Model selection for RT data analysis (trial by trial data)

Number of subject: 65

Number of trials: 512

**1. Intercept only model**

“1.1 Behavioral\_Eval\_VaryingInterceptModel.txt”

ICC for subject: .227

ICC for word stimulus: .023

ICC for face stimulus: 0

Log likelihood comparisons testing the contribution of both subject and word stimulus were significant. Subject and word stimulus were kept as grouping variables for subsequent analyses.

**2. Maximal model**

“1.2 Behavioral\_Eval\_maximalModelwithoutInteractions.txt”

Doesn’t converge.

**3. Model where effects vary by subject but not electrode**

“1.3 Behavioral\_Eval\_allRandomSlopesForSubjectOnly.txt”

ICC for subject in intercept only model was largest, so let slopes vary by subject but not word stimulus. Correlation for random effect is high (>.95).

**4. Model where effect of word valence varies by subject and electrode but no other random effects**

“1.4 Behavioral\_Eval\_ValenceRandom.txt”

In model 3, largest variance was for word valence. So, let slope of word valence vary by both grouping variables. FIML model doesn’t converge so no AIC/BIC. Acceptable correlations between random effects. Therefore, use this model to look at fixed effects.

Fixed effects:

Estimate Std. Error df t value Pr(>|t|)

(Intercept) 516.333 6.050 74.000 85.340 < 2e-16 \*\*\*

faceRaceWhite -3.078 1.758 29970.000 -1.751 0.07988 .

wordValpositive -16.708 5.853 15.000 -2.855 0.01209 \*

FixAreaforehead -4.029 1.758 29968.000 -2.293 0.02187 \*

faceRaceWhite:wordValpositive 6.452 2.491 29968.000 2.590 0.00959 \*\*

faceRaceWhite:FixAreaforehead 3.664 2.488 29968.000 1.473 0.14088

wordValpositive:FixAreaforehead 5.175 2.488 29968.000 2.080 0.03751 \*

faceRaceWhite:wordValpositive:FixAreaforehead -6.586 3.524 29968.000 -1.869 0.06168 .