Exploring the Coherence of Standard Aphasia Noun and Verb Naming Tests

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Introduction

How well is a naming deficit in the same patient captured by different tests?

- A naming deficit is the most common symptom across aphasia subtypes (Goodglass & Wingfield, 1997).
- People with aphasia can show differential impairments in verb and noun naming (Piras & Marangolo, 2007; Hillis et al., 2004, Mätzig et al., 2009).
- Many naming tests exist, but their interrelationship has not been extensively explored.
- It is not fully clear how noun naming ability is related to verb naming ability as measured by standardized language tests.

Methods

- **20 individuals with aphasia from left hemisphere stroke** (time post-onset range: 1 month to 18 years), were given verb and noun naming subtests from the:
  1. **Northwestern Naming Battery** (NNB; Cho-Reyes & Thompson, 2012)
  2. **Comprehensive Aphasia Test** (CAT; Swinburn, Porter, & Howard, 2004)
  3. **Western Aphasia Battery** (WAB; Kertesz, 2007)
- Spearman correlations were performed within and between naming subtests.
- **In a subset of 8 PWA,** we explored changes in the first-year post-stroke (1-, 3-, 12, and 24 months post) using the Wilcoxon Paired Signed Rank test.

Results

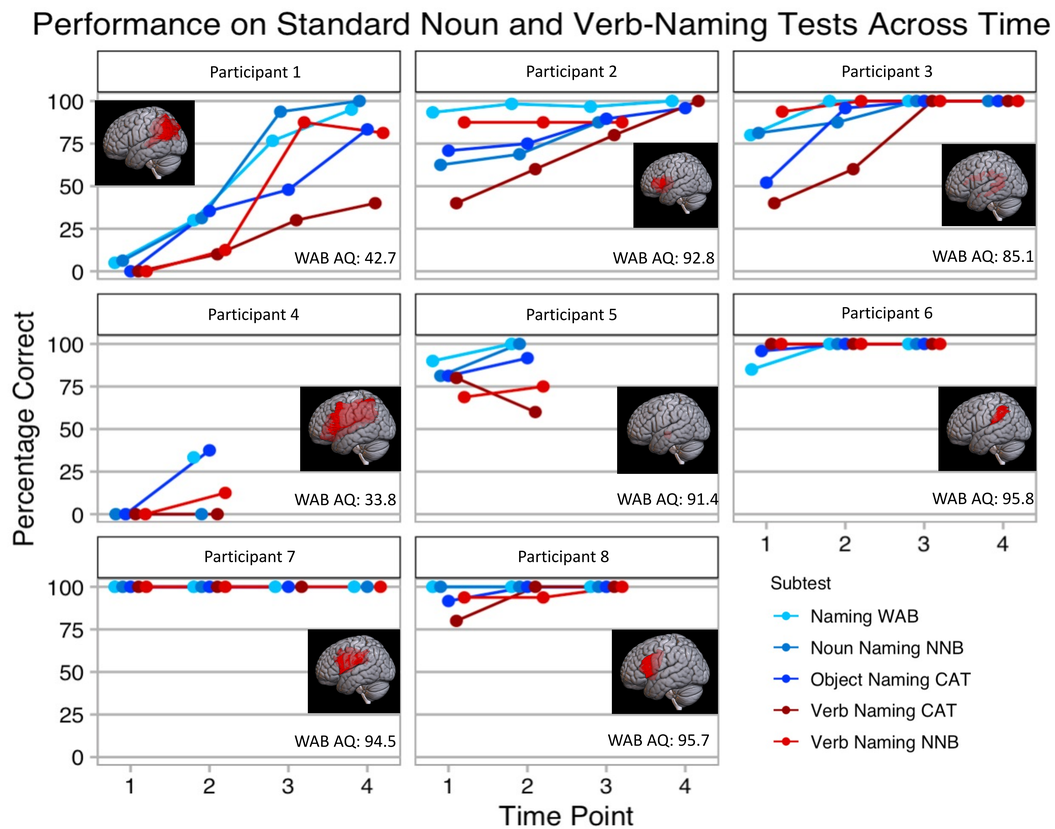
Spearman Correlations & Wilcoxon Signed Rank for Naming Subtests

	Spearman correlations				
	Noun Naming CAT	Verb Naming CAT	Nouns Naming NNB	Verbs Naming NNB	Noun Naming WAB
Noun naming CAT	-				
Verb naming CAT	0.808***	-			
Noun naming NNB	0.832***	0.753***	-		
Verb naming NNB	0.820***	0.775***	0.891***	-	
Noun naming WAB	0.899***	0.797***	0.897***	0.939***	-
	Wilcoxon p-values				
Between time points 1 and 2	*0.022**	*0.234*	*0.034**	*0.034**	*0.022**
Nouns v. verbs by subtest	*0.790*		*0.377*		
Nouns v. verbs across tests	*0.354*				

Using Spearman correlations, we found that all subtests for noun and verb naming were highly intercorrelated.

The Wilcoxon Paired Signed Rank test showed that participants predictably improved in the first 6 months on all tests but the CAT Verb Naming test.

The rate of change for verb naming underwent the greatest change in the first year. in a subset of 8 patients.



Discussion

- Standard noun and verb naming tests (CAT, NNB, WAB) provide consistent data characterizing language recovery from stroke.
- For research and clinical purposes, results from these naming tests can be directly compared.
- Descriptively, verb naming showed a steeper rate of recovery in the first year compared to noun naming, which will be further investigated in the cohort over time.
- The two individuals with suboptimal recovery had lesions to the posterior temporoparietal region, where damage is likely to cause poor recovery of language (Wilson et al., 2022; Crinion, 2007).
- Future studies could investigate the neural substrates that support differential rates of recovery in noun and verb retrieval.

References & Support

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Supported by: National Institutes of Health (NIDCD R01DC016345)