Readme Pupil-Analysis

As stated in the paper, we analyzed pupil size and fixation duration largely separately. Note that in the original design, 4 more conditions were presented, but, as stated in the methods section of the paper, were not included in the analysis. Furthermore, the neutral condition, which is shown but not included in the statistical analysis in the manuscript is labelled as condition 3. The relevant conditions are labelled as follows:

1: supraliminal happy

2: supraliminal fear

4: subliminal happy

5: subliminal fear

*Pupil size*

The analysis of pupil size is based on the output of Tobii-Studio to an excel-sheet with one row per time-stamp. This output can be found in rawdata\_pupil. To prepare these data for matlab, the relevant columns (timestamp, media, left pupil, right pupil) are exported to a txt-file and the separator ‘,’ is replaced by a ‘.’. The rest of the analysis is done with the script *pupil\_pupilsize\_analysis.m* (and *did\_baby\_look\_during\_subliminal.m* to check whether the baby looked at the face during the presentation of the subliminal face in condition 4 and 5).

*Fixation analysis*

Analysis of fixation duration is based on the fixation duration computed by Tobii Studio. Hence, the input for this matlab analysis are the txt files with output form Tobii Studio which already contain the fixation durations computed for the respective ROIs. The analysis is then computed with the script *pupil\_fixation\_analysis.m* (and, again, *did\_baby\_look\_during\_subliminal.m* to check whether the baby looked at the face during the presentation of the subliminal face in condition 4 and 5).

*Notes*

* *repanova.m* is the function used to compute the repeated measures ANOVA, and relies on *spm\_Fcdf.m*
* overview of files included:

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| **Folder** | **Description** |
| rawdata\_fixation | Contains the raw data for the analysis of fixation duration |
| rawdata\_pupil | Contains the raw data for the analysis of pupil size |
| preproc\_fixation | Contains the preprocessed data of the fixation analysis |
| preproc\_pupil | Contains the preprocessed data of the fixation analysis |
| pupil\_segments | Contains another indermediate step in the analysis of pupil size, in which 5 repetitions of the same condition are actually broken down into those 5 segments |
| looking | Contains two different formats of essentially the same information, namely whether the infant looked at the subliminal face in condition 4 and 5 |