

eAppendix 3. Robust Regression Algorithm Comparison

eMethod

To assess the reliability of MM-estimator robust regression, we performed a talwar robust regression^{e1} to see if our results held.

eResults

Picture Naming – Language Dominant Hemisphere

Results were the same as the main paper. The inferior frontal sub-fasciculus of the IFOF ($\beta = -1.257$, $p = 0.040$, 95% CI: -2.452 to -0.062) was a significant predictor of picture naming outcome at 3 months: $\chi^2(1,41) = 57.676$, $p < 0.001$, adjusted $R^2 = 0.186$, even when accounting for resection volume ($p = 0.555$), fMRI ($p = 0.489$), and preoperative picture naming scores ($p = 0.162$).

Picture Naming – Language Non-dominant Hemisphere

Results were the same as the main paper. The anterior sub-fasciculus of the MLF ($\beta = -0.343$, $p = 0.023$, 95% CI -0.636 to -0.050) was a significant coefficient of picture naming outcome at 3 months: $\chi^2(1,51) = 8.197$, $p = 0.004$ adjusted $R^2 = 0.186$, even when accounting for resection volume ($p = 0.555$), fMRI ($p = 0.489$), and preoperative picture naming scores ($p = 0.162$).

eAppendix 3 – References

- e1. Hinich MJ, Talwar PP. A simple method for robust regression. *Journal of the American Statistical Association*. Taylor & Francis; 1975;70:113–119.