

Methods: Here, we recorded electroencephalography (EEG) from a sample of 20 participants in a semantic conditioning experiment. In the acquisition phase the participants were presented with sequences of words from two semantic categories paired with tactile stimulation followed by presentation of a neutral sound (US-) (e.g., animals -> left hand vibration -> US-, clothes -> right hand vibration -> US-). In the test phase the association violated in 50% of trials which followed by a presentation of a loud noise (US+). The participants were only instructed to listen carefully. On the basis of self-reported contingency awareness, twenty participants were divided in aware (N=12) and unaware (N=8) group.

Results: The aware group expressed a non-lateralized effect of alpha-beta (12-23 Hz) suppression along with a more negative CNV at central channels preceding presentation of the vibration (main effect of Group). Also, CNV was more negative in expectation of US+ comparing with expectation of US- in the aware group but not in the unaware group.

Conclusions: The results indicate that contingency awareness is accompanied by neural patterns reflecting expectation as can be seen in the suppression of somatosensory alpha-beta activity before expected presentation of the vibration as well as in CNV in expectation of an aversive event.

Keywords: EEG; ERP; Fear conditioning; contingency awareness

EPP1067

Complex sympathetic arousal during negative emotional stress

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doi: 10.1192/j.eurpsy.2021.1299

Introduction: The autonomic nervous system (ANS) plays a key role in maintenance of the homeostasis and adaptability of the body to different stimuli. The disturbances of ANS, especially sympathetic dysregulation in stress response, are associated with various disorders.

Objectives: Thus, we aimed to study the sympathetic arousal in response to negative emotional stress and during recovery using heart rate variability (HRV) nonlinear analysis (symbolic dynamics parameter 0V%) and skin conductance level (SCL) as sympathetically-mediated indices in healthy students.

Methods: Seventy students (age: 23.1±0.2yr., 39 females) were examined during complex stress response: baseline – negative emotional stress – recovery. RR intervals (for HRV analysis) and electrodermal activity were continuously recorded during each period lasting six minutes. Evaluated parameters: HRV nonlinear analysis - symbolic dynamics index 0V% as cardiac sympathetic index, skin conductance level (SCL) as sympathetic cholinergic index.

Results: Regarding electrodermal activity, the parameter SCL significantly increased in response to negative emotional stress (p<0.001) and remained higher after stress (recovery phase, p<0.001). Symbolic dynamics index 0V% was without significant changes.

Conclusions: Our findings revealed increased sympathetically-mediated index SCL in response to negative emotional stress and in recovery phase indicating higher sympathetic arousal during complex stress response in young people. Surprisingly, cardiac sympathetic index 0V% was not sensitive to detect discrete changes in sympathetic arousal to negative emotion. We suggest that detailed knowledge about complex sympathetic regulatory mechanisms to emotional stress in healthy probands represents the first step for understanding of pathomechanisms leading to abnormal stress response in mental disorders.

Conflict of interest: This study was funded by the Slovak Scientific Grant Agency under grants VEGA 1/0044/18; VEGA 1/0190/20 and Ministry of Health of the Slovak Republic under the project registration number 2018/20-UKMT-16.

Keywords: sympathetic nervous system; electrodermal activity; heart rate variability; negative emotional stress

EPP1069

Age-related differences in processing speed in children can be explained by heterochronicity of human brain development

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doi: 10.1192/j.eurpsy.2021.1300

Introduction: Age-related differences in the processing speed have been observed in a great variety of tasks. In spite of the great amount of researches in this area, we know relatively little about the nature of this developmental tendency.

Objectives: The aim of this study was to assess whether age-related differences in reaction time (RT) can be explained satisfactorily in terms of a global age-related differences in processing speed alone.

Methods: The sample consisted of 48 4-year-olds, 50 5-year-olds, 46 6-year-olds children, and 35 adults. To investigate processing speed in children and adults we used the test battery consisted of three types of RT tasks: simple, discrimination, and choice.

Results: We have revealed clear age-related differences in processing speed not only between children and adults but also between three age groups of children. However, using transformation method proposed by Madden et al. (2001) and Ridderinkhoff & van der Molen (1997) we have revealed that there are not only global age-related differences but also process-specific age-related differences in processing speed. Among children, age-related differences larger than predicted by the global difference hypothesis were evident when tasks required spatial orientation discrimination and stimulus-response rule complexity, but not for response suppression or reversal of stimulus-response contingencies.

Conclusions: It can be assumed that the observed process-specific, age-related differences in processing speed generally can be explained by the principle of heterochronicity of human brain development (Casey et al., 2005).

