Supplementary:
Using the ATN system as a guide for the neuropsychological assessment of Alzheimer's disease

Irene Florean, Barbara Penolazzi, Alina Menichelli,
Massimiliano Pastore, Tatiana Cattaruzza, Giulia Mazzon and Paolo Manganotti
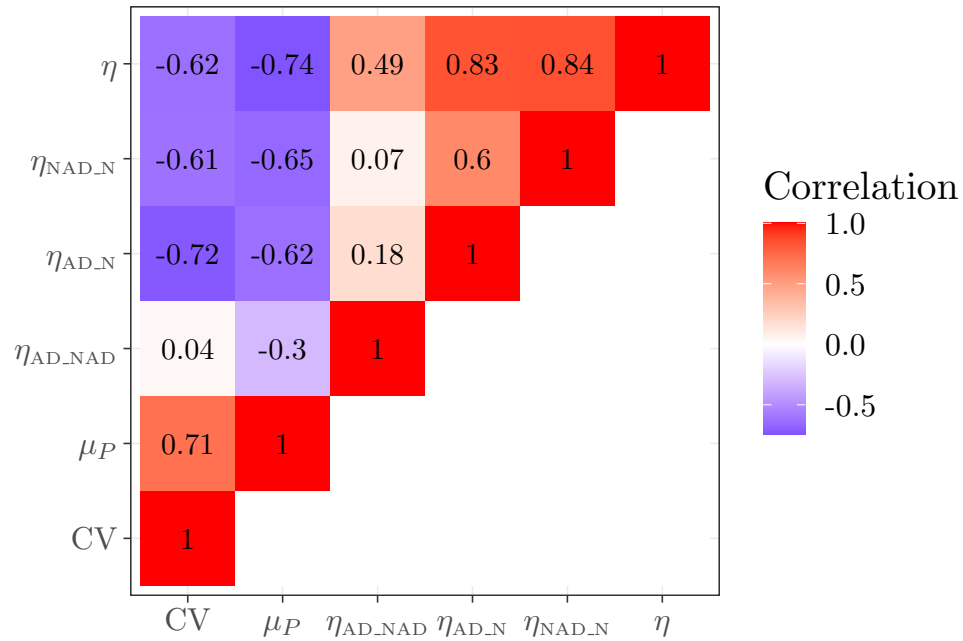
February 16, 2022

