Using Discourse Analyses to Identify Subtle Language Deficits

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Introduction

- Aphasia is an acquired language disorder typically caused by stroke
- The Western Aphasia Battery-Revised (WAB-R; Kertesz, 2007) is a common tool used to assess language function in individuals with aphasia
  - The cut-off for not-aphasic on the WAB-R is an aphasia quotient (AQ) at or above 93.8
  - However, oftentimes these individuals complain of mild language difficulties
- A multi-level discourse analysis procedure can detect discourse deficits at both the micro- and macro-linguistic level (Marini et al., 2011)
  - These procedures have been shown to be more sensitive to language deficits than standardized measures (Marini et al., 2011; Sherratt, 2007; Wright & Capilouto, 2012)

Purpose

- The purpose of this study was examine micro- and macrolinguistic measures individuals determined non-aphasic by WAB-R AQs (NABW) and control individuals across three discourse tasks

Research Questions

- Do NABW score differ from control individuals with no history of neurogenic disorders damaged group (NBD) on microlinguistic measures?
- Do NABW differ from NBD on macrolinguistic measures?

Participants - retrieved from AphasiaBank database

- NABW Group included N = 27
- NBD Group included N = 27
- Groups were matched for:
  - Age
  - Education
  - Gender

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Assessment and Measures

Discourse Measures:

- **Single picture description task**
  - Cat in tree

- **Story narrative**
  - Cinderella

- **Procedural discourse task**
  - Steps to make a PB and J sandwich

Marini Analysis (Marini et al., 2011)

Microlinguistic Error Measures:

- **Lexical Analysis**
  - # of words
  - Semantic paraphasia
- **Morpho-syntactic Analysis**
  - Substitution of a function word
  - Substitution of a bound morpheme
  - Omission of function word
  - Content omission

Macrolinguistic Error Measure:

- **Global Coherence**
  - Filler utterance
  - Repetition of utterance
  - Conceptually incongruent utterance
  - Tangential utterance

Example

- She gets into the <kə ɪdʒ@u [: carriage]>
- [* p] and take [*m]. And [/] and the [/] the
- <princess [: prince]> [* s:r] decided he's gonna find her.

Legend	
[* p]	Phonological paraphasia
[* m]	Substitution of bound morphemes
[* s:r]	Semantic paraphasia
[/]	Repetition

Results

		NABW	NBD	P-value
Lexical errors	Cat in tree	.745(.312)	.643 (.471)	.356
	Cinderella	.623(.210)	.741(.173)	**.031**
	Sandwich	.697(.369)	.484(.482)	.073
Grammatical errors	Cat in tree	.364(.451)	.00(.00)	**<.001**
	Cinderella	.435(.395)	.00(.00)	**<.001**
	Sandwich	.419(.397)	.00(.00)	**<.001**
Global Coherence errors	Cat in tree	.567(.394)	.352(.456)	.06
	Cinderella	.410(.345)	.241(.424)	.122
	Sandwich	.462(.328)	.451(.481)	.919

Discussion

- Participants with AQs at or above 93.8 on WAB-R can present with subtle deficits in discourse production
- No significant differences were found between groups for global coherence across the three discourse tasks
- Significant differences for grammatical errors for all discourse tasks
  - NABW group had more errors than the NBD group
- ***Clinical Implications***:
  - Need to be cautious in interpreting test battery results as "normal" performance; subtle language deficits may be present at the discourse level

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