**Supplementary Materials**

**S1. Supplementary Methods**

**S1.1. Preprocessing script**.

!/bin/bash

## Preprocessing stream after converting to .nii

# Creates fMRI data that's aligned to anat, motion-corrected, then

# Creates difle data for inputting as regressors in GLM and

# censoring timepoints with excessive motion (censors TRs w/ >3% motion)

# Set basedir, sub ID, visit number

basedir=C:/basedir

cd ${basedir}/MRI\_processed\_data

for sub in SUB\_ID

do

for vis in VIS\_ID

do

cd ${basedir}/MRI\_processed\_data/${sub}\_V${vis}

# Removes skull from Anat \

3dSkullStrip -input ${sub}\_V${vis}\_anat.nii -prefix ${sub}\_V${vis}\_anat\_ns.nii

#Alignment of Math1 epi and produces motion file

align\_epi\_anat.py -epi ${sub}\_V${vis}\_math1.nii \

-anat ${sub}\_V${vis}\_anat\_ns.nii \

-anat\_has\_skull no \

-epi2anat -epi\_base 0 -suffix \_aligned \

-volreg\_method 3dvolreg -volreg\_opts '-Fourier' -dfile ${sub}\_V${vis}\_math1\_motion.difle \

-Allineate\_opts '-warp shift\_rotate' \

-tshift on \

-deoblique off \

-save\_vr

3dToutcount -automask -fraction -polort 3 -legendre \

${sub}\_V${vis}\_math1\_aligned+orig >> outcount.${sub}\_V${vis}\_math1.1D

#Alignment of Math2 epi and produces motion file

align\_epi\_anat.py -epi ${sub}\_V${vis}\_math2.nii \

-anat ${sub}\_V${vis}\_anat\_ns.nii \

-anat\_has\_skull no \

-epi2anat -epi\_base 0 -suffix \_aligned \

-volreg\_method 3dvolreg -volreg\_opts '-Fourier' -dfile ${sub}\_V${vis}\_math2\_motion.difle \

-Allineate\_opts '-warp shift\_rotate' \

-tshift on \

-deoblique off \

-save\_vr

3dToutcount -automask -fraction -polort 3 -legendre \

${sub}\_V${vis}\_math2\_aligned+orig >> outcount.${sub}\_V${vis}\_math2.1D

#threshold outlier criteria (>3% voxels outliers) & save motion censoring files as (0 or 1) for each TR.

1deval -a outcount.${sub}\_V${vis}\_math1.1D -expr '1-step(a-0.03)' > 3%${sub}\_V${vis}\_math1.txt

1deval -a outcount.${sub}\_V${vis}\_math2.1D -expr '1-step(a-0.03)' > 3%${sub}\_V${vis}\_math2.txt