1 Correlations

Figure 1: Graphical representation of correlations among model fit indices: CV = Cramer's V; μ_P = mean expected probability of correct classification; η_{AD_NAD} = discriminative index between Alzheimer's continuum vs. non-Alzheimer's disease pathologic change; η_{AD_N} = discriminative index between Alzheimer's continuum vs. normal biomarkers; η_{NAD_N} = discriminative index between non-Alzheimer's disease pathologic change vs. normal biomarkers; η = global discriminative index.
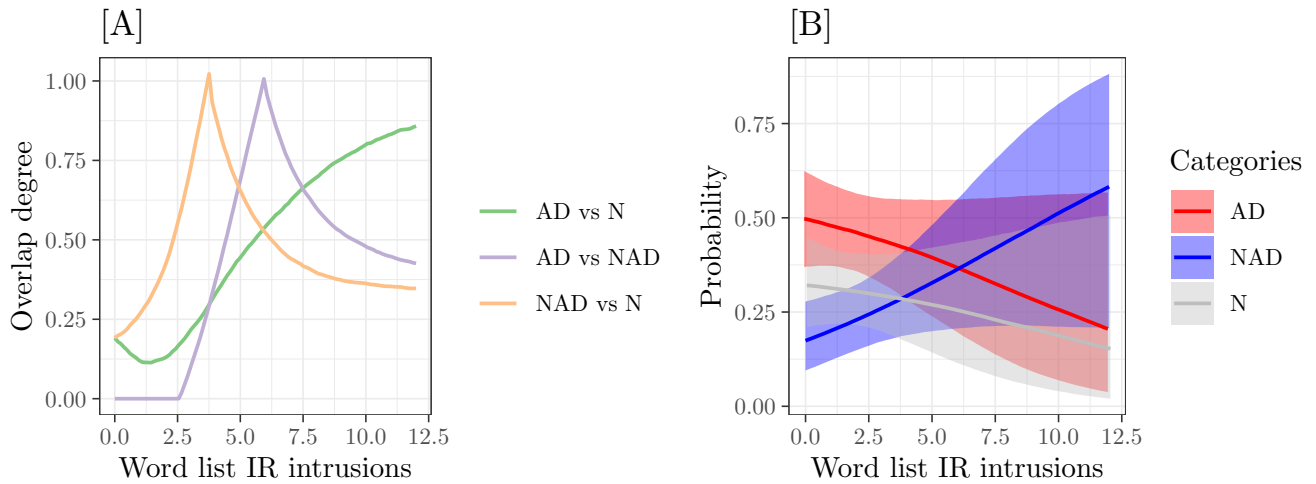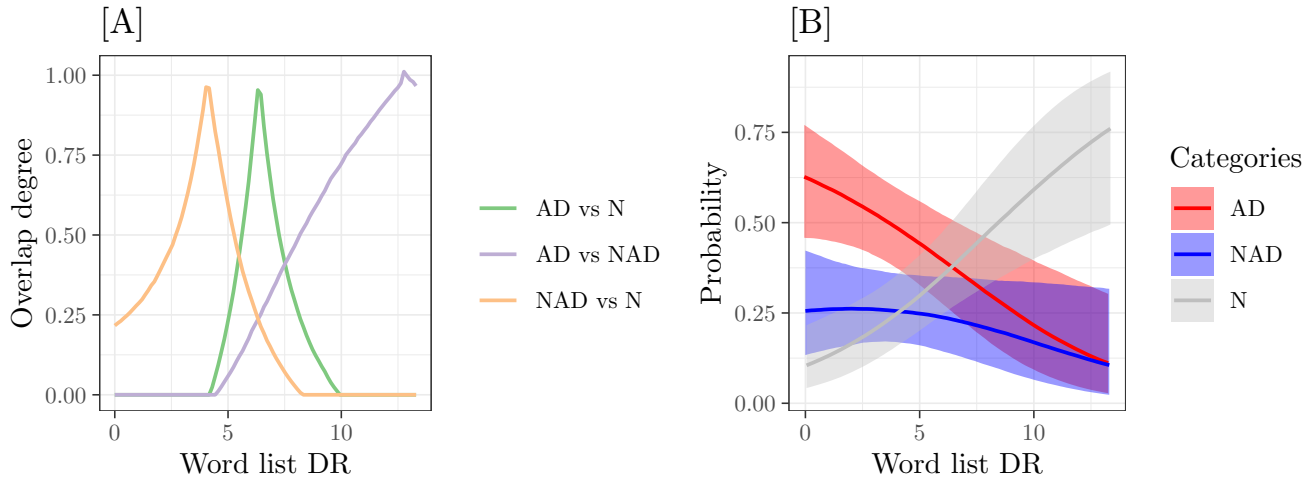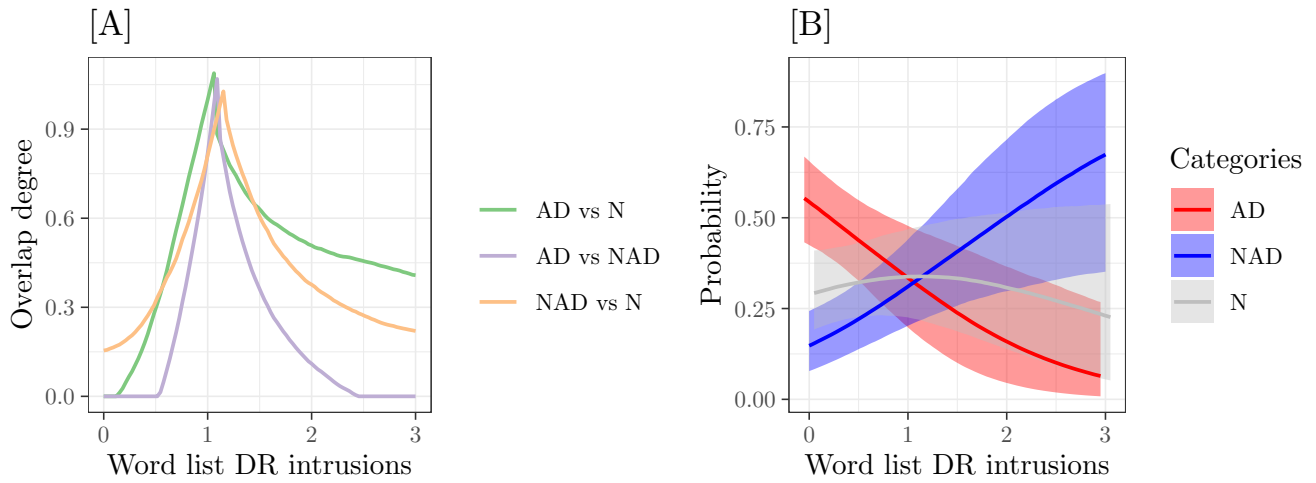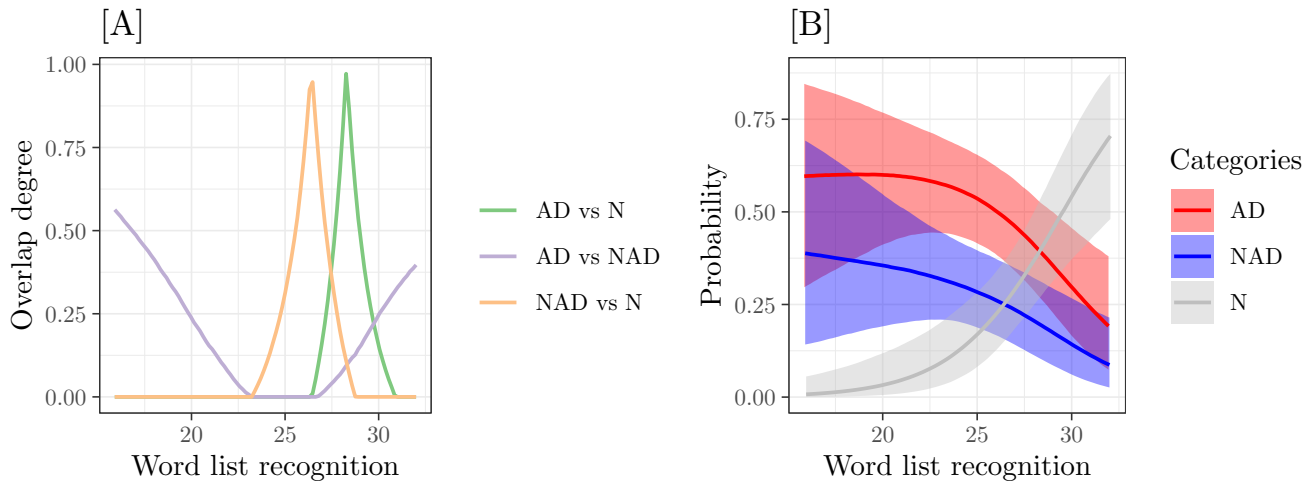
2 Figure 2

