An Eye-tracking-with-EEG Coregistration Corpus of Narrative Sentences: Supplementary materials

Stefan L. Frank[1] and Anna Aumeistere[2]
[1]Centre for Language Studies, Radboud University
[2]Donders Centre for Cognitive Neuroimaging, Radboud University

Regression FRPs

Figures 1 to 4 show regression FRPs across all electrodes for the predictors log-frequency, length, position in the sentence, and surprisal, respectively. All and only words included in the analysis from the main text were included here, and the same regression model was fitted as before. In order to reduce computation time, we downsampled the EEG signal to 250 Hz.

Each figure shows the regression FRP of one predictor, both before and after ICA-based ocular artifact correction. Post-correction regression FRPs are plotted in blue on top of the pre-correction regression FRPs in red; when no red is visible, the correction did not substantially change the effect of the predictor on the FRP.

As can be seen from Figure 4, the correction procedure made very little difference to the effect of surprisal. However, it did substantially change the effect of word length (Figure 2) and in particular that of word position in the sentence (Figure 3)

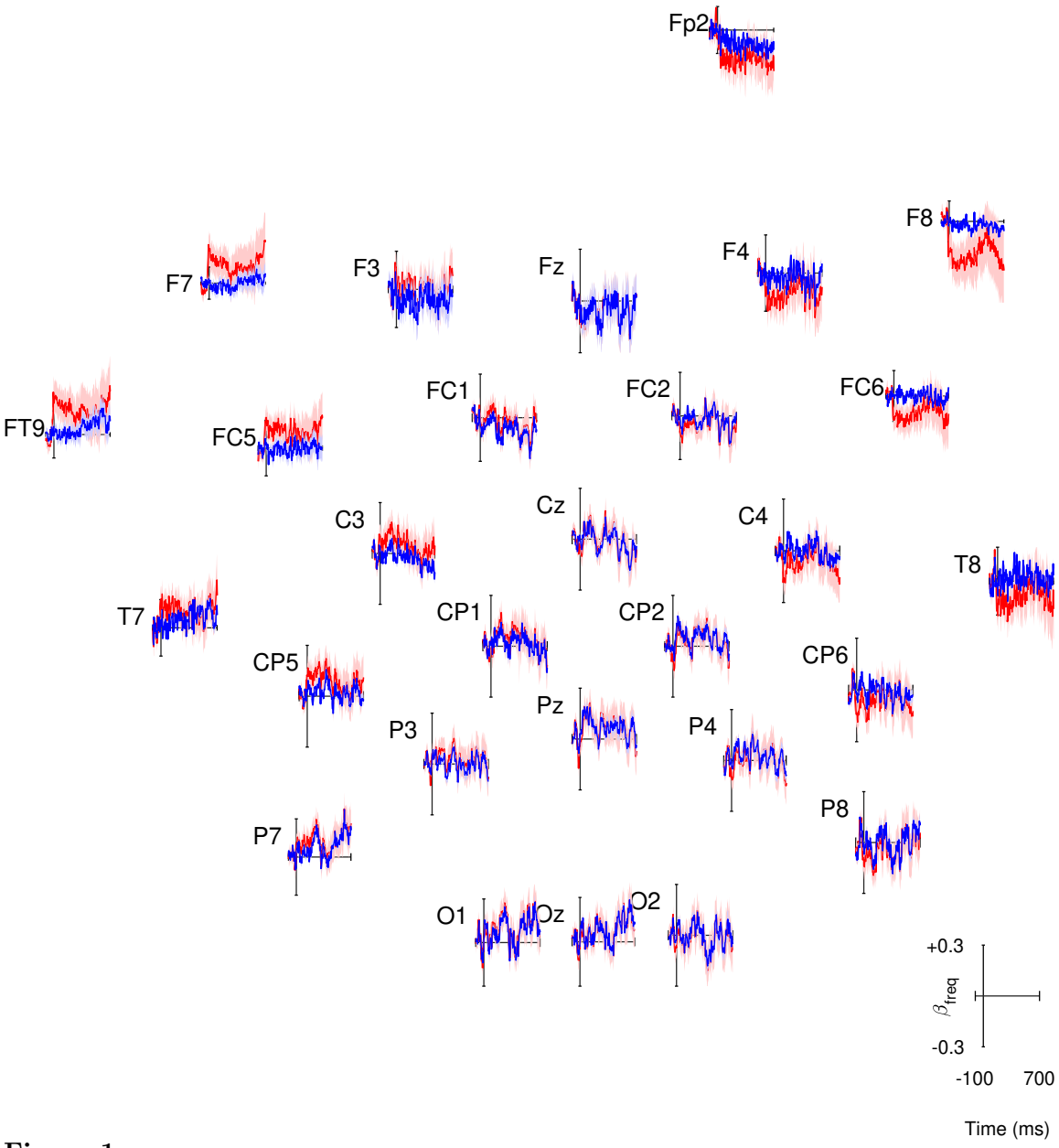

Figure 1

Topographically plotted regression coe cients of word log-frequency, time-locked to first fixation on each word, before (red) and after (blue) ocular artifact correction. Shaded areas are standard errors.

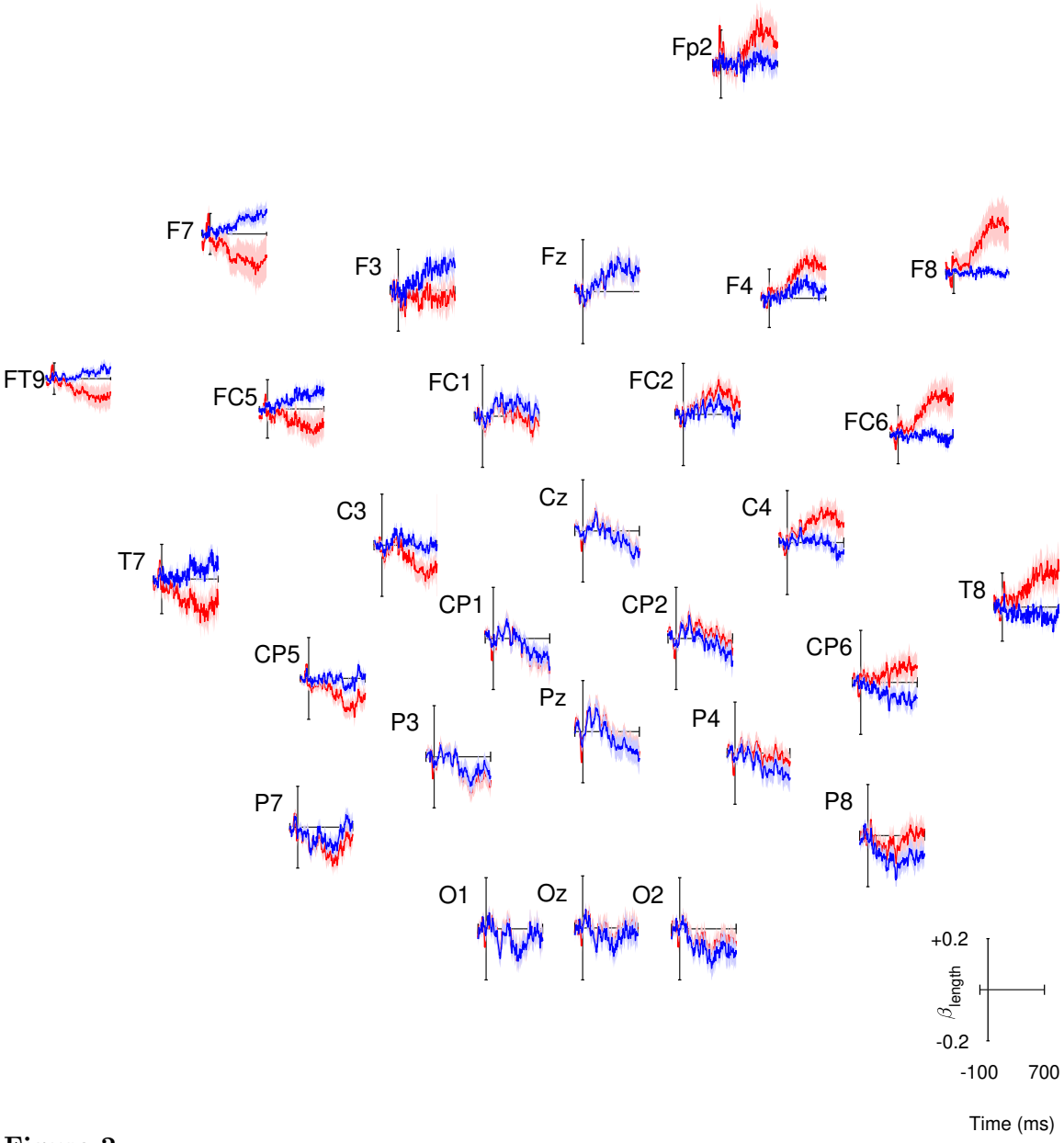

Figure 2

Topographically plotted regression coe cients of word length, time-locked to first fixation on each word, before (red) and after (blue) ocular artifact correction. Shaded areas are standard errors.

