

## Could Complex Decision Making (CDM) be induced by Repetition and Emotional Priming in choices for a Not Important Task (NIT)?

### INTRODUCTION

Complex decision-making processes can be conceptualized as ones that the accuracy of the response is more relevant than the response time (RT), since the decision could affect the probability of survival or success in the short or long-term of the deciders, who are conscious of this condition during the process. We previously developed an experimental paradigm where these processes can be differentiated by its priming susceptibility, top-down modulation and RTs. Results of previous cognitive experiments suggested that choices, done without any specification (NST group), are susceptible of induction by Repetition priming (RP) and Emotional priming (EP). However, when done for an important task (IT group), choices are only affected by EP. Besides, IT group lasted more during the DM process (see poster titled "Complex decision-making could be facilitated by social modulation through priming"). Considering these results, the aim of the present study is to evaluate the susceptibility to both priming and RTs, when choice involves a non-important task (NIT).

### METHODS AND RESULTS

#### Repetition Priming Paradigm

Online experiment where 4 faces were presented sequentially, with different frequencies (1, 6 or 12 repetitions) after that the subject was asked to choose one face. Subjects were randomly divided into two analysis groups, depending on the task (NST or NIT). The experiment consisted on three experimental trials and one control trial, where all faces had the same frequency. At the end, an attentional test was performed in which the participants were asked to identify the faces they recognized (4 out of 8 total). Participants who recognized less than 3 were excluded.

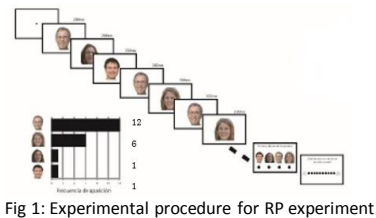


Fig 1: Experimental procedure for RP experiment

#### Emotional Priming Paradigm

Here, the online experiment consisted in the presentation of 4 faces associated with emotional phrases (and at the same frequency). Thus, faces could be grouped according to 4 categories: POS (associated to 5 positive phrases), NEG (negative phrases), NEU (neutral phrases) or MIX (2 positive, 2 negative, and 1 neutral phrases). The experiment consisted on three experimental trials and two control trials, one in which all faces had neutral phrases, and another with 2 faces associated with neutral and the 2 others with mixed phrases. Participants were also randomly assigned to NST or NIT groups.

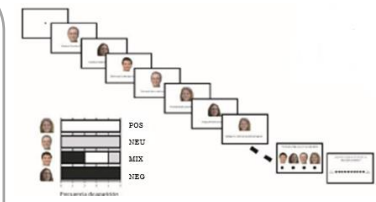


Fig 3: Experimental procedure for EP experiment

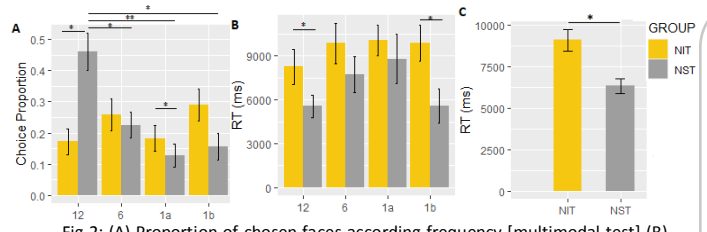


Fig 2: (A) Proportion of chosen faces according frequency [multimodal test] (B) Average time response (RT) according emotional content [Gamma distribution Test] (C) Average time response according task group. [\*p<0,05; \*\*p<0,01; \*\*\*p< 0,001]

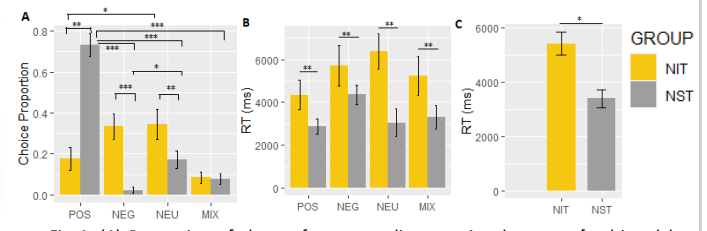


Fig 4: (A) Proportion of chosen faces according emotional content [multimodal test] (B) Average time response (RT) according emotional content [Gamma distribution Test] (C) Average time response according task group. [\*p<0,05; \*\*p<0,01; \*\*\*p< 0,001]

#### Results

\* NST group preferred faces with higher frequency and faces with positive phrases associated. → Repetition and Emotional Priming susceptibility  
 \* NIT group did not show any frequency and emotional preference, differentiating from previous IT group. → NO Repetition Priming susceptibility  
 → NO Emotional Priming susceptibility  
 \* NIT group presented higher Response Time than NST group in both experiments.

### DISCUSSION

The results of NST group are consistent with the results of the same experimental group in the previous experiment, although both experiments were conducted in different populations and moments. Our results showed that NIT group are not susceptible to Repetition priming (similar to previous IT group) but neither to Emotional priming (different to IT group). However, in both cases, NIT group takes longer to choose.

**These results support our previous results suggesting that the complex DM processes can be induced by emotional or repetition priming depending on the task, what could possibly trigger top-down modulation.**

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