2.1
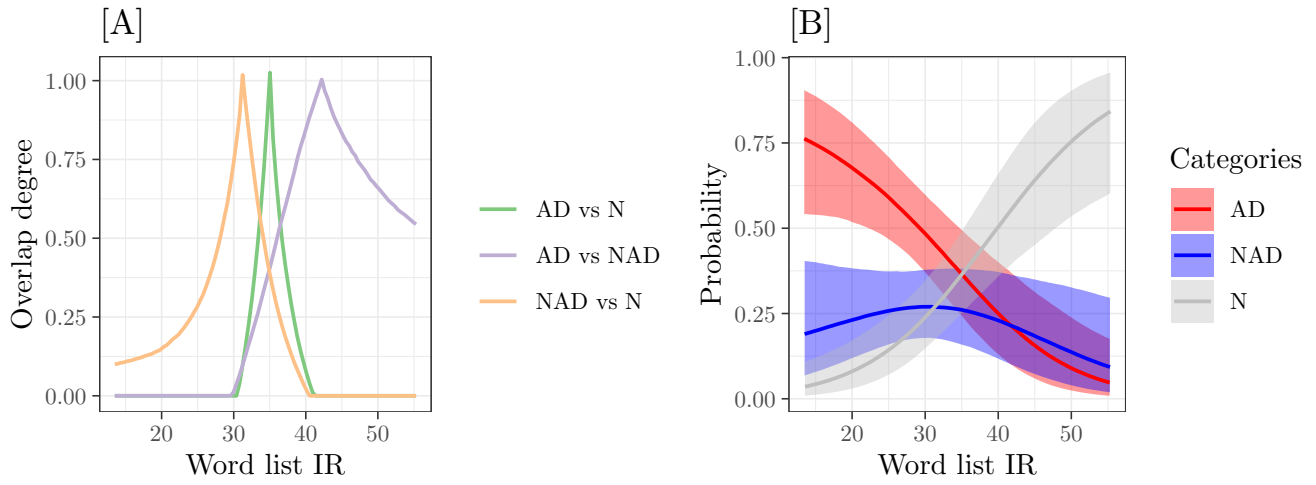
2.2
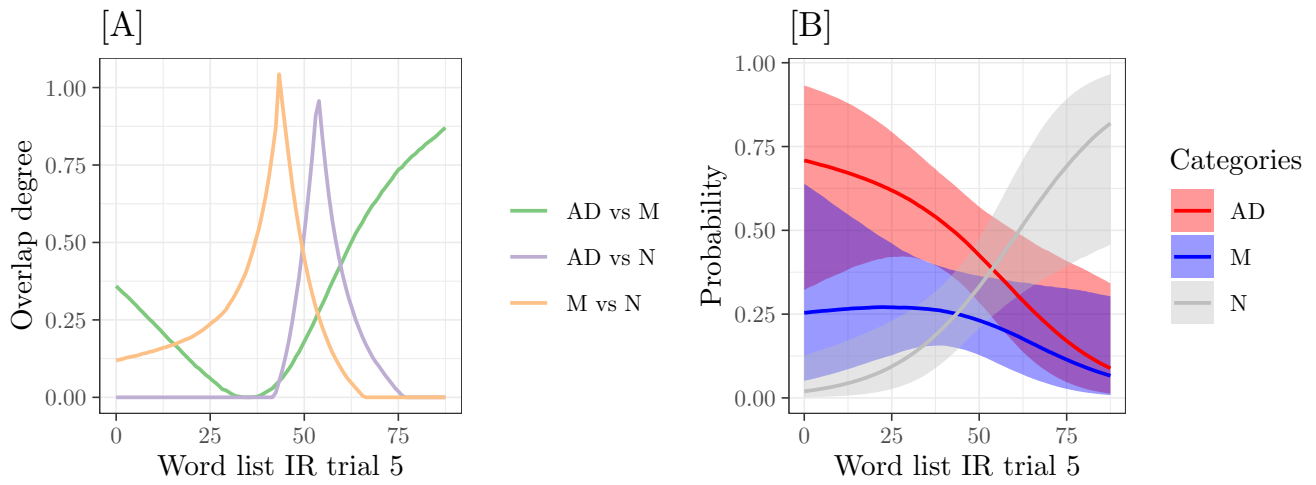
2.3

