability: measures syntactic simplicity or the degree to which sentences have shorter, more familiar structure.	Story Completeness: measure of the important components expressed in story retelling
Words Before Main Verb (WBMV): A measure of working memory	

PREDICTIONS

- WBMV will be lower for individuals with TBI (Graesser et.al., 2006).
- Easability higher for CVA
- Story Grammar will be lower for those for CVA

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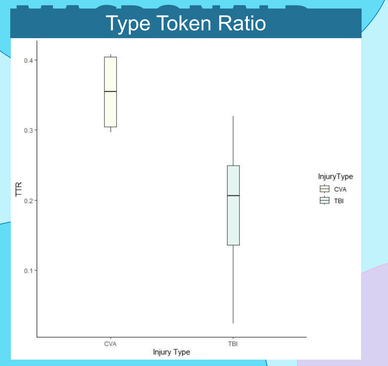
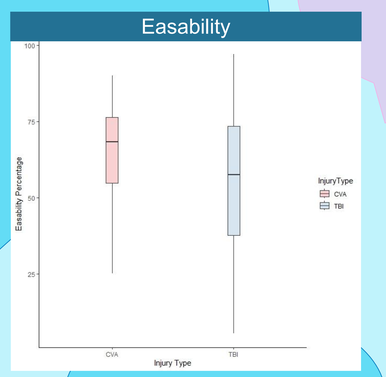
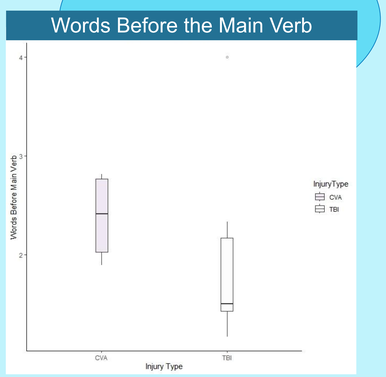
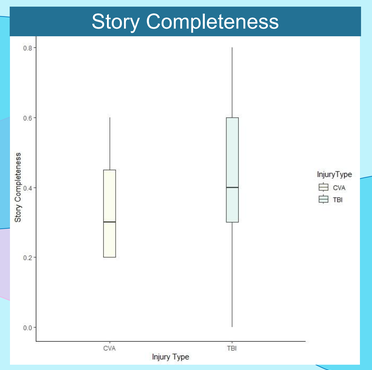
OLD

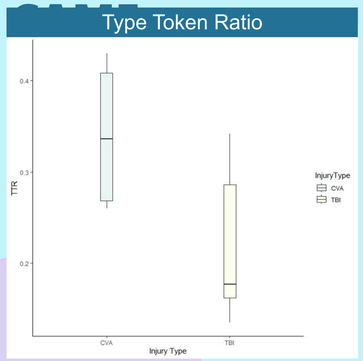


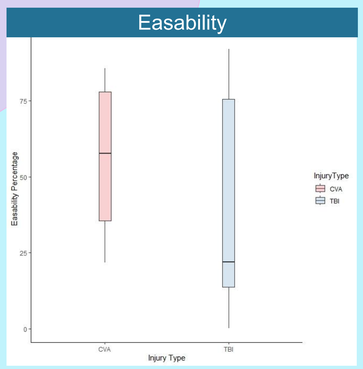


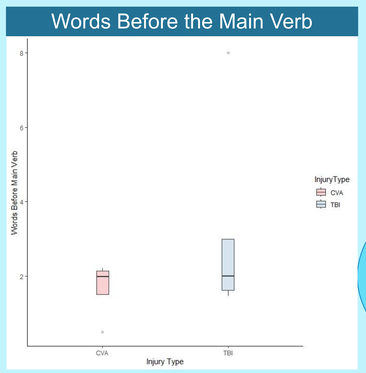


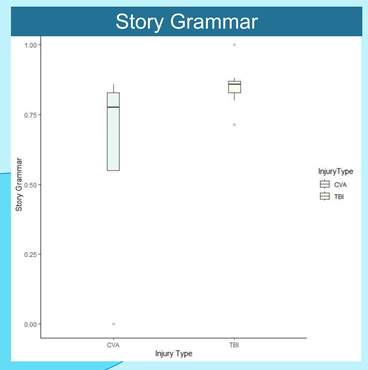


RELATIVES









METHODS & PROCEDURES

Participants were recruited from brain injury groups in Nevada.

- 4 individuals with previous Cerebrovascular Accident (CVA)
- 7 individuals with previous Traumatic Brain Injury (TBI)

2. Individuals completed a Quick Aphasia Battery (QAB) exam.
3. Narrative discourse samples were collected from 16-frame visual stories, Old McDonald Had and Apartment House (Barrett, 1998) and The Relatives Came (Ryant, 1993).
4. Following each viewing, participants immediately recounted the story.
5. Analysis:

(a) Transcripts for both stories were microlinguistically analyzed using the Coh- Metrix (2017) tool.

(b) Story Completeness (SC) and Story Grammar (SG) were scored by the examiner. Old MacDonald transcripts were used for SC and The Relatives Came transcripts were used for SG.

RESULTS & CONCLUSIONS

Linear mixed-effects models revealed no statistical differences. Possible conclusions:

1. This indicates similarities in the narrative discourse between TBI- and CVA- affected individuals.
2. Results stem from variability between within groups (e.g., recovery time, location of injury, severity of injury).

[redacted]

ADDITIONAL REFERENCES

Graesser A. C., Cai Z., Louwerse M., Daniel F. (2006). Question Understanding Aid (QUAID): A Web facility that helps survey methodologists improve the comprehensibility of questions. *Public Opinion Quarterly*, 70, 3–22.