

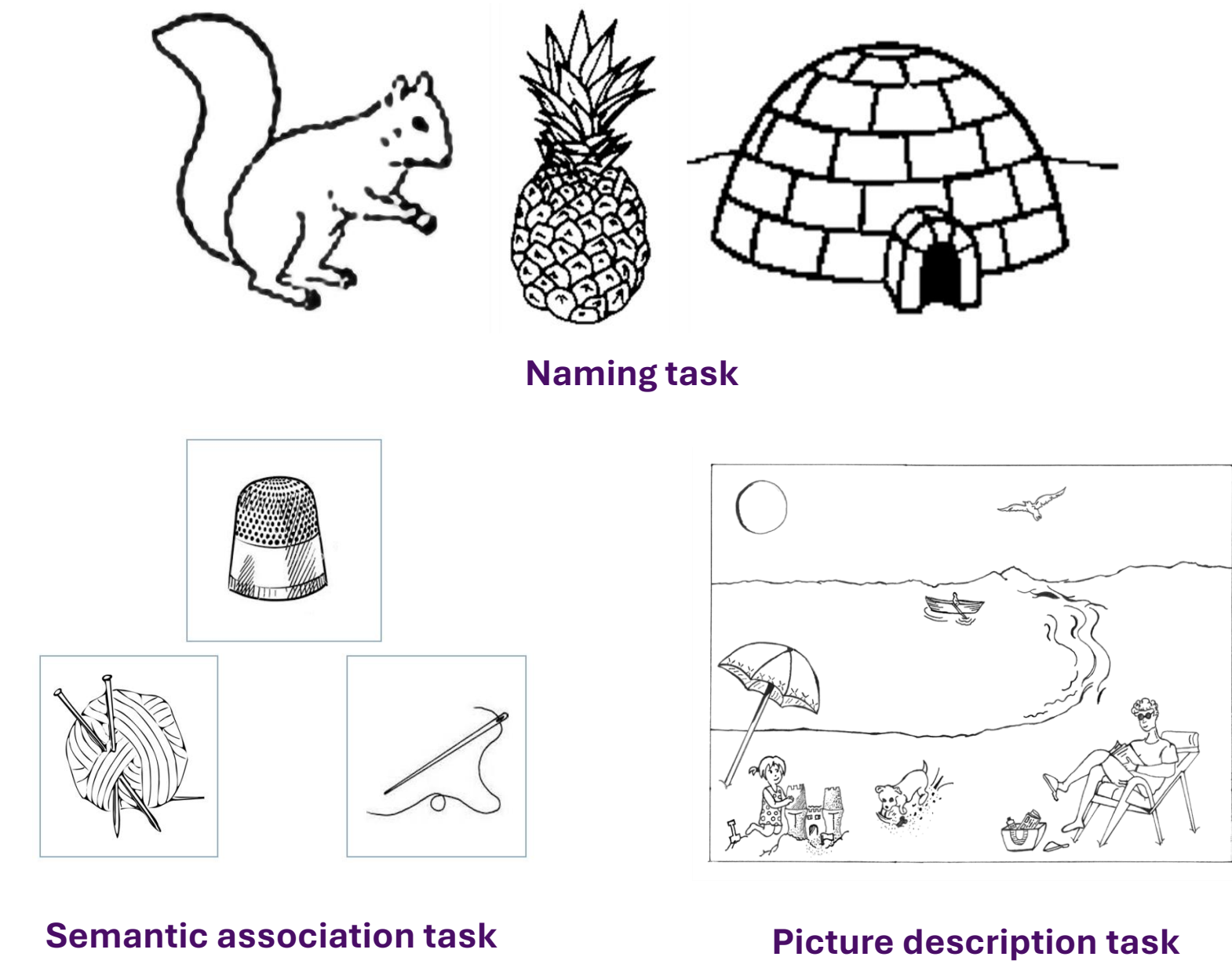
The Dutch Mini-Linguistic State Examination (MLSE-NL): Findings in Primary Progressive Aphasia (PPA)

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The MLSE-NL can successfully detect and differentiate the different variants of PPA in a Dutch-speaking population.