2.4

2.5

2.6

2.7
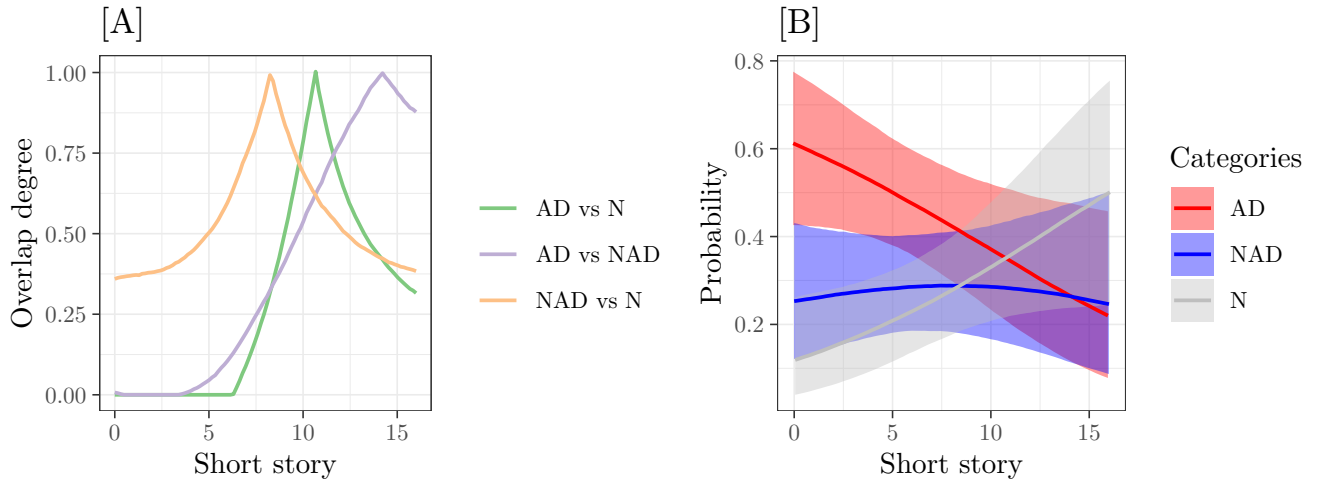
2.8
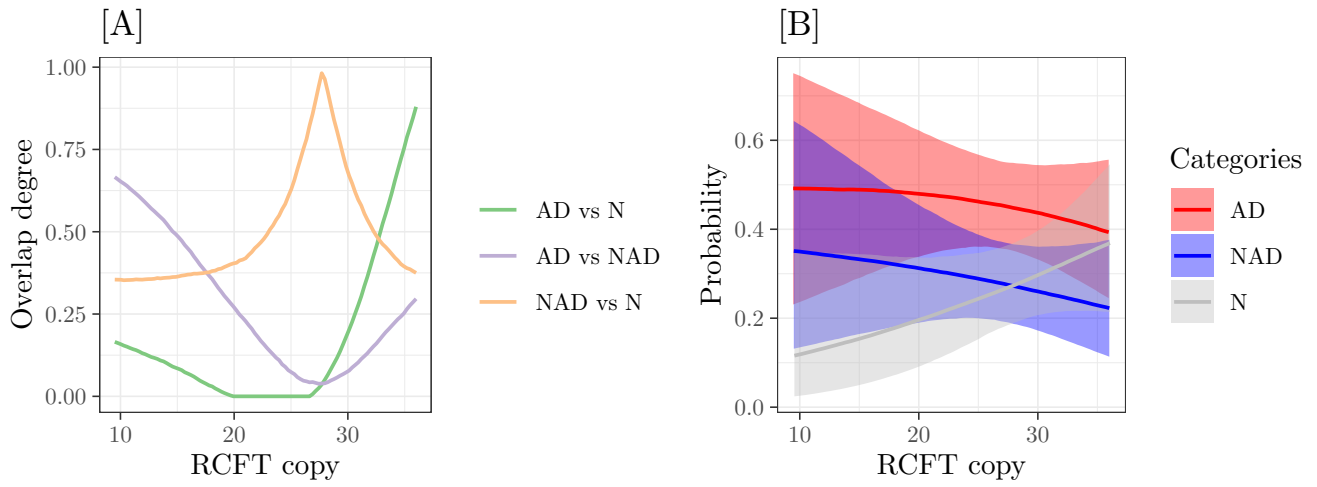
2.9
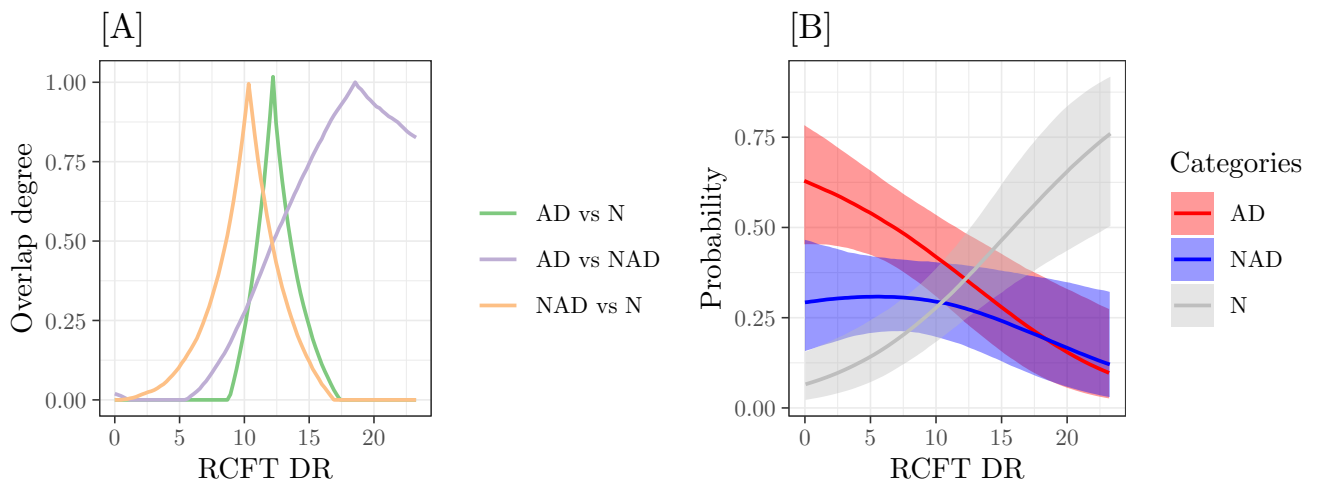
2.10
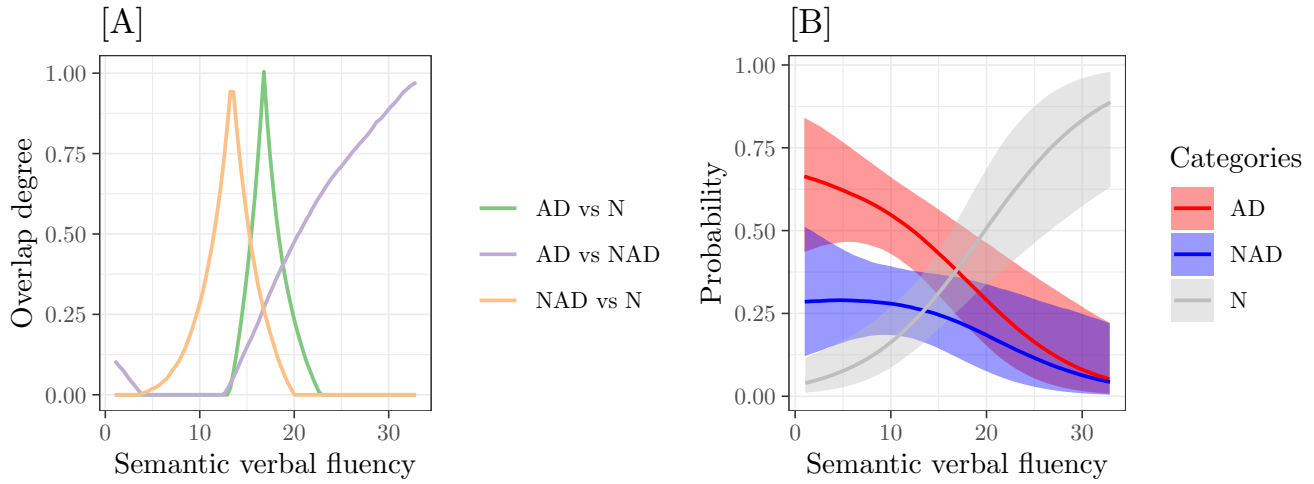
2.11

