LtpFR2

From Internal CML Wiki

This page delineates the structure of the ltpFR2 experiment. ltpFR2 is a 24 session experiment using scalp EEG technology. Participants are screened for ltpFR2 using the ltpFR paradigm. Only those participants who have completed ltpFR can be recruited for ltpFR2. Completion of ltpFR serves as a built-in screening process to determine participant reliability and desirability, and signifies their prior completion of the behavioral studies (WAIS and WMS-CVLT). There is a free recall section of the ltpFR2 experiment, as well as a distractor between word lists.

Free Recall

Throughout all sessions, participants are looking at lists of words and recalling them. Additionally, there is a distractor period where participants are asked to perform arithmetic equations (A+B+C). The distractor can take place during two times of the experiment: 1) before list 2) end-of-list. Both distractor periods are 24 seconds in duration. The before list distractor is presented 50% of the time, while the end-of-list distractor is always presented.

- For relevant documents regarding ltpFR2 testing and collection go here (https://memory.psych.upenn.edu/InternalWiki/Lab_Document_Organization)

- Experiment code including word pools and WAS similarity matrix can be found in /home/svn/experiments/ltpFR2/trunk

Methods

1. 24 sessions
    - a) Sessions 1-23 use same subset of wordpool (set A).
    - b) Session 24 has three list types, evenly split
        - Pure set A
        - Pure set B (subset of wordpool NOT used in sessions 1-23)
        - Mixed set A/B
2. 24 lists
    - a) 24 words
    - b) 8 pairs of semantically-binned words (5 linspaced bins of WAS values, based on the full pool of 1638)
        - 2 pairs from each of 4 bins (one pair contiguous, one pair at least 3 intervening items)
    - c) 8 random words
3. Distractors:
    - a) All A+B+C arithmetic
    - b) Distractor before list: 24 seconds, present on ½ of lists
    - c) end-of-list: 24 seconds
4. Stimulus duration + ISI w/ jitter
    - 1600 stimulus duration
    - 800-1200 ISI (800 fixed plus 0-400 jitter).

Events information

The following are all the fields in an events structure. Note: these come from events_all_LTP***, which are located in /data/eeg/scalp/ltp/ltpFR2/behavioral/events/.

- subject: string identifier of the subject, e.g. LTP001
- session: numerical session value, 1 - 24. **Note: session directories are numbered from 0 to 23**
- trial: list number (1-24)
- type: type of event
  - DISTRACTOR - math distractor, encompasses the full 24s of distractor in one event)
  - REC_START - when the recall period begins
  - REC_WORD - free recall item
  - REST_REWET - when rewet occurs
  - WORD - encoding item
- serialpos: serial position in which word was presented during the study list
- begin_distractor: duration of start-of-list distractor, 0 or 24000 ms
- begin_math_correct: number of math problems correct from start-of-list distractor. Nan if no distractor
- final_distractor: duration of end-of-list distractor, always 2400 ms
- final_distractor_math_correct: number of math problems correct from end-of-list distractor
- item: string of the word presented or recalled
- itemno: index of the word in the wordpool
- recalled: 1 (item subsequently recalled) or 0 (not recalled)
- intruded: true if the item was a PLI in a subsequent list. If true, the list in which the item was intruded is: event.trial + event.intruded
- rectime: in free recall, time after beginning of the recall period that the word was vocalized
- intrusion: in free recall
  - 0: correct recall
  - -1: ELI
  - n>0: PLI - number of lists back
- mstime: time of event in absolute time, in milli seconds
- msoffset: estimated maximum possible error of mstime
- eegfile: location of EEG data
- eegoffset: time of event in absolute time, in samples
- artifactMS: time relative to word presentation onset of a blink
- artifactNum: this is the number of contaminated samples that the artifact lasts
- artifactFrac: this is the fraction of the samples from the current event to the next event that are contaminated
- artifactMeanMS: this is the average ms time of the contamnated samples
- badEvent: 1 if an event was bad with any channel, 0 if not
- badEventChannel: if an event was bad, lists the channels that were bad

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