

“IT’S ON THE TIP OF MY TONGUE!” – BASE RATES AND NEUROANATOMICAL CORRELATES OF CONFRONTATION NAMING DEFICITS IN PATIENTS WITH MULTIPLE SCLEROSIS

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Background

- Word-finding difficulty is a commonly reported complaint in patients with multiple sclerosis (pwMS), though it is often under evaluated in clinical care.
- Many cognitive batteries recommended for pwMS include fluency tasks, they do not include naming tasks.

Objectives

- To examine the rates of confrontation naming impairment in pwMS.
- To examine neuroanatomical correlates of confrontation naming in pwMS.

Methods

- A total of 185 adult pwMS who were seen for clinical neuropsychological evaluation were included
- Additional inclusion criteria included estimated premorbid IQ ≥ 70 , English-speaking, and valid performance on formal validity measures.
- Neuropsychological tests included: Boston Naming Test (BNT); Controlled Oral Word Association Test (COWAT); and Animal Fluency (AF).
- 50 patients also underwent brain MRI within one year of neuropsychological testing. Variables included whole brain fraction (WBF) and T2 lesion volume (T2LV).

Statistical Analyses

- Descriptive statistics characterized the sample in terms of demographic, clinical, and cognitive variables.
- McNemar's tests compared within patient rates of impairments on language tests
- Partial correlations (controlling for age and sex) examined the associations between language and MRI variables.

Results

Table 1 Characteristics of the Sample

	Total (n=185)	With MRI (n=50)
Age, years, mean (SD)	48.75 (11.23)	46.74 (12.07)
Education, years, mean (SD)	14.53 (2.39)	14.94 (2.39)
White, n (%)	153 (82.7 %)	42 (84.0 %)
Female, n (%)	135 (73.0 %)	32 (64.0 %)
MS type		
RRMS	145 (78.4 %)	39 (78.0 %)
SPMS	23 (12.4 %)	6 (12.0 %)
PPMS	17 (9.2 %)	5 (10.0 %)
MS years, mean (SD)	15.01 (11.48)	13.64 (9.31)

Table 2 Mean performance on Language tests

	Total (n=185)	With MRI (n=50)
BNT	44.33 (12.80)	46.05 (13.14)
AF	44.57 (10.66)	42.81 (11.51)
COWAT	42.21 (9.54)	43.53 (10.57)

Note: BNT = Boston Naming Test. COWAT = Verbal Fluency using letters F, A, and S. AF = Animal Fluency.

- Mean scores across language tasks fell within the low average-to-average range.

Results (continued)

- PwMS showed greater impairment on the BNT (27.6%) as compared to AF (18.4%; $p=.002$). There were no differences between BNT and COWAT (24.3%; $p=.304$).
- BNT significantly correlated with WBF and T2LV while AF only correlated with T2LV. COWAT did not correlate with MRI variables.

Table 3 Partial Correlations between Language and MRI Measures

	BNT	COWAT	Animals
WBF	.32*	.08	.24
T2LV	-.30*	-.09	-.34*

Note: BNT = Boston Naming Test. COWAT = Verbal Fluency using letters F, A, and S. AF = Animal Fluency. WBF = whole brain fraction. T2LV = T2 lesion volume.

Conclusion

- Though average performance on language tasks fell within the broadly average range, confrontation naming was impaired in more than one-quarter of patients.
- Rates of naming impairment were similar for naming and phonemic fluency, while naming was more commonly impaired than semantic fluency.
- Naming correlated with both cerebral volume and lesion burden while semantic fluency correlated only with lesion burden; phonemic fluency did not correlate with neurological disease burden.
- Future research should continue to investigate the clinical presentation and neuroanatomical underpinnings of language dysfunction, particularly naming/word-finding difficulties, in pwMS.