

## Supplementary Material

Table S1: Proportion of correctly and fluently named items in ON and AN across testing points, as reported in Table 2 of the main document with more information for between test comparison: Scores are reported in proportions of correctly named items during ON and AN. Scores that indicate a clinical impairment compared to healthy normative data (Singlims, Crawford et al., 2010) are marked by a hashtag (#). Healthy controls performed at  $0.884 \pm 0.046$  (range 0.8-0.933) for ON (Sollmann, Fuss-Ruppenthal, et al., 2018) and at  $0.852 \pm 0.059$  (range 0.667-0.933) for AN (Ohlerth et al., 2021). Significant difference between tasks (Revised Standardized Difference Test (RSDT), Crawford et al., 2010) is marked by an asterisk (\*). Case 1-3 were not operated awake and, hence, the tests were not administered (N/A) 1 Day preoperatively.

Case	Test	Baseline	Impairment compared to healthy controls at baseline	Difference between ON and AN at baseline	1 Day Pre-operative	Impairment compared to healthy controls pre-operative	Difference between ON and AN preop	3 Days Post-operative	Impairment compared to healthy controls postop	Difference between ON and AN post-operative	Sig. Difference between Baseline and Preoperative	Sig. Difference between Baseline and Postoperative	Difference in Decline between ON and AN (Unpaired MWU)
1	ON	<b>0.813*</b>	0.149	<b>0.018*</b>	N/A	N/A	N/A	<b>0.838*</b>	0.341	<b>0.016*</b>	N/A	0.790	0.967
	AN	<b>0.573*#</b>	<b>&lt;0.001*</b>		N/A	N/A		<b>0.600*#</b>	<b>0.001*</b>		N/A	0.831	
2	ON	0.850	0.485	0.401	N/A	N/A	N/A	0.825	0.230	0.262	N/A	0.803	0.702
	AN	0.747	0.097		N/A	N/A		0.693#	<b>0.017</b>		N/A	0.522	
3	ON	0.975	0.069	0.243	N/A	N/A	N/A	0.988	0.041	0.125	N/A	0.999	0.567
	AN	0.880	0.648		N/A	N/A		0.867	0.811		N/A	0.999	
4	ON	0.925	0.395	0.088	<b>0.868*</b>	0.999	<b>&lt;0.001</b>	<b>0.747*</b>	0.056	<b>0.001</b>	0.147*	<b>0.037</b>	<b>0.005*</b>
	AN	0.773	0.208		<b>0.653*#</b>	<b>0.004</b>		<b>0.427*#</b>	<b>&lt;0.001</b>		<b>0.039*</b>	<b>&lt;0.001</b>	
5	ON	<b>0.963*</b>	0.113	<b>0.008*</b>	<b>0.934*</b>	0.999	<b>&lt;0.001</b>	0.888	0.938	0.053	0.505	0.114	0.555
	AN	<b>0.733*</b>	0.064		<b>0.680*#</b>	<b>0.010</b>		0.707#	<b>0.026</b>		0.480	0.831	
6	ON	0.888	0.938	0.558	<b>0.945*</b>	0.999	<b>&lt;0.001</b>	<b>0.350*#</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	0.263	<b>&lt;0.001</b>	<b>0.004*</b>
	AN	0.813	0.530		<b>0.733*</b>	0.064		<b>0.533*#</b>	<b>&lt;0.001</b>		0.286	<b>&lt;0.001</b>	
7	ON	0.913	0.551	0.178	<b>0.967*</b>	0.999	<b>&lt;0.001</b>	<b>0.875*</b>	0.886	<b>0.003</b>	0.192	0.606	<b>0.040*</b>
	AN	0.787	0.293		<b>0.827*</b>	0.680		<b>0.587*#</b>	<b>0.0001</b>		0.580	<b>0.009</b>	

Table S2: Bonferroni corrections of correlations between test scores and linguistic values of items.

<b>Case</b>	<b>Test</b>	<b>Linguistic value</b>	<b>Spearman correlation coefficient</b>	<b>p-value after Bonferroni correction</b>
4	Postop AN	Transitivity	-0.3915824	0.004
6	Postop ON	Frequency	0.4142422	0.001
	Postop AN	Age of Acquisition	-0.3101887	0.047
	Postop AN	Instrumentality	-0.3392857	0.020