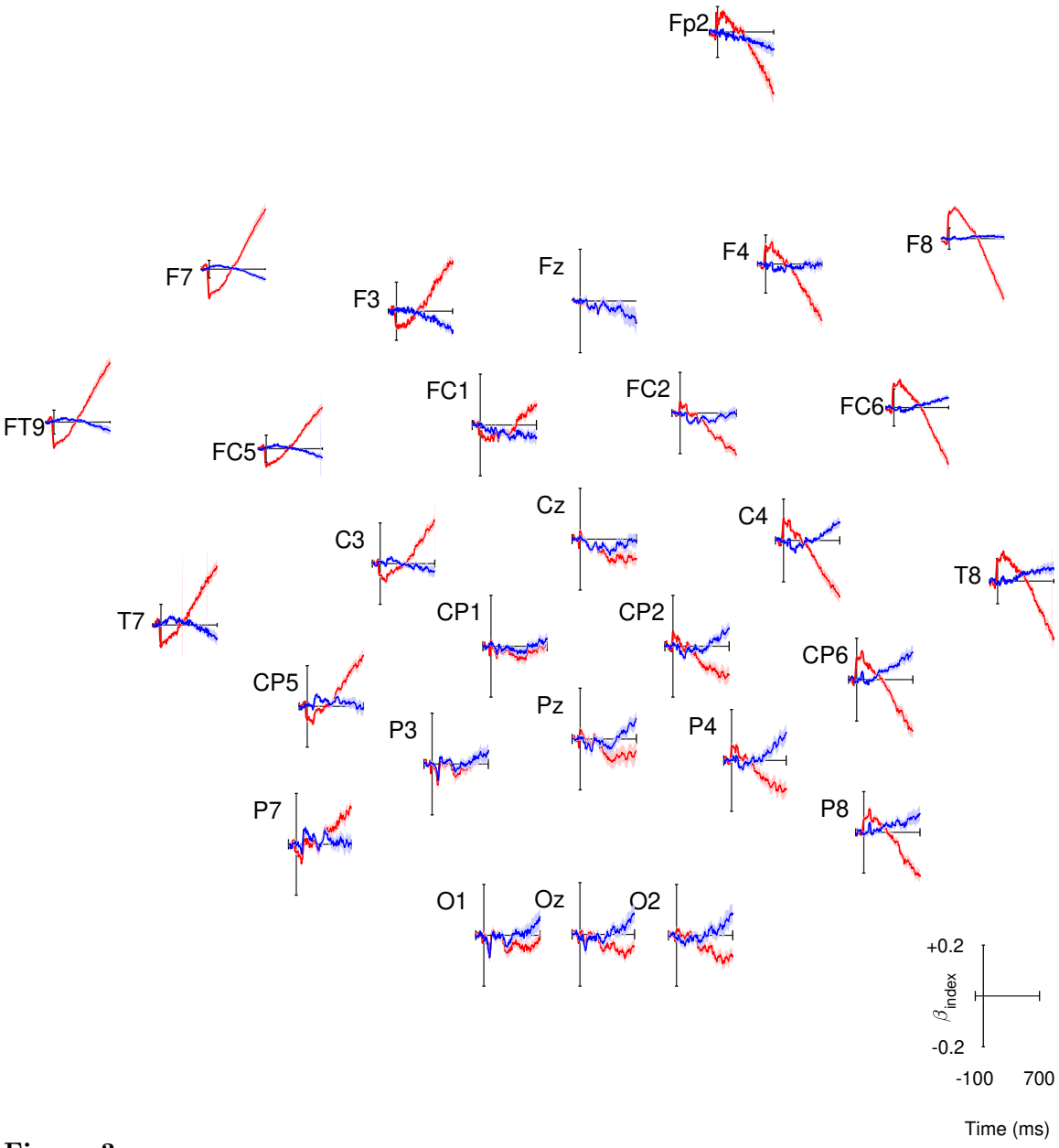

Figure 3

Topographically plotted regression coe cients of word position in the sentence, time-locked to first fixation on each word, before (red) and after (blue) ocular artifact correction. Shaded areas are standard errors.