Corrigendum

Memory Binding Test Distinguishes Amnestic Mild Cognitive Impairment and Dementia from Cognitively Normal Elderly

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In this report, which assessed reliability and cross-sectional discriminative validity of the Memory Binding Test (MBT) to distinguish individuals with amnestic Mild Cognitive Impairment (MCI) and dementia from cognitive normal elderly, an error was made in the characterization of the number of Pairs-In-the-Paired (PIP) condition. The incorrect PIP measure included in the publication was the number of pairs scored based on single items cued recalled from List 1 and List 2 under the single list recall condition, not the number of pairs recalled under the paired condition. Reanalysis was performed and main results are summarized here and in the tables below.

In the publication, it was recommended that the Total number of Items under the Paired condition (TIP) of the MBT be used as the optimal index. Data on the TIP reported in the publication are correct. Reanalysis of the data using the correct values for PIP shows that PIP and TIP were highly correlated (Pearson's correlation: 0.96). PIP has very good reliability (see revised Table 2 below) and cross-sectional discriminative validity (see revised Fig. 1 and revised Table 4 below) (corrections are noted in red font in the tables). PIP performed almost the same as TIP, but TIP is slightly more reliable. Partial AUC comparisons also showed that TIP had slightly better discriminative validity than PIP in distinguishing dementia from controls and aMCI, compared to single list recall measures, Cued Recall from list 1 (CR-L1) and Cued Recall from list 2 (CR-L2).

TIP remains a better measure than PIP probably because that PIP counts only pairs but discards single items correctly recalled under the paired condition and that TIP also has a wider and finer range (0−32) compared to PIP (0−16). The good

Revised Table 2. Memory Binding Test (MBT) test–retest reliability over 1 year for all participants, stable controls and persons with minimal BIMC change.[a]

| Cognitive measure	Entire reliability sample[b] (n = 200)	Stable controls[c] (n = 156)	BIMC absolute change ≤1[d] (n = 137)
MBT CR-L1	0.58	0.44	0.52
MBT CR-L2	0.68	0.62	0.67
MBT PIP	0.83	0.74	0.80
MBT TIP	0.85	0.77	0.83
FCSRT-FR	0.76	0.59	0.73
LM-I	0.77	0.73	0.78

