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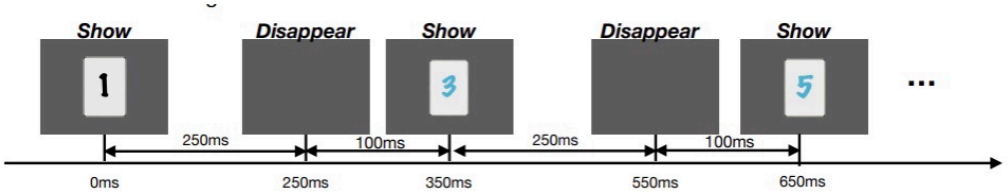
1. Experiment paradigm



The color RSVP paradigm is implemented in python using psychopy. In the paradigm, the participants were briefly shown a sequence of cards in a random color and number starting with a given target color, they are instructed to count the number of cards in that given target color. There are 9 sequences in total. The participants have to track the cards independently for each sequence. There are 3 colors in total which are blue, purple and black. Each color were presented as target color for 3 times and the orders were randomly shuffled. In each sequence, 60 cards in target color and 180 cards in non-target color were shown, numbers on the card were randomly chosen from 1 to 6. Each card were shown for 250ms and then disappear for 100ms. At the end of each sequence, the participant were asked to input the number of cards shown in target color.

2. Data acquisition

4 participants (12 males and 12 females, aged 19-34, mean = 25 yrs , S.D. = 4.34) took part in the experiment. All had normal or correct-to-normal visual acuity and none of them had a history of neurological disease or injury. Subjects were members of Korea University and healthy volunteered to participate in the study. All the participants were naive to the card game paradigm. The participants gave written informed consent before the experiment and received payment for taking part in the study. EEG with wet electrodes was recorded with a sampling frequency of 500 Hz, using BrainAmp amplifiers and Easy-Caps with a passive electrode system (Brain Products, Mu- nich, Germany). The measurements were performed with 31 EEG electrodes, namely: Fp2,F9,7,3,z,4,8,10, FC5,1,2,6, T7,8, C3,z,4, CP5,1,2,6, P7,3,z,4,8, PO3,4, O1,z,2 as well as one EOG electrode below the right eye (EOGv1). Two bipolar EOG channels were computed with channels F9,10 and Fp2, EOGv1 for horizontal and vertical EOG, respectively. All other 28 EEG electrodes were nasion-referenced and a forehead ground was used (Fpz). Impedances of all electrodes were kept below 10k during the experiment. Setup time for the electrode configuration was 35 minutes on average.

3.Data file description

Data file is in Matlab compatible format (.mat extension) version 7.3. All data are preprocessed and epoched to a range of -200 ms to 1000 ms with respect to card show stimulus onset. Structure of this dataset is compatible with the BBCI toolbox.