Overview of Files

The following is an overview of the files that are available for download on the MEGco data set page on neicommons (https://neicommons.nei.nih.gov/#/MEGco). On the neicommons pages for each paper (Temporal dynamics of the neural representation of hue and luminance polarity and Color Space Geometry Uncovered with Magnetoencephalography) there are guides and scripts for performing the decoding analysis using the data described below.

Raw data

The raw MEG data in BIDS format can be accessed on openneuro.

Preprocessed data

Many of the intermediate data files are available on the neicommons page.

The raw MEG data was preprocessed using Brainstorm to remove eye blink artifacts and trials in which any sensor exhibted out-of-range activity (0.1-8000 fT). This brainstorm preprocessed MEG data is available on neicommons. Due to the large directory sizes, there is one zipped directory for each session of each subject. The decoding analysis was initially done on trials epoched with a window of [-200,600] ms. Later, for decoding color terms, the window was expanded to [-200,1200] ms. Therefore, there are two sets of preprocessed data for each subject-session in the main experiment (as opposed to the pilot experiments).

Intermediates_Data contains the preprocessed data for the main experiment. There are two sessions for each of 18 subjects. For the decoding code to run as written, these data should be put in a directory named `/MEG_Project2018/Intermediates_Data/data/`. If you put it somewhere else, then you must edit the code to reflect the change in paths.

anat.zip contains the anatomical ROI's in Brainstorm for 14 subjects. These correspond to the data in Intermediates_Data. The files within anat.zip should be saved in `/MEG_Project2018/Intermediates_Data/anat/`

Intermediates_Data_LongWindow contains the preprocessed data for the main experiment with the expanded time window. These data should be put in `/MEG_Project2018/Intermediates_Data_LongWindow/data/`. Note that this data was not used in Hermann et al, 2020 (Biorxiv)

Second Pilot Data (Task Control Expt) contains the preprocessed data for the second pilot experiment with the task control. There are two subjects with 5 sessions each. These data should be put in `/MEG_Project2018/Intermediates_Data/data/`.

First Pilot Data (Check Power) contains the preprocessed data for the initial pilot experiment that was used in a power analysis. There are 4 subjects with 1 session each. These data should put in `/MEG_Project2018/Pilot0/Brainstorm_Format/`.

Raster Format

The preprocessed data was converted to a raster format for the decoding analysis. The raster data for a given subject consists of 306 `.mat` files (one for each MEG channel) containing data for all the trials and a separate structure that denotes the stimulus that appeared during each trial.

Raster data for the main experiment with the shorter time window is available on neicommons. The two sessions were combined for each subject into one set of raster files, so there are 18 zipped directories with raster data. This raster data should be stored in `MEG_Project2018/Intermediates_Study/Raster_Format/`

Raster files for the longer window and for the pilots are not included but can be produced by scripts which will be described later.