Notes: MBT, Memory Binding Test; CR-L1, Number of items cued recalled from List 1 on the MBT; CR-L2, Number of items cued recalled from List 2 on the MBT; PIP, Number of Pairs cued recalled In the Paired condition on the MBT; TIP, Total number of Items cued recalled in the Paired condition on the MBT; BIMC, Blessed Information-Memory-Concentration test; FCSRT-FR, Free and Cued Selective Reminding Test free recall score; LM-I, Logical Memory I.
[a]Results excluded persons with naMCI at baseline. Supplementary Table S4 shows the corresponding reliability results that included persons with naMCI at baseline.
[b]There were 200 participants with data at both baseline and 1-year follow-up.
[c]Stable controls: Participants who were cognitively normal at both baseline and 1-year follow-up.
[d]Participants whose global cognitive function remained stable over 1 year. Global function was measured by the BIMC.
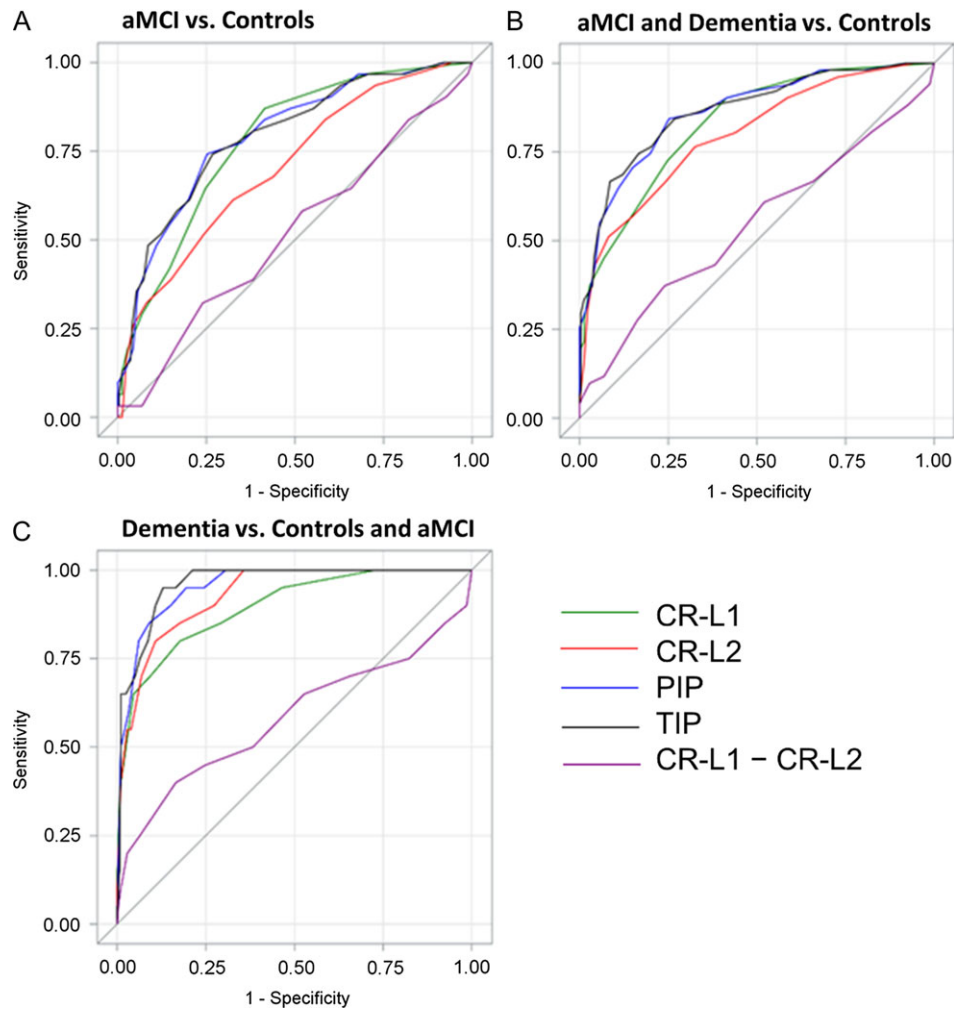
Revised Figure 1. Receiver operating characteristic curves for MBT indices CR-L1, CR-L2, PIP, TIP and the semantic interference measure "CR-L1–CR-L2" (results excluded persons with naMCI; Supplementary Fig. S1 shows the corresponding results that included persons with naMCI). MBT, Memory Binding Test; CR-L1, Number of items cued recalled om List 1 on the MBT; CR-L2, Number of items cued recalled from List 2 on the MBT; PIP, Number of Pairs cued recalled In the Paired condition on the MBT; TIP, Total number of Items cued recalled in the Paired condition on the MBT; aMCI, amnestic mild cognitive impairment.

Revised Table 4. Comparisons of four MBT indices using the partial area under the receiver operating characteristic curve for specificities ≥0.70.[a]

Partial AUC pairwise comparison	aMCI versus controls	aMCI and Dementia versus Controls	Dementia versus Controls and aMCI
TIP vs. CR-L1	0.15 vs. 0.13 ($p = .09$)	**0.20 vs. 0.17 ($p = .01$)**	**0.26 vs. 0.22 ($p = .02$)**
TIP vs. CR-L2	**0.15 vs. 0.11 ($p = .01$)**	**0.20 vs. 0.16 ($p = .003$)**	**0.26 vs. 0.23 ($p = .04$)**
TIP vs. PIP	0.15 vs. 0.15 ($p = .39$)	0.20 vs. 0.20 ($p = .23$)	0.26 vs. 0.25 ($p = .18$)
PIP vs. CR-L1	0.15 vs. 0.13 ($p = .12$)	**0.20 vs. 0.17 ($p = .03$)**	0.25 vs. 0.22 ($p = .07$)
PIP vs. CR-L2	**0.15 vs. 0.11 ($p = .03$)**	**0.20 vs. 0.16 ($p = .007$)**	0.25 vs. 0.23 ($p = .07$)
CR-L2 vs. CR-L1	0.11 vs. 0.13 ($p = .46$)	0.16 vs. 0.17 ($p = .77$)	0.23 vs. 0.22 ($p = .69$)

Notes: MBT, Memory Binding Test; aMCI, amnestic mild cognitive impairment; CR-L1, Number of items cued recalled from List 1 on the MBT; CR-L2, Number of items cued recalled from List 2 on the MBT; PIP, Number of Pairs cued recalled In the Paired condition on the MBT; TIP, Total number of Items cued recalled in the Paired condition on the MBT; aMCI = amnestic Mild Cognitive Impairment.
[a]Results excluded persons with naMCI. Supplementary Table S5 shows the corresponding results that included persons with naMCI.

performance of PIP supports the binding hypothesis. The fact that TIP and PIP had such similar performances supports that TIP was indeed a binding measure. Thus, the original recommendation, that TIP is the optimal index, stands.