Description of Task Files for "PersTaskfmri"

Applies to Data stored here: lab server - /mnt/delgadolab/jamil/persist/

Used in publications:

Bhanji & Delgado (2014), also see Bhanji, Kim, & Delgado (2016)

Important Filenames (in the TaskFiles folder):

PersTask_fmri_InstructPractice - e-prime, instructions and practice before entering scanner

PersTaskfmri_order1 - e-prime, randomized order used for half of participants

PersTaskfmri_order2 - e-prime, randomized order used for half of participants- unc/con blocks switched from order1

images - folder of images needed for the e-prime presentation

read_persist_logfiles.m – Matlab script, reads e-prime output files and generates FSL style 3-column timing files

File Descriptions

PersTask_fmri_InstructPractice:

Instructions for task framed as "Academic degree game", followed by 2 rounds of practice where the goal is not reached

PersTaskfmri_order1 and PersTaskfmri_order2:

Experimental Design: 2x2 within subjects (Condition changes from round to round, but not within)

Factor 1: Uncontrollable Obstacles (setbacks framed as random) versus Controllable Obstacles (setbacks framed as due to incorrect response) – participant receives same pattern of setbacks in both conditions.

Factor 2: High Alternative Value (Path Values are 80/78/76) versus Low Alternative Value (Path Values are 80/70/60)

Timing Information:

Structured for 4 equal length (10m 30s) scanning runs (break screen between each)

Event Timing - 2s Path Choice, 2/4/6s (50/25/25%) Fixation, 2s Obstacle Cue (includes response), 2/4/6s (50/25/25%) Fixation, 2s Obstacle Outcome (Setback received/avoided), 2/4/6s (50/25/25%) Fixation (*no fixation between cue and outcome for Progress Cues)

Trial Counts and other details:

40 rounds, 128 obstacle cues, 80 setbacks (62.5% of obstacles), 48 avoided setbacks (37.5% of obstacles), 64 progress cues (class meetings) – divided equally across 4 conditions

How to interpret output files:

EventType: 1=uncontrollable obstacle, 2=controllable obstacle, 3=progress cue, 4=path choice, 6=goal feedback

Lose: 1=setback received, 0=setback avoided, -1=event was path choice or goal feedback

Persist: 1 = choice to try again on the same path where a setback was just experienced, 0 = choice to switch to a different path than the one where the setback was experienced, -2=first path choice of the round, not included in persistence calculation, -1 = no response given for path choice

read_persist_logfiles.m: See documentation in script.

Also see (e.g., similar tasks described elsewhere): Similar to PersTask_UncCon (used in StressPersist), PathTask (used in SmokPersist and Opiod user studies)

Other notes (e.g., how to calculate behavioral measures, other versions of the task that might be helpful)

To calculate Behavioral Persistence for each participant, you take the number of Persist choices (coded as "1" in the "Persist" column of output for each condition, and divide by the total number of post-setback choices (choices with a "1" or "0" in the Persist column. Missed choices have a "-2" in the "Persist" column).

The "Switch" column in the output has value "1" when the participant chooses a path that is lower in value than the current path, "0" if they choose the same path or a higher value path.

The files named "PathTask" in the SmokPersist and Opiod study folders are designed to be easier to share (and are shorter versions of the task, without Academic framing).

If a participant does not change their response after a controllable setback (i.e., fails to learn from a mistake), then a setback is received and the study continues on.

If a participant does not choose a Path in the given time then the highest value path is selected (for first choice in round) or their previous choice is selected (for subsequent choices), and the study continues on (these choices are marked with a value of "-2" in the "Persist" output column.