**Behavioral Neurology**

A. DUMBRAVA, M. TOBA, M. TATU & C. BALUT. Line Bisection in Depression.

**Objective:** To evaluate the bisection accuracy in depression.

**Methods:** The study compared the line bisection performance of two groups: a depression group (n = 20) and a control group (n = 20). The line bisection task was performed using a computer-based program.

**Results:** The depression group showed a significant leftward bias in line bisection, while the control group showed a slight rightward bias.

**Conclusions:** The leftward bias in the depression group suggests a disruption in the right hemisphere's ability to control the left hemisphere's movement.
Participants and Methods: Musically expert (at least 8 years of formal training) and musically naive adults from two age cohorts, young and middle-aged (N = 20 x 4), were presented with musical excerpts intended to express happiness, peacefulness, fear/threat and sadness (Vieillard et al., 2008). Subjects rated how much each excerpt expressed each of the four emotions in 10-point scales.

Results: The intended emotions were consistently recognized. Advancing age was associated with decreased responsiveness to fear/threat and sadness, but not to happiness nor peacefulness. A positive effect of musical expertise was observed only in the middle-aged group. However, years of musical training correlated with recognition accuracy. Global cognitive functioning and personality traits did not mediate these effects.

Conclusions: The expression of emotions in music, namely happiness, peacefulness, sadness and fear/threat, is consistently recognized by young and middle-aged listeners. Musical expertise appears to enhance recognition accuracy. The ratings attributed to positive and negative emotions are modulated by age.

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M.M. Rudzinski, The Dynamics of Rapid Emotional Changes in Physiological Terms. Comparison of the Mouse Paradigm and the Asymmetry of Alpha Oscillations in Prefrontal Cortex.

Objective: Both the dynamic concept used in social psychology called “mouse paradigm” and prefrontal cortical asymmetry index use the same underlying construct of attraction and repulsion reaction. The purpose of this study was to test whether indeed the two indices show the same reactions. Also sought to demonstrate the time accuracy with which prefrontal asymmetries can be measured.

Participants and Methods: The study involved 12 students aged 19-26 years. We used in it the “mouse paradigm” which gives information about the reaction of attraction/repulsion with an accuracy of 1/10s during 100s study period and the prefrontal cortex asymmetry collected at the same time using 6 EEG electrodes, respectively F3, F4, T3, T4, P3 and P4. Study participants had to set their moment-to-moment feelings about the positive, negative and mixed-valence target.

Results: The survey shows a significant correlation of both methods at the level of \( r > 0.5 \) but decreasing with increasing resolution - reduction of compared time periods length: remaining significant even for 2s intervals.

Conclusions: Study shows correlation of prefrontal asymmetry with mouse paradigm. This gives the opportunity to study rapid emotional reactions with physiological indicators.

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Objective: A growing body of research since the 1980s has demonstrated that people with severe traumatic brain injury (TBI) have difficulty decoding emotional expressions, although the reasons for this are poorly understood. Some also report lessened emotional experience in general and, as a group they have been found to have lowered arousal when viewing distressing images. This raises the question as to whether affective responsiveness to emotional faces is linked to emotion perception.

In this study we examined whether automatic facial mimicry to expression is impaired in people with TBI and whether this relates to accuracy in emotion recognition.

Participants and Methods: Twenty-one adults with severe TBI and 20 control participants viewed angry and happy facial expression. Facial movement of the Corrugator supercili (brow) and Zygomaticus major (cheek) was monitored using EMG. Participants were also assessed for their ability to identify emotional expressions.

R. SZCZEPANOWSKI. Internal observer threshold mediates conscious reports of fear.

Objective: There is considerable interest in studying how fear-relevant information becomes conscious and research suggests accessibility and availability as critical cognitive mechanisms underlying conscious reporting of fear. The author proposed a novel methodological approach towards conscious perception of fear based on threshold vision, where conscious emotional contents were quantified at internal thresholds using a three state threshold model.

Participants and Methods: Twelve volunteers participated in this study, and performed two detection tasks with backwaredly masked faces in which targets exhibiting fear had to be distinguished from neutral or happy expressions. Subjects made binary decisions followed by 0-point confidence judgments. Behavioral Receiver Operating Characteristics were generated based on confidence ratings, and then fitted by the threshold model. The highest state of the model was identified with conscious accessibility, while its intermediate state with availability.

Results: For both masking experiments, two-limb threshold curves handled the behavioral ROCs well, and the best curves yielded fits to the masking data with coefficients of determination above 0.9 levels. Moreover, threshold model prediction of the masking data revealed patterns of the relation between availability and accessibility as suggestive of conscious reports of fearful targets.

Conclusions: The study demonstrated that the masking with confidence ratings can be a practical realization of measuring perceptual thresholds as well as a legitimate test of the three state threshold theory. Of major implication of the study was that fear-relevant information can be mediated by the global internal threshold in order to be accessible to consciousness. Therefore, the global threshold can be posited as a subject’s intrinsic property mediating emotional contents between perceptual states.

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