INTRODUCTION

Changes in speech and language occur as the first symptoms of Primary Progressive Aphasia (PPA). The Mini-Linguistic State Examination (MLSE) is a short speech and language screening test developed to detect and diagnose PPA in English-speaking patients (Patel, 2021). The use of speech and language testing in FTD is limited by the fact that 75% of studies investigate English-speaking patients (Coppieters, 2024). We adapted the MLSE into Dutch and validate this version. See below for task examples.

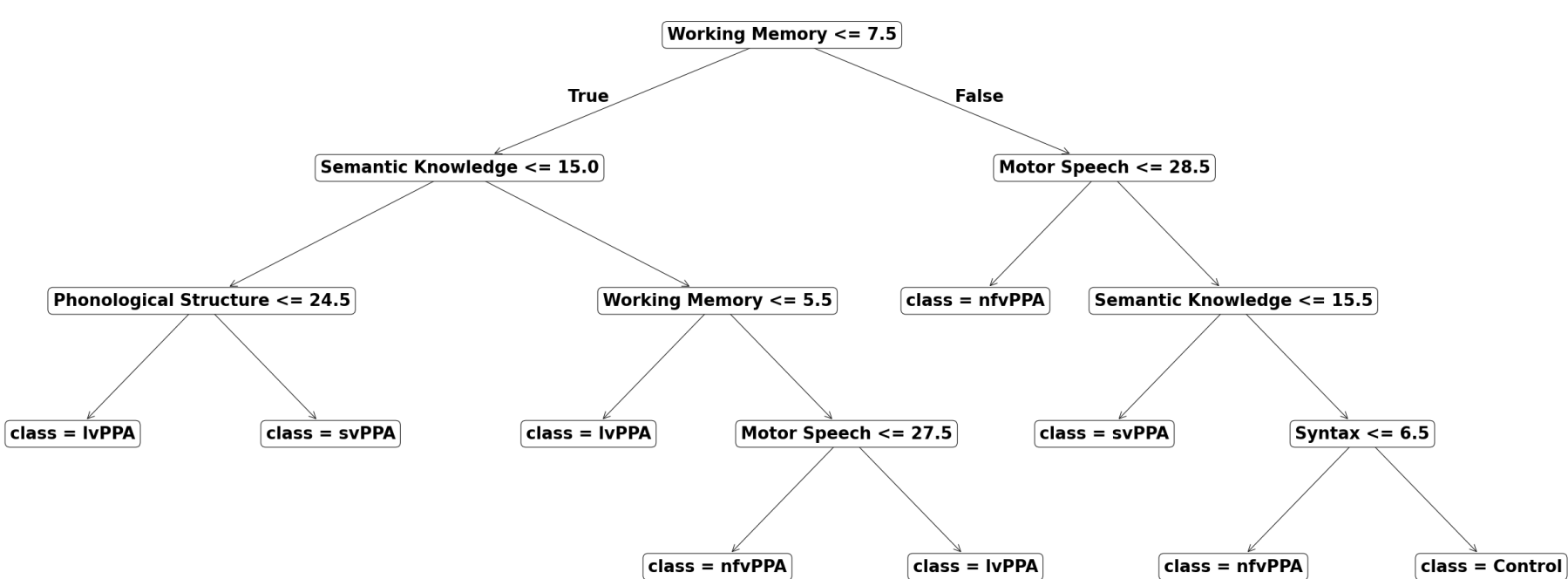


METHODS

We assessed the MLSE-NL in 90 Dutch-speaking patients with PPA and 276 healthy volunteers. The MLSE-NL includes sub-scores in motor speech, phonological structure, semantic knowledge, syntax, working memory. Group differences in MLSE-NL subscores and total score were assessed using Kruskal-Wallis tests, with covariate-adjusted linear models controlling for age, sex, and education as confirmatory analyses.