2.12

2.13

2.14

2.15

2.16

[A]

[B]

2.17

[A]

[B]

2.18

[A]

[B]
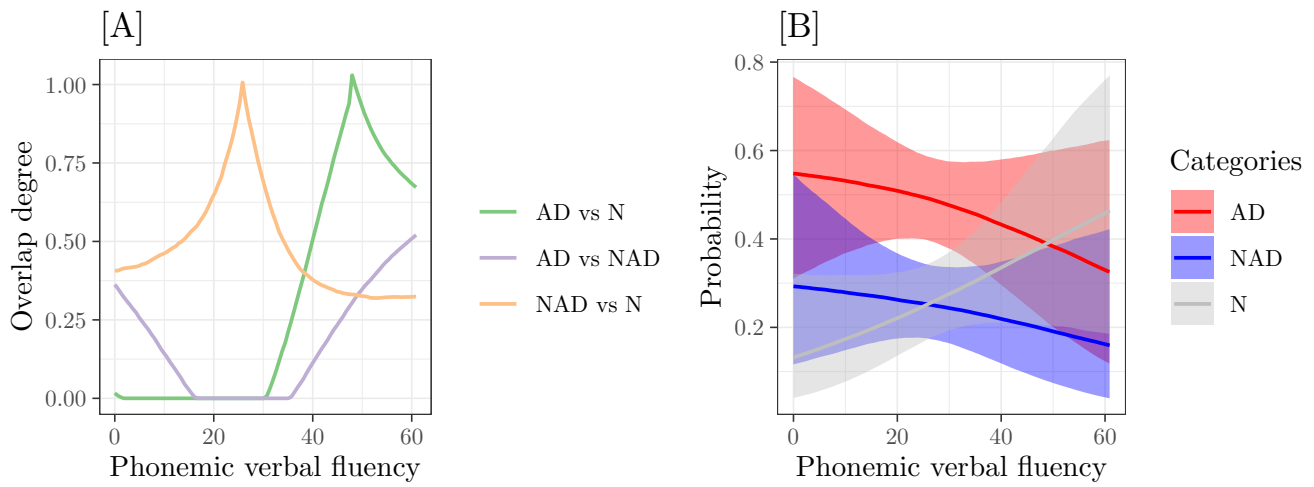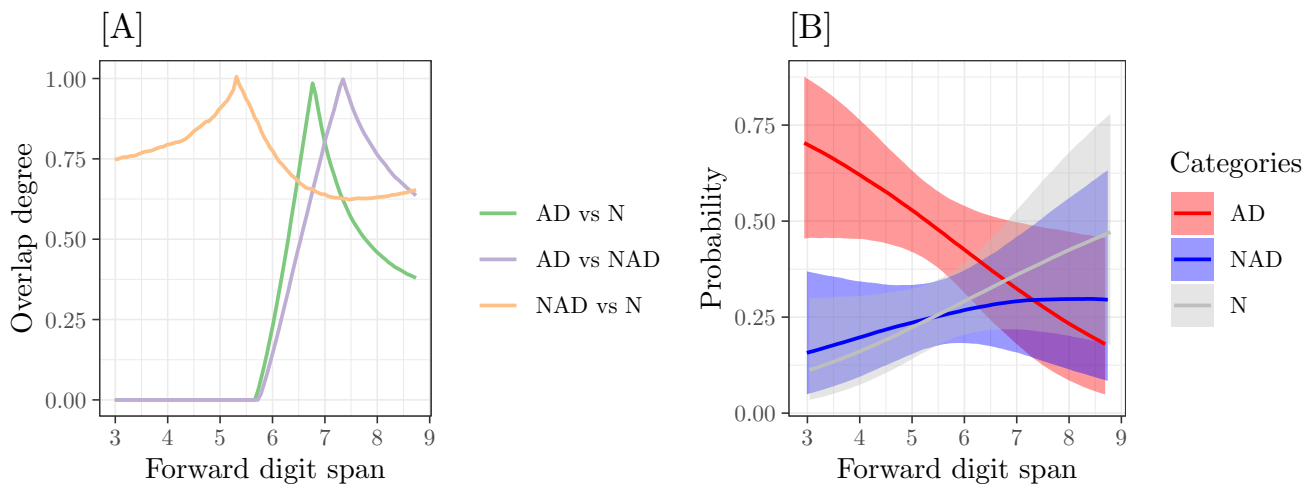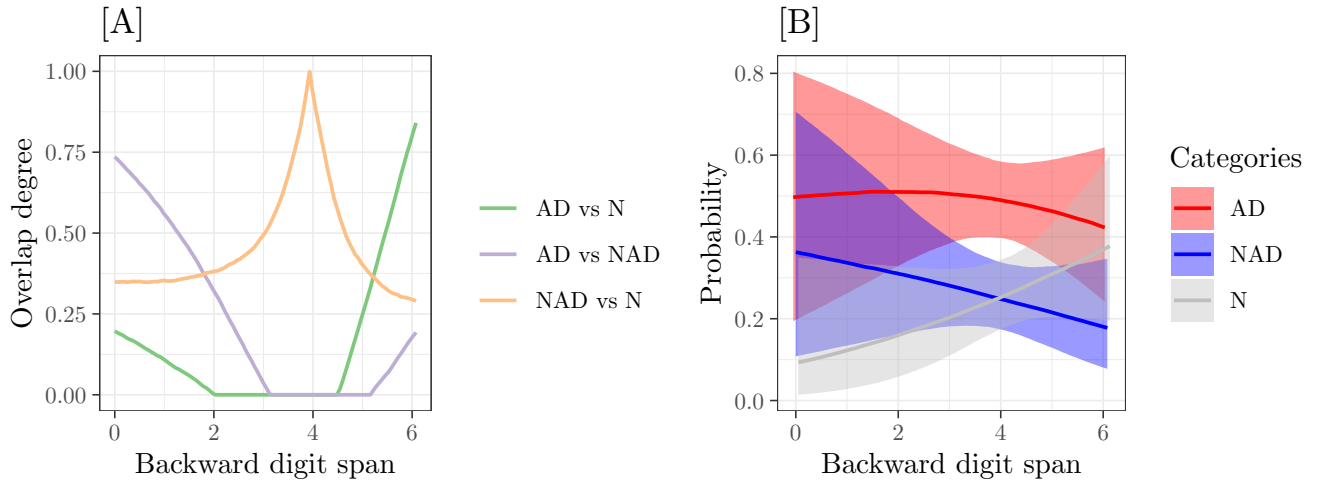