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**Creation of t-statistic Maps for Contribution to the NIDER Project**

*Emotion Regulation Task Design:*

Before the MRI session, participants provided cue words and brief descriptions of 10 negative autobiographical memories and 4 neutral autobiographical memories. The day of the scan, participants reviewed the cue words and descriptions with the goal of being able to recall each memory by seeing only its associated cue word. Participants were also trained in the use of two emotion regulation techniques, “distraction” and “reappraisal”. Distraction was described as “turning your thoughts to a positive memory, completely unrelated to whatever is causing the negative emotion”. Reappraisal was described as “reinterpreting the memory in some way to reduce its negative emotional tone”. Examples were also given for each method. Participants also trained in just letting their thoughts naturally “flow” following recall of a memory. During the training of each of these three methods (distract, reappraise, flow) participants practiced applying them to generic memory cues and vocalized what they were mentally doing as they did so, allowing study personnel to verify that participants understood the methods.

While undergoing functional MR imaging, participants were cued to recall the memories they provided. Following each specific memory cue, participants were then cued to distract, cued to reappraise, or cued to flow. The method cues were counterbalanced such that each negative memory was followed by each of the three cues once. Neutral memories were only followed by the “flow” method cue.

*Conditions of Interest:*

The task conditions used to create the provided t-statistic maps were reappraisal of negative memories and “flow” on negative memories. In the language on the NIDER website (https://www.affectiveneuro.at/nider), these served as the “regulate” and “view” conditions, respectively.

*Questionnaire:*

Participants completed the ERQ. The mean of the reappraisal items was used for each participant.

*Self-Rating:*

Following each cued method section of the fMRI task, participants responded to two rating screens. The first asked, on a scale of 1 to 4, how positive or negative they felt (1 being very negative and 4 being very positive). Rating responses were averaged across each condition (here, reappraisal of negative memories (“regulate”) and flow on negative memories (“view”)). Before these data were used to create the t-stat maps for this project, the ratings were inverted, such that higher values reflected a more negative feeling.

*Creation of Amygdala Contrast Covariate:*

The binary map of the amygdala was downloaded from the NIDER site. Maps of the view-regulate contrast were created for each participant using FSL’s FEAT (FMRIB, Oxford, UK). The average value of this contrast within the amygdala ROI was calculated for each participant using FSL’s featquery tool.

*Creation of T-stat Maps:*

Maps of the regulate-view contrast were created for each participant using FSL’s FEAT. These were then entered into higher-level analyses (one analysis per covariate) to create the three t-stat maps provided. In each case, the appropriate demeaned covariate was set as an EV in the analysis design. The unthresholded t-statistic maps were then copied from the output statistics directories and renamed.

*fMRI Preprocessing:*

Preprocessing of the original fMRI data was done using fmriprep, version 1.5.0, using the following preprocessing options: --use-aroma, --output-spaces MNI152NLin6asym:res-2, --dummy-scans 4, --fd-spike-threshold 0.3, --fs-no-reconall. Following fmriprep, the first 4 TRs of the data were removed, the data were temporally filtered, and the brain mask calculated by fmriprep was applied to the image data. The resulting images served as the input to analysis in FSL.

*First-Level Analysis:*

The fMRI task was divided into 4 runs in each session. First-level analysis was performed on each run’s data set.

TR-censoring regressors were included for TRs marked by fmriprep as containing significant motion (FD > 0.3). One regressor was included for each “noisy” TR and each regressor consisted of zeros for every time-point except for its associated TR, for which it contained a 1.

The following were also included as regressors of no interest in the run-level analyses: CSF, white matter, DVARS, FD.

The run-level results were then carried forward into participant-level analyses.