	Controls	nvPPA	lvPPA	svPPA	PPA NOS
n (% male)	276 (38.8%)	23 (21,7%)	24 (70,6%)	32 (53,1%)	11 (45,5%)
Age (mean ± SD)	56.3 ± 16.8	71 ± 8.2	69.7 ± 6.8	65.7 ± 6.9	69.8 ± 6.4
Education yrs (mean ± SD)	15.4 ± 2.7	14 ± 3	16.2 ± 2.9	15.7 ± 3.1	14.8 ± 3.2

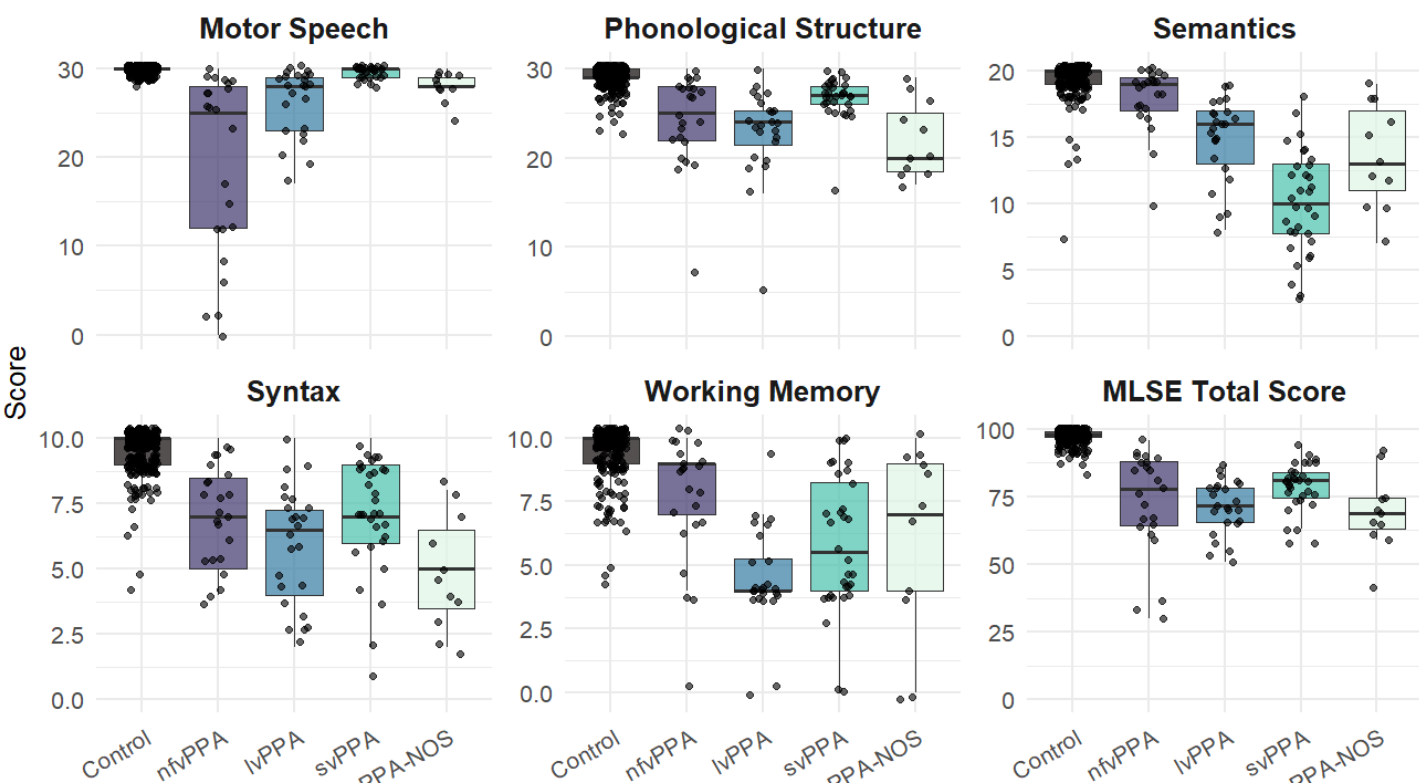
Data driven decision tree to differentiate controls and PPA variants
Balanced accuracy 0,83