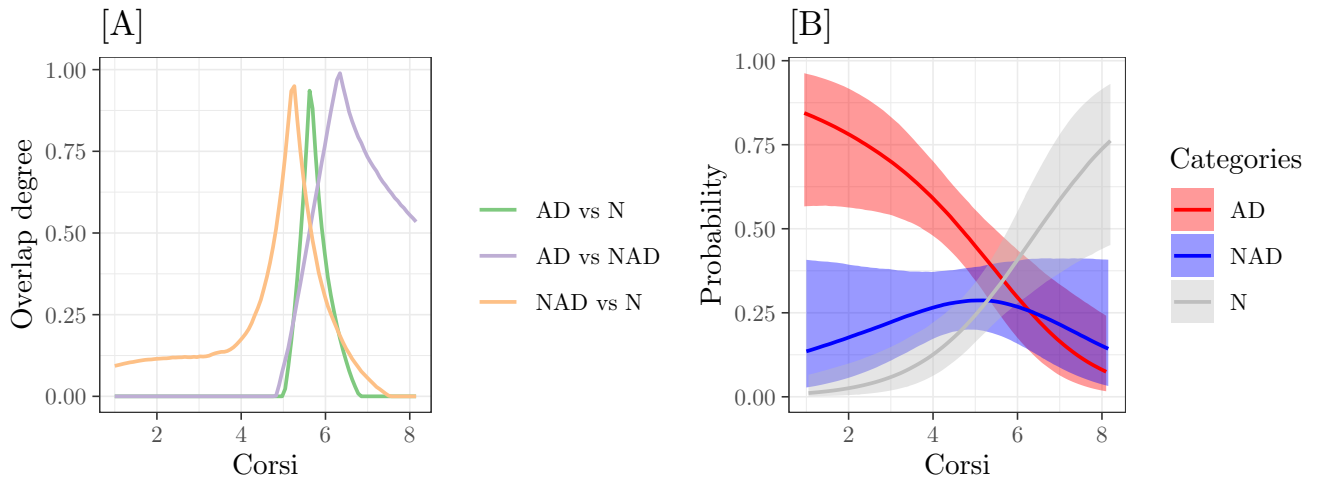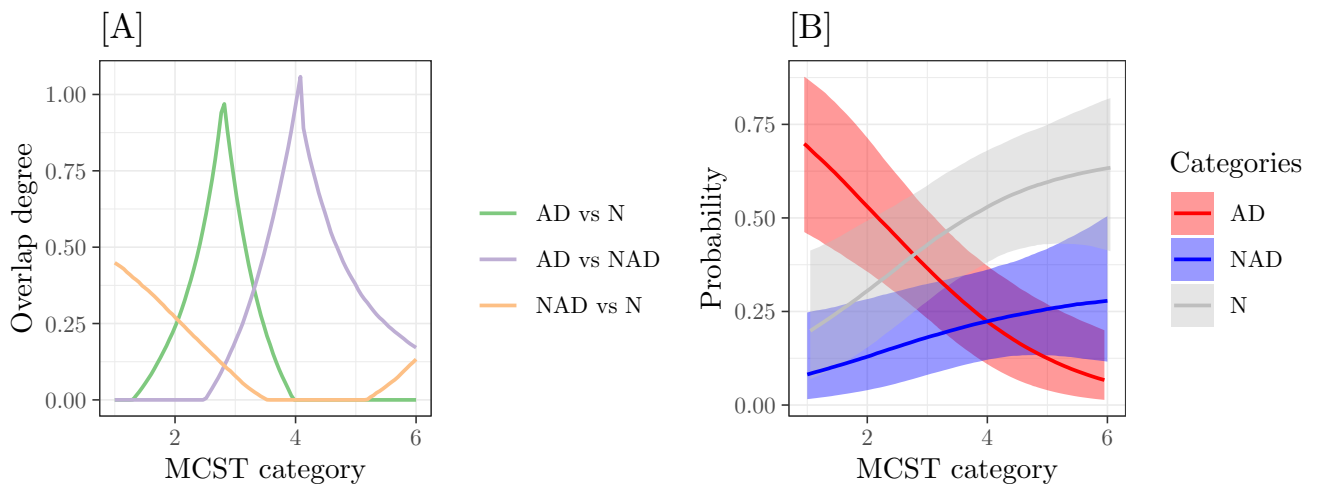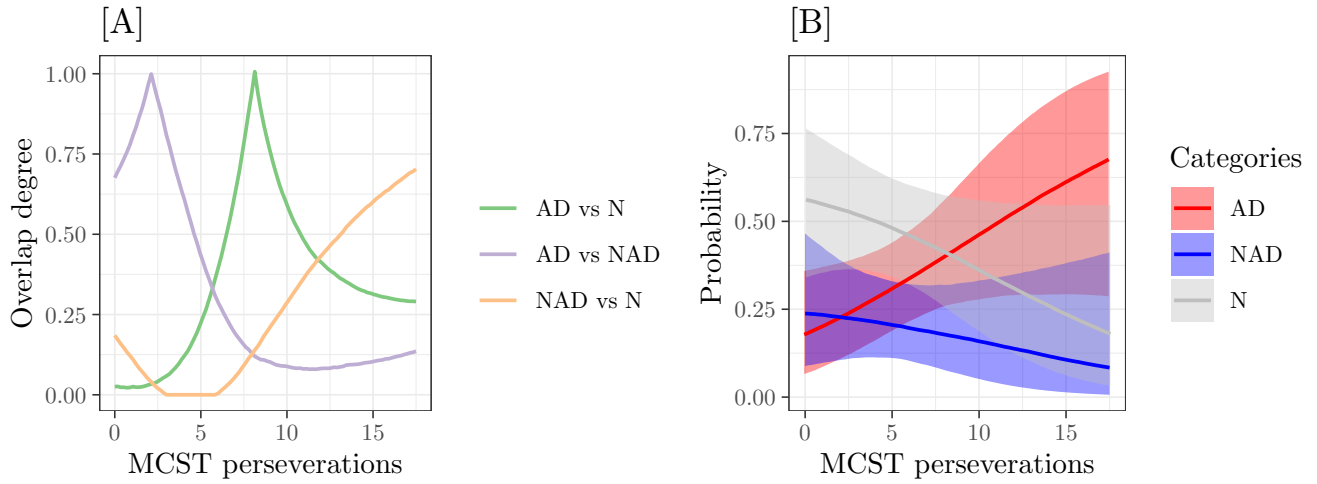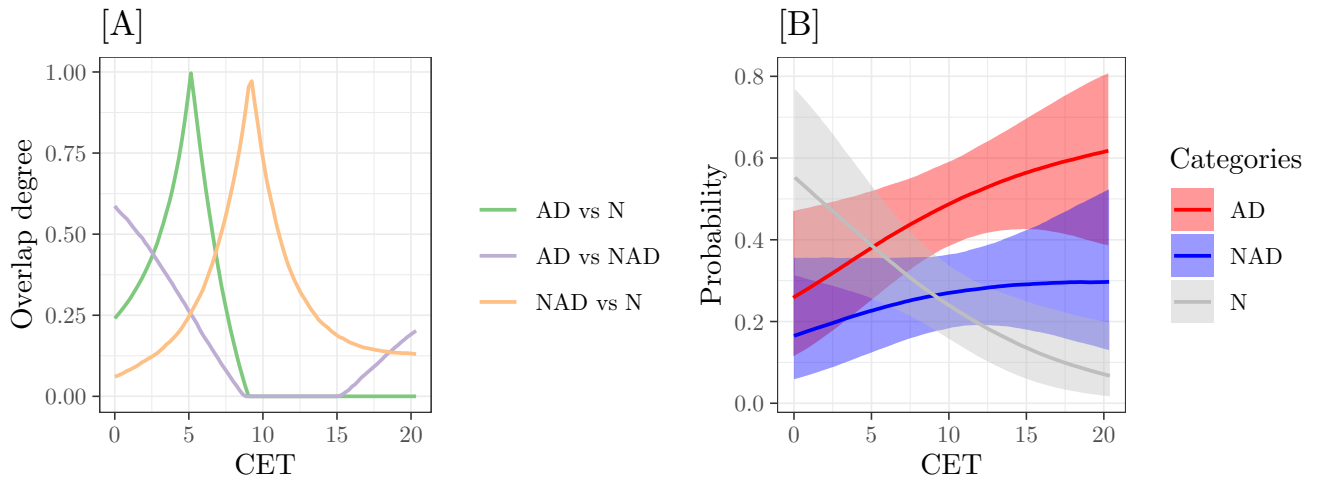
2.19

