



Assessing Performance on the Philadelphia (repeatable) Verbal Learning Test in Non-Demented Older Adults: The Vanderbilt Memory & Aging Project

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Background

- The Philadelphia (repeatable) Verbal Learning Test (PrVLT) is a serial list learning test to assess episodic memory.
- We examined performance on the 12-word PrVLT across learning, recall, and recognition trials (including error types) between cognitively normal (NC) participants and mild cognitive impairment (MCI) participants.

Methods

- Participant data were drawn from the Vanderbilt Memory and Aging Project, a case-control longitudinal study investigating vascular health and brain aging.
- At screening, participants were diagnosed with NC or MCI (Albert et al., 2011) via consensus conference following a comprehensive assessment.
- Separate from eligibility determination, 163 NC and 165 MCI participants completed the PrVLT. See **Table 1** for characteristics.

Table 1. Participant Characteristics

	NC n=163	MCI n=165	p-value
Age, years	73±7	73±8	0.98
Sex, % female	31	31	0.92
Education, years	16±3	15±3	0.001
Race, % White	87	91	0.39
WRAT-III, raw score	51.4±4.3	49.1±5.3	<0.001

Note: WRAT-III=Wide Range Achievement Test 3rd Edition

Table 2. PrVLT Learning and Error Rates

	NC n=163	MCI n=165	p-value
Trial 1-5 Total Correct	43.5±7.4	32.5±7.9	<0.001
Trial 1-5 Primacy Effect (%)	40±10	40±10	0.19
Trial 1-5 Middle Effect (%)	30±10	20±10	<0.001
Trial 1-5 Recency Effect (%)	30±10	40±10	<0.001
List A Intrusions on List B	0.1±0.4	0.5±1.0	<0.001
SDCR Total Intrusions	0.3±0.8	1.6±1.8	<0.001
SDCR List B Intrusions	0.1±0.3	0.4±0.7	<0.001
LDCR Total Intrusions	0.4±0.7	1.6±1.8	<0.001
LDCR List B Intrusions	0.0±0.2	0.2±0.5	<0.001

Note: SDCR=Short Delay Cued Recall; LDCR=Long Delay Cued Recall

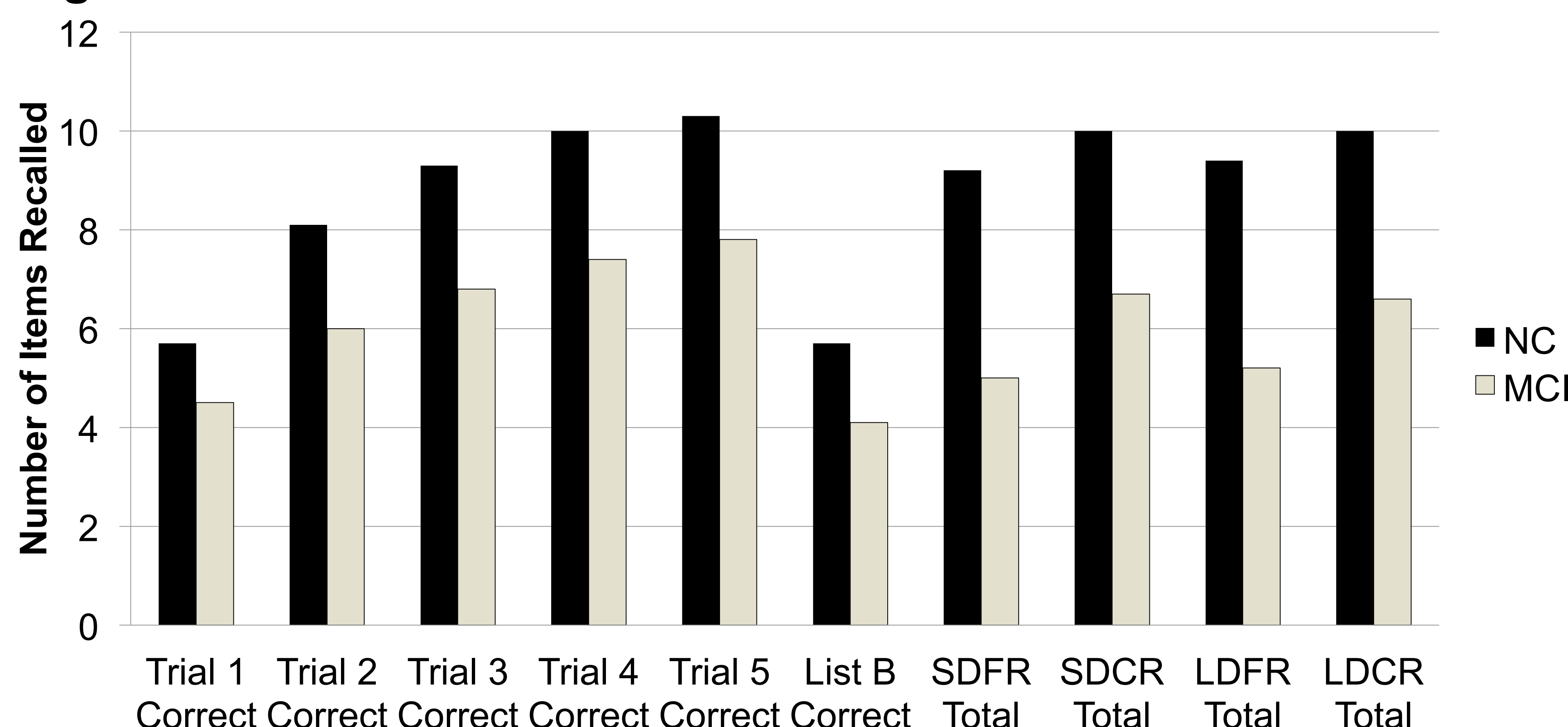
Analyses & Results

- Wilcoxon tests assessed differences of PrVLT recall indices (**Figure 1**), learning profile and error rates (**Table 2**), and recognition indices (**Figure 2**) between diagnostic groups.