RESULTS

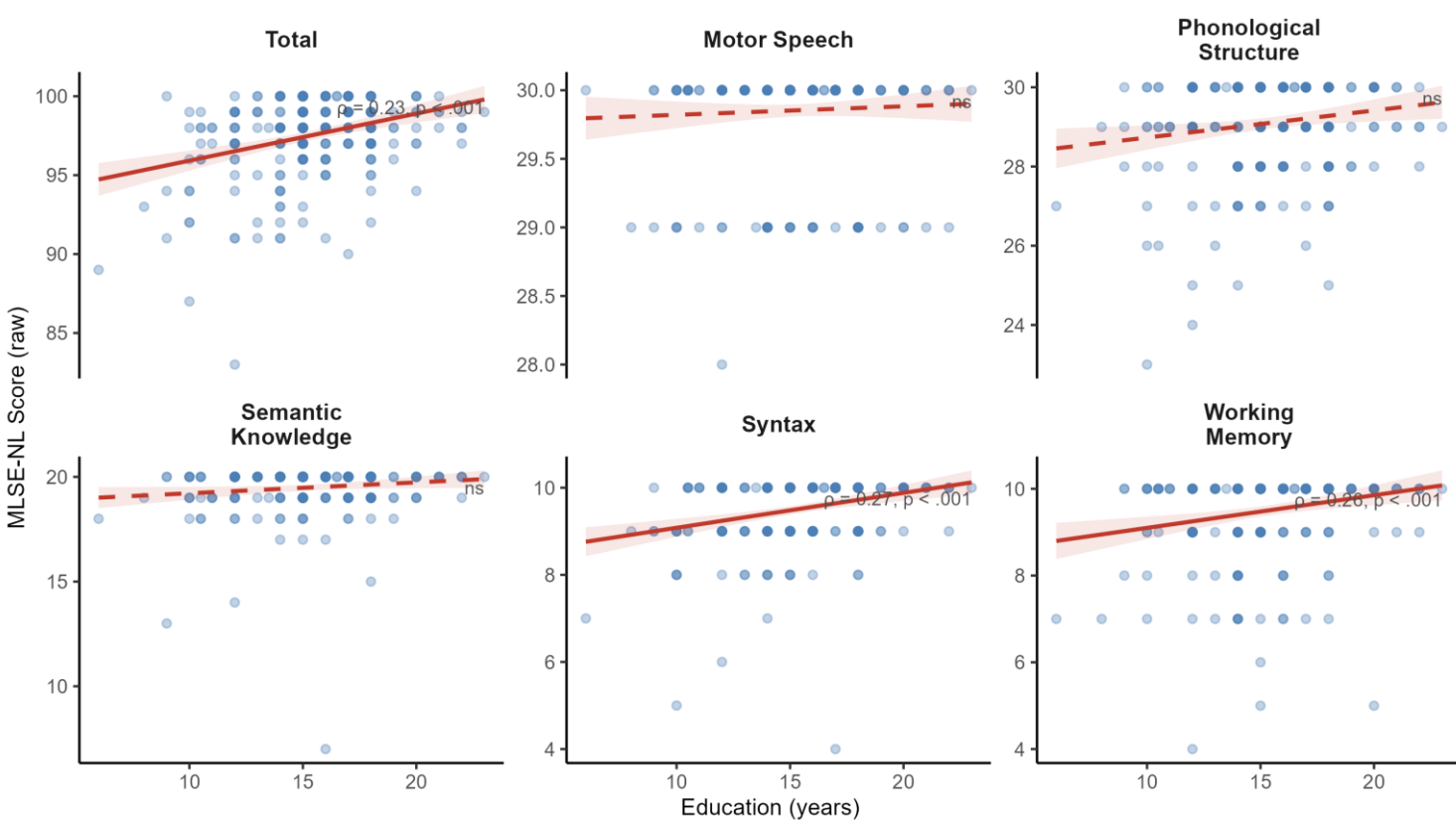
The MLSE-NL shows significantly lower scores for all PPA variants for total score, ranging from 30-96/100 in patients and 83-100/100 in controls. The AUC for total score was 0.99 (subdomain AUCs ranged from 0.80-0.92). nvPPA had more motor speech errors than controls, svPPA had more semantic errors, while lvPPA had the most working memory deficits. Syntax errors were frequent in all variants, while phonological deficits were greater in lvPPA and nvPPA. PPA-NOS had deficits in all domains aside from motor speech.

