Results: To be presented once data collection and regression analyses are complete.

Conclusions: The study contributes to the evidence-base for unitary or multi-factorial neuropsychological models of cognitive impairment in schizophrenia. There are implications for clinical assessment and rehabilitation of people with schizophrenia, and for the targeting of pharmaceutical interventions.

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M. MIKOLAJCZYK, A. KARCZ, A. KLEMBA, B. WICHOWSKI, M. MARCZAK, Z. KONARSKA, M. ROMANOWICZ, K. PALUCH, A. BOCHYNSKA, D. TOMCZYK, M. RIDEL, A. RUSZPEL, Z. DZIEWANOWSKA-STEFANCZYK, K. LUTEK & A. WACHOWIEC. Source monitoring deficits in induced hallucinations conditions in schizophrenic patients, correlated with EEG.

Objective: The aim of this study is to confirm the occurrence of those deficits during tasks involving visual modality and to observe specific features in the activation of the CNS while participating in these tasks. The issue undertaken in the following study will be source monitoring deficit that occurs in patients with schizophrenia. Source monitoring is defined as the function that allows to differentiate between external (environmental) and internal (subjective) source of stimuli.

Participants and Methods: The study will be carried out on 3 groups of subjects: schizophrenic patients experiencing positive symptoms, schizophrenic patients not experiencing positive symptoms, and a control group of healthy subjects, matched with the clinical groups in terms of demographic characteristics.

Subjects will be exposed to two kinds of experiences. The first one will be hallucinations induced by flashing light. The effectiveness of the presentation of a stimulus flashing in the rhythm of alpha brain waves in producing simple, typical hallucinations, is empirically proved. The second type of experience will be perceiving visual stimuli similar to those produced in the induced hallucinations.

Results: The analysis will concern both differences in the ability to identify the source of stimulus as well as differences in the EEG during perception of visual stimuli and experiencing hallucinations. We anticipate the results to show differences in accuracy of recognition of the source of the stimulus between the control group and clinical groups. We expect significant differences in the ability to recognize the source of hallucinations. We also expect to find a correlation between the subjects' experiences and their EEG record, which will document the relationship between source monitoring deficit and functioning of the CNS.

Conclusions: Results and conclusions are yet to be expected.

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Behavioral Neurology

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

Objective: The recent Theory of Group Cortical Organization and Activation (Carlstedt, 2004) suggests that depressive subjects, with their well-known left cerebral hypoactivity, will err more leftward on line bisection; in the present paper we try to test this prediction.

Participants and Methods: The performances using each hand in line bisection task have been compared in two equivalent (in respect of relevant psycho-demographic variables) groups of right-handed, middle aged persons: non-depressive (euthymic) controls (n=19 female + 19 male), dysphoric subjects (n=17f + 15m), and depressive patients before the initiation of any treatment (n=16f + 16m). [All the diagnosis were based on DSM-IV criteria and clinical cut-off scores of common severity measures of depression.]

Results: Despite a relatively constant more leftward deviation of the estimated from objective midpoint in depressive and dysphoric as compared with euthymic subjects, the data analyses revealed no statistically significant difference in performances with each hand in neither pairs of groups.

Conclusions: Given the large heterogeneity of the depressive syndrome, such result pleads just for the need to develop a more sophisticated ratio of the neuro-spatial correlates of each affect, of depression or hemispheric asymmetry.

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

Objective: Given the well-documented left cortical hypoactivity in depression, several of its associated symptomatology could prove to result in corresponding bias in estimations of centers of lines.

Participants and Methods: The performance using each hand on line bisection task have been compared in equivalent (in respect to usual psycho-demographic parameters) groups of right-handed, middle-aged persons, corresponding to each combination of depression (according to DSM-IV criteria and clinical cut-off scores of common severity measures) and apathy (estimated with "The Apathy Evaluation Scale" of Marin, Biedrzycki and Firinciogullari, 1991): with depression but no apathy (n= 31), with apathy but no depression (n= 29), with depression and apathy (n= 30), without any of the two (n= 35).

Results: A systematic bias in estimating the center of the lines was similar in depressives and non-depressives but was significantly larger in the presence as compared with the absence of apathy (either alone or associated with depression).

