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Variables Info

What is the role of physiological activation in shaping temporal representations?

1 Brief Description of the Study

1.1 Aim of the Study

The aim of this study is to explore the relationship between physiological activation and temporal representations. To achieve this, participants were immersed in emotional situations, and fluctuations in their physiological responses were recorded as they performed timing tasks. By analyzing Heart Rate Variability (HRV) and Skin Conductance Response (SCR), the study seeks to elucidate the intricate interplay between physiological arousal and temporal processing, contributing to a deeper understanding of how emotional experiences shape time perception.

1.2 Procedure

Before inviting participants into the lab, we checked for inclusion criteria with an online administered questionnaire implemented in Qualtrics™. Once we assured that the participants did not meet exclusion criteria nor they were familiar with the emotional videos employed, we tested them individually in an Immersive Virtual Reality Laboratory: The Cave Automatic Virtual Environment (CAVE). The CAVE laboratory is a laboratory in which the participant is placed in the center of the room where he/she is exposed to over 180° of visual, and 360° of acoustic immersion (Mioni & Pazzaglia, 2023). The experimental procedure, once the participant arrived into the lab, required the application of disposal electrodes for recording physiological activity. Then the participants went through a 5 minutes resting state recording, and completed a Heart Beat Tracking Task. At the end of this section, the participants completed a Self-Assessment Manikin (SAM) and a Free Finger Tapping Task. At the end of the task, the participants were exposed to emotional videos during which a red dot appeared. Participants were instructed to press the space bar when they thought one minute had elapsed since the appearance of the red dot. At the end of the emotional video, participants were asked to retrospectively judge the duration of the video and completed once again the SAM and the Free Finger Tapping Task. The block ended with the completion of the Revised Sensation Sickness Questionnaire, and then, after 10 minutes of a break, the procedure was repeated for another 2 emotional videos. The emotional videos could have been presented in two possible orders: Positive-Neutral-Negative or Negative-Neutral-Positive.

2 Data Vocabulary

2.1 Tapping_Long Data Variables

- **ID:** Participants' Identification Codes after anonymization.
- **Order:** Order Presentation of the emotional videos: it can be PNN for *Positive-Neutral-Negative* or NNP for *Negative-Neutral-Positive*
- **Emotion:** Emotional video presented.
- **Time:** In this case, this variable represents whether the tapping was performed before or after the emotional immersion. It can, therefore, take on two values: *Pre* or *Post*.
- **Trial:** This variable represents the trial number. It is important to note that the first tap should be excluded from the analysis.
- **ITI:** Namely Inter-Tap-Interval. It represents the time intercourse between one tap and another.

2.2 Tapping_Short Data Variables

- **ID:** Participants' Identification Codes after anonymization.
- **Order:** Order Presentation of the emotional videos: it can be PNN for *Positive-Neutral-Negative* or NNP for *Negative-Neutral-Positive*
- **Emotion:** Emotional video presented.
- **Time:** In this case, this variable represents whether the tapping was performed before or after the emotional immersion. It can, therefore, take on two values: *Pre* or *Post*.

- **CV:** Namely Coefficient of Variation. It represents the variability in performance. It has been computed as SD/Mean.
- **ITI:** Namely Inter-Tap-Interval. In this case, it represents the average time intercourse between one tap and another. It has been computed averaging the mean ITI of the long format excluding the first trial.

2.3 Retrospective Data Variables

- **ID:** Participants' Identification Codes after anonymization.
- **Order:** Order Presentation of the emotional videos: it can be PNN for *Positive-Neutral-Negative* or NNP for *Negative-Neutral-Positive*
- **Emotion:** Emotional video presented.
- **Estimate:** This variable reports (in minutes) the perceived duration of the emotional videos reported by the participants.
- **RATIO:** This variable reports the index that indicates participants' accuracy in the Restrospective Judgment task. It has been computed as

$$\frac{\text{Subj_Time} - \text{Obj_Time}}{\text{Obj_Time}}$$

A positive value indicates *overestimation*, a negative one indicates *underestimation*. The proximity to 0 indicates accuracy.

2.4 Production Data Variables

- **ID:** Participants' Identification Codes after anonymization.
- **Order:** Order Presentation of the emotional videos: it can be PNN for *Positive-Neutral-Negative* or NNP for *Negative-Neutral-Positive*
- **Emotion:** Emotional video presented.
- **Estimate:** This variable reports (in milliseconds) the estimate of one minute made by participants after seeing the red dot.
- **RATIO:** This variable reports the index that indicates participants' accuracy in the Restrospective Judgment task. It has been computed as

$$\frac{\text{Subj_Time} - \text{Obj_Time}}{\text{Obj_Time}}$$

A positive value indicates *overestimation*, a negative one indicates *underestimation*. The proximity to 0 indicates accuracy.