Figure 2. Ability to discriminate between biomarker groups shown by the neuropsychological measures used. Panels [A]: Graphical representations of overlap degrees between 90% credibility interval around estimated probability distributions on neuropsychological measures for groups by pairs: Alzheimer's continuum vs non-Alzheimer's disease pathologic change (green line); Alzheimer's continuum vs normal biomarker (purple line); non-Alzheimer's disease pathologic change vs normal biomarker (orange line). Scores on measures – adjusted for age, education and gender, according to Italian normative data – are shown on the X-axis, whereas the overlap degree – expressed as a proportion – between 90% credibility interval around estimated probability distributions for ATN groups by pairs is shown on the Y-axis. Panels [B]: graphical representation of 90% credibility interval around estimated probability distributions (coloured lines) on neuropsychological measures for Alzh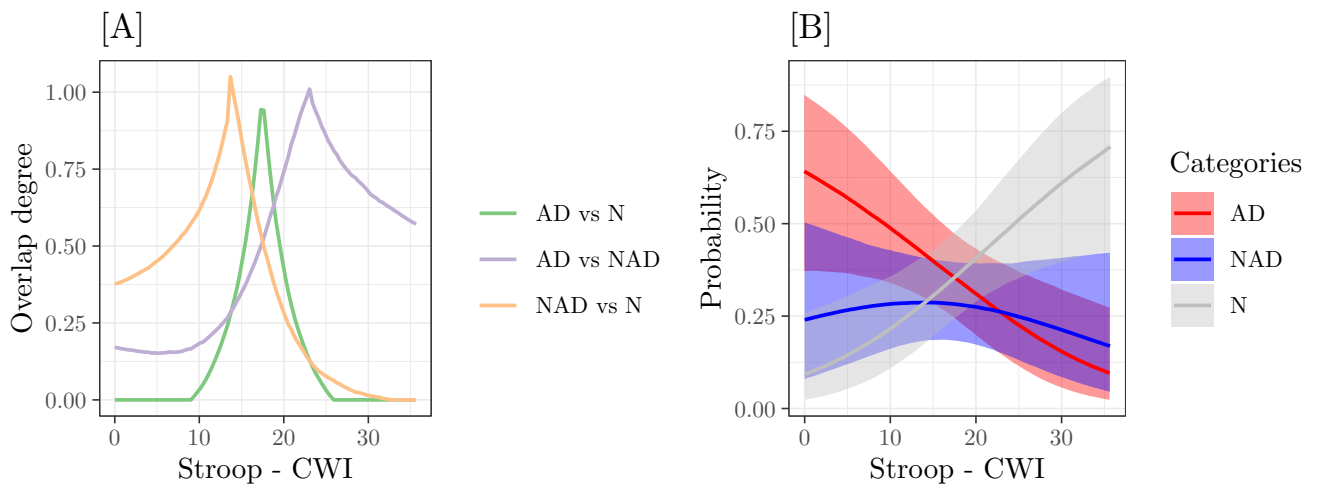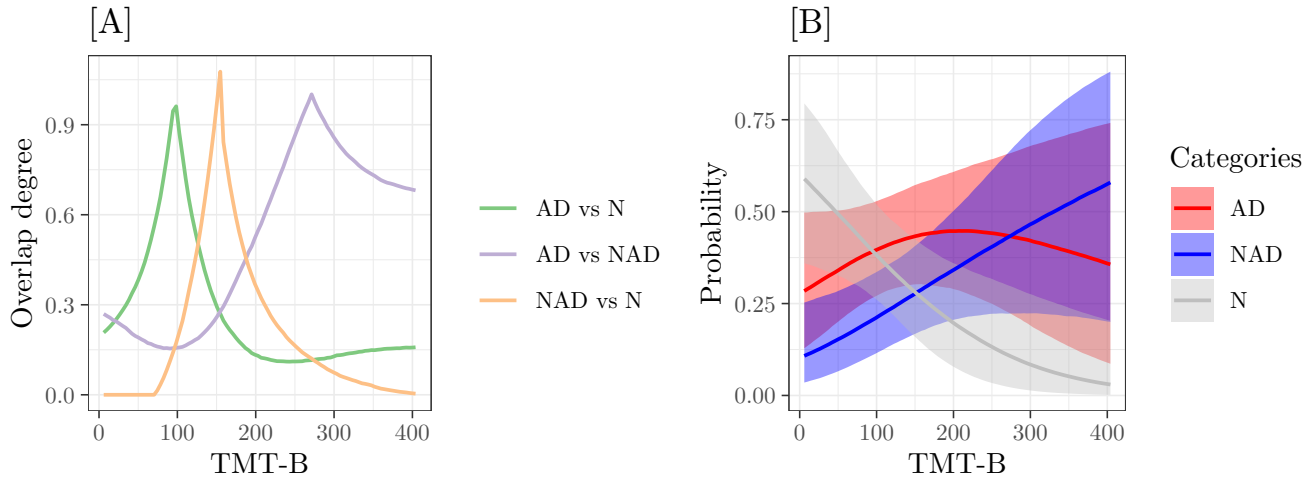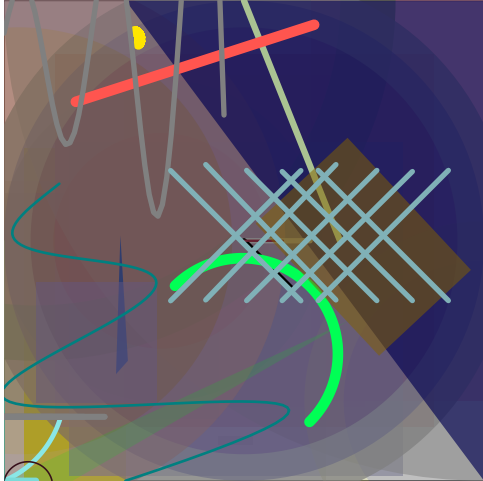eimer's continuum (red), non-Alzheimer's disease pathologic change (blue), and normal biomarker (grey) groups. Scores on measures – adjusted for age, education and gender, according to Italian normative data – are shown on the X-axis, whereas the probability of belonging to each of the three ATN groups is shown on the Y-axis.