Scores of patients and controls in total and domain scores



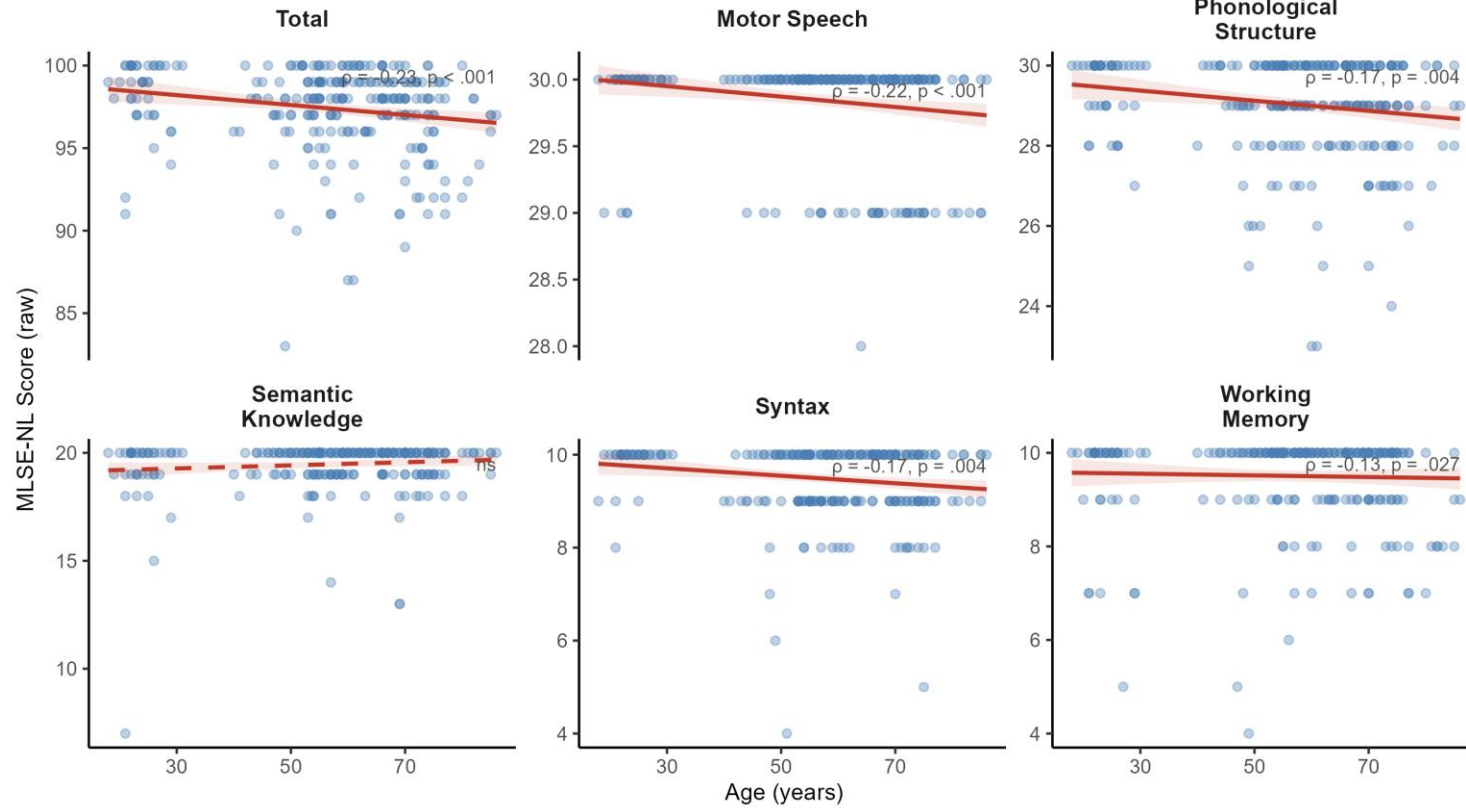
MLSE-NL domain scores x education (normative control data)

Solid regression line = significant (p < .05); dashed = ns



MLSE-NL domain scores x age (normative control data)

Solid regression line = significant (p < .05); dashed = ns



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