Conclusions: It seems that apathy but not depression is related with relevant errors on line bisecting.

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C. ROMERO & F. OSTROSKY. Factor Levels of Psychopathy and Violent Behavior.

Objective: The present study aimed to investigate the cognitive distortions about violence in offenders assessed by the Implicit Association Test (IAT) according to the two factor structure of psychopathy.

Participants and Methods: Participants: A sample of 205 inmates (mean age=36.05+10; mean years of education=6.76+3.44) divided into four groups according to their factor levels of psychopathy in: both factors low (n=66), high factor 1 (n=25), high factor 2 (n=29), and both factors high (n=75).

Instruments: A version of the IAT was developed (violent-IAT) to evaluate cognitive distortions about violence and possible disposition toward violent behavior.

Results: The ANOVA test showed that high factor 1 group had a significantly higher d score than high factor 2 and both factors high groups.

Conclusions: The results suggest the presence of cognitive distortions about violence that can increase disposition toward violent behavior in the offenders with high level of factor 2 and those with high components of psychopathy; factor 2 of psychopathy refers to people who begin their criminal lives at a very young age and who have poor behavioral control. It has been proposed that such subjects with antisocial behavior are more likely to violate social norms. If the high levels of factor 2 are combined with lack of empathy, inability to feel guilt and remorse, inability to feel fear, or self-justification, the subjects are at higher risk of committing both misdemeanors, as well as extremely violent acts.

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Emotional Processes

S. CASTRO & C. LIMA. Age and Musical Expertise Affect how we Recognize Emotions in Music.

Objective: When listening to music, we are able to recognize the expression of different emotions. We examine how this recognition is affected by two experiential factors, age and musical expertise. Previous research has indicated age-related effects: fear or threat and sadness undergo a decline from young adulthood to middle age and older years (more than 60 years), but happiness and peacefulness remain stable. Here we investigate whether this change occurs from young adulthood to middle-age, and whether musical expertise has a modulating role.

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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K.K. IMBIR & D. DEMICKA. Mapping of emotion based on homeostatic and transgressive mechanism of formation. An fMRI study.

Objective: The overall aim of the conducted research is to observe diversified brain mechanisms of emotions. The emotions are diversified by sign, which has been discussed and exploited numerous times in psychology and neurobiology. Emotions are also diversified by the mechanism of their formation. These mechanisms are homeostatic and transgressive. Homeostatic means defensive; not requiring participation of consciousness. Transgressive means that which can be activated only by thinking using cognitive standards of evaluation (Reykowski, 1985).

Participants and Methods: The pilot research was conducted using a 3 T fMRI (functional Magnetic Resonance Imaging) scanner on a group of 4 people. All participants were exposed to visually stimulating material containing emotionally charged words and sentences. Their task was to read with understanding the signs of emotion. The participants were to imagine experiencing the emotions indicated by these signs.

Hypotheses

1. Stronger activation of brain structures when negative emotions are triggered compared to the brain structures for positive emotions.

2. Lack of lateralization of brain activation irrespective of affect sign.

Results: Results were analyzed with the use of Statistic Parametric Mapping version 7 (SPM7). Significant activation of the limbic system structure and frontal lobes was observed, This activation was true particularly during assessment of stimuli with negative connotations. No lateralization of activation regarding the influence of the sign was observed.

Conclusions: Formulated hypotheses were confirmed at the pilot study stage. In order to extend time resolution of results, the additional simultaneous employment of EEG equipment should be taken into account in the actual study. Increasing the number of participants will allow assessing the validity of a further hypothesis. The hypothesis is that there is a lack of changeability of activation pattern in the brain emotional regions.

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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 backwardly masked faces in which targets exhibiting fear had to be distinguished from neutral or happy expressions. Subjects made binary decisions followed by 6-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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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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S. MCDONALD, S. LI, D. ARIELLE, R. JACQUELINE, C. JAMES & R.L. TATE. Impaired Mimicry to Angry Expressions in People with Severe Traumatic Brain Injury.

Objective: Introduction: 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 responsivity to emotional faces is linked to emotion perception.

In this study we examined whether automatic facial mimicry to expressions 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 supercilii (brow) and Zygomaticus major (cheek) was monitored using EMG. Participants were also assessed for their ability to identify emotional expressions.