AD = Alzheimer's continuum group; NAD = non-Alzheimer's disease pathologic change group; N = normal biomarker group; 2.1 Word list IR = number of words immediately retrieved across five word list learning trial; 2.2 Word list IR trial 5 = percentage of words retrieved in the fifth word list learning trial; 2.3 Word list IR intrusions = number of intrusions across word list learning trials; 2.4 Word list DR = numbers of words retrieved in word list delayed trial; 2.5 Word list DR intrusions = number of intrusions in word list delayed trial; 2.6 Word list recognition = number of correct identifications in word list recognition trial; 2.7 Short story = sum of hierarchical scores on immediate and delayed recall of the short story; 2.8 RCFT copy = number of Rey complex figure elements correctly copied; 2.9 RCFT DR = number of Rey complex figure elements correctly reproduced after a delay; 2.10 Semantic verbal fluency = number of words produced for the given category in 60s; 2.11 Phonemic verbal fluency = number of words produced for the given letters in three 60s trials; 2.12 Forward digit span = length of longest list recalled in the order presented; 2.13 Backward digit span = length of longest list recalled in reverse order; 2.14 Corsi = length of longest block-tapping sequence reproduced; 2.15 MCST-category = number of categories achieved on Modified Card Sorting Test; 2.16 MCST-perseverations = number of perseverations on Modified Card Sorting Test; 2.17 CET = distance between subject's estimations and normative estimations on Cognitive Estimation Task; 2.18 Stroop-CWI = number of items named on Colour Word Items trial of Stroop Test in 30s; 2.19 TMT-B = Trail Making Test-part B, time(s) to complete the task.

Elapsed time: 1.92 mins