5. Kristinsson, S., Basilakos, A., Elm, J., Spell, L.A., Bonilha, L., Rorden, C., den Ouden, D., Cassarly, C., Sen, S., Hillis, A., Hickok, G., Fridriksson, J. (2021) Individualized response to semantic versus phonological aphasia therapies in stroke, *Brain Communications*, Volume 3, Issue 3 https://doi.org/10.1093/braincomms/fcab174

Attempts to personalize aphasia treatment to the extent where it is possible to reliably predict individual response to a particular treatment have yielded inconclusive results. The current study aimed to (i) compare the effects of phonologically versus semantically focussed naming treatment and (ii) examine biographical and neuropsychological baseline factors predictive of response to each treatment. One hundred and four individuals with chronic post-stroke aphasia underwent 3 weeks of phonologically focussed treatment and 3 weeks of semantically focussed treatment in an unblinded cross-over design. A linear mixed-effects model was used to compare the effects of treatment type on proportional change in correct naming across groups. Correlational analysis and stepwise regression models were used to examine biographical and neuropsychological predictors of response to phonological and semantic treatment across all participants. Last, chi-square tests were used to explore the association between treatment response and phonological and semantic deficit profiles. Semantically focussed treatment was found to be more effective at the group-level, independently of treatment order (P = 0.041). Overall, milder speech and language impairment predicted good response to semantic treatment (r range: 0.256–0.373) across neuropsychological tasks. The Western Aphasia Battery-Revised Spontaneous Speech score emerged as the strongest predictor of semantic treatment response (R^2 = 0.188). Severity of stroke symptoms emerged as the strongest predictor of phonological treatment response (R^2 = 0.103). Participants who showed a good response to semantic treatment were more likely to present with fluent speech compared to poor responders (P = 0.005), whereas participants who showed a good response to phonological treatment were more likely to present with apraxia of speech (P = 0.020). These results suggest that semantic treatment may be more beneficial to the improvement of naming performance in aphasia than phonological treatment, at the group-level. In terms of personalized predictors, participants with relatively mild impairments and fluent speech responded better to semantic treatment, while phonological treatment benefitted participants with more severe impairments and apraxia of speech.