Conclusions

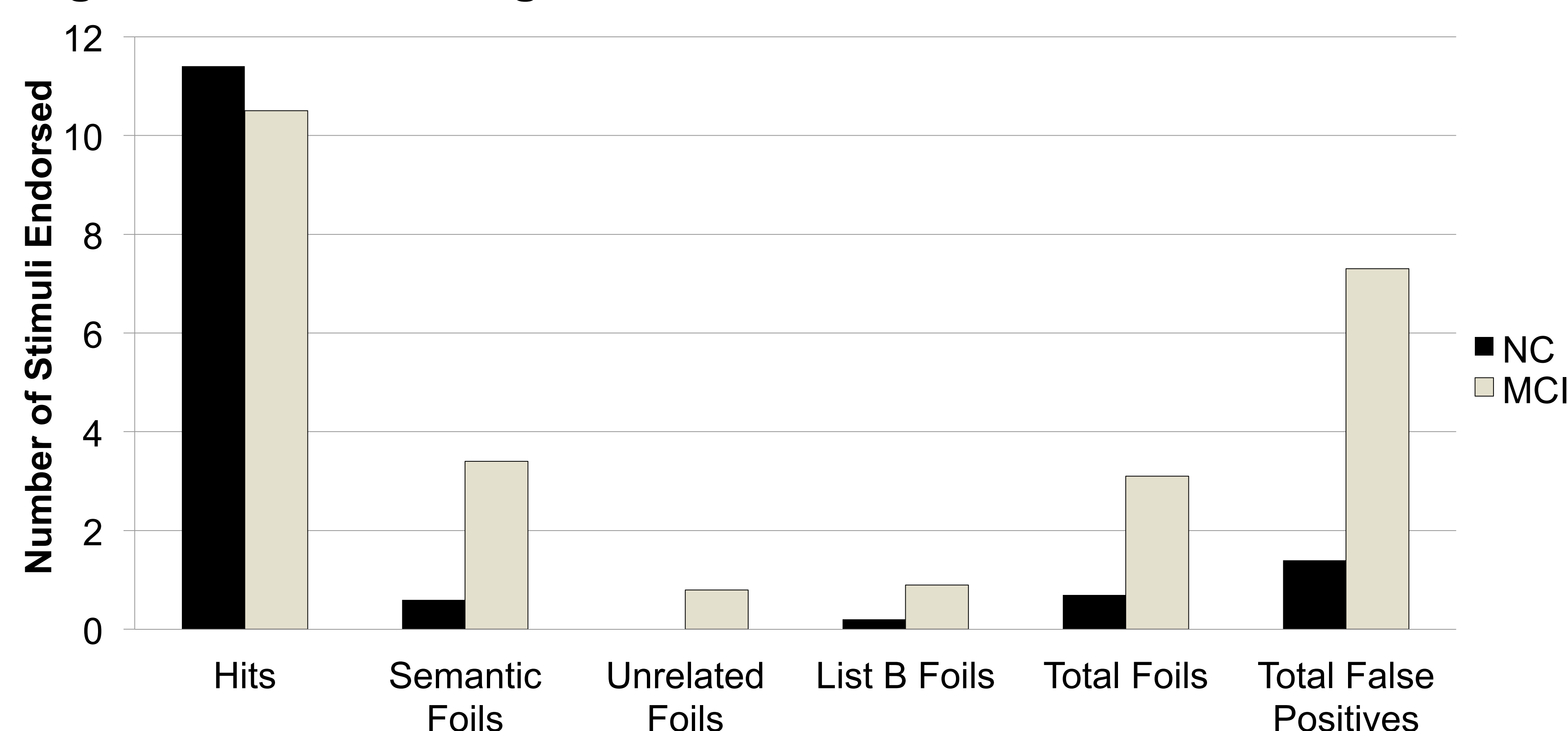
- The 12-word PrVLT was developed to enhance existing serial list learning tests by providing a word list with even prototypicality across forms for repeated administration (Libon et al., 2011).
- Our study supports the clinical utility of the PrVLT by demonstrating the measure's ability to detect differences in NC and MCI groups on total recall, learning, error rates, and recognition patterns.
- Future validation is needed to understand the predictive utility of PrVLT and linking PrVLT performance with biomarkers of unhealthy brain aging.

Figure 1. PrVLT Recall Indices



Note: SDFR=Short Delay Free Recall; SDCR=Short Delay Cued Recall; LDFR=Long Delay Free Recall; LDCR=Long Delay Cued Recall; all comparisons significant at p<0.001

Figure 2. PrVLT Recognition Indices



Note: all values significant at p<0.001