Keywords: processing speed; Brain Development; heterochronicity

EPP1071

Visuomotor reaction time can predict IQ in children

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doi: 10.1192/j.eurpsy.2021.1301

Introduction: It is well established that reaction time and IQ test scores are correlated, although the strength of this relationship is a matter of debate (Neisser et al., 1996). It was proposed that processing speed is a component of intelligence (Deary, Penke, & Johnson, 2010; Hunt, 2011). In our previous research we have not revealed the relationship between IQ and reaction time in children (Kiselev et al., 2000). However, it is possible that reaction time can predict intelligence test scores in the developmental perspective.

Objectives: This study investigated whether visuomotor reaction time in 5 year-old children predicts intelligence test scores in 8 year-old children using the longitudinal approach.

Methods: The participants were 35 children (17 males and 18 females) at the age of 5 years (5.34 ± 0.45). We used computerized sensorimotor technique (Kiselev et al., 2009) to investigate visuomotor reaction time in children. Children completed simple, discrimination and choice reaction time tasks. The IQ of 8-year children was assessed by the WISC.

Results: The regression analysis has revealed the significant ($p \leq 0.05$) relationships between discrimination and choice reaction time tasks in 5 years-old children and non-verbal IQ performance in these children at 8 years of age. However, we did not find this relationship for simple reaction time task.

Conclusions: In view of obtained results it can be assumed that visuomotor reaction time in preschool children can predict non-verbal intelligence test scores in the developmental perspective. The received data can give new perspective in the understanding the interrelation between reaction time and IQ in children.

Keywords: processing speed; intelligence; visuomotor reaction time

EPP1072

On psychiatry and psychology

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doi: 10.1192/j.eurpsy.2021.1302

Introduction: Psychiatry is fundamental interdisciplinary medical science with essential importance for enormous health-problems of humanity. Creation of integrative-psychiatry in context of multidimensional&holistic medicine, founded by HIPPOCRATES-GALENUS-HUA T'UA-AVICENA-PARACELUSUS is necessary to counteract disastrous human health-situation. Psychiatry needs new integrative therapy-models considering application of

psychopharmacotherapy as well as practices of psycho-somatic (Th. v.UEXKÜLL) and somato-psychic theories (Y.IKEMI). Emperor AKIHITO during Opening-Ceremony of ICPM-2005-Kobe appointed to consider "total symptoms of mind-body, seeking ways of holistic care".

Objectives: REFERENCES. PSYCHIATRY: EPA-2020-virtual/Madrid, Eur.Psychiatry 63S, EPP0834/5+EPV0581/1470; EPA-2019-Warsaw, Eur. Psychiatry 56S,S689; EPA-2018-Nice, Eur.Psychiatry 48/S1, S623&567&662. WPA-2019-Lisbon, E-Poster WCP19-2137, -1822, -1839; 2018-Mexico-City, Abs.-Book WCP18-0584/-0625/-0643/-0654. 2011-Buenos-Aires,AB:PO1.200. PSYCHOLOGY: EFPA-2019-Moscow, Abs.-Book 1529,1530,1549. IUPsyS-2012-Cape-Town, IntJPsychol 47:407; -2008-Berlin, 43/3-4:154, 248,615,799; -2004-Beijing, AB:49,587. PSYCHOSOMATICS: ICPM-2017-Beijing, AB:ID: 648493,648895,648749,648878; -2005-Kobe, J.Psychosom.Res. 58:85-86.

Methods: Evaluation of psychic-"polar-attitude-list"/physiological-parameters: heart-rate, blood-pressure,etc. from patients/probands after training by occidental/oriental practices (Music-/Yogatherapy/others) (ref.).

Results: Observations demonstrate strong positive influence after music[1], respiratory[2], hatha-yoga[3] therapies. Items of psycho-physiological (relaxed), emotional (tranquil/happy), cognitive (few-ordered thoughts), voluntary (active/spontaneous), social (open/assertive), consciousness (clear/sleepy) categories are significantly positive changed 25-50%. The 3-therapies have specific psychic-effects,e.g. items "relaxed/tranquil" after respiratory- (+45/50%) and music- (+20/50%), also item "open" after music-therapy (+25%) are positive, but negative after respiratory-therapy (-20%). Psychic-effects are correlated with positive physiological-ones,e.g. heart/respiratory-frequency decreased 25-30%, voluntary-apnoea prolonged 55%. Mountain-altitude (>2000-3000m), hypothermia (<20 to 0°C) influenced positively psychic/physiological-parameters,e.g. heart-rate/blood-pressure decrease ($n=125, P<0.05-0.01$).

Conclusions: Different methods of integrative psychiatric therapy are with preference,e.g. for depression is suitable respiratory/physical-training, also hypothermia&high-mountain therapy (activation-euphoria), for mania:music-therapy (inhibitory-effect). Systematically research about single/combined therapies is necessary,e.g. for epilepsy: Respiratory-therapy/hypothermia,etc. could help patients (hypo-/hypercapnia: inhibitory/excitatory effects on CNS-structures).

Keywords: cyclophrenia; integrative psychiatry; psychophysiology; Epilepsy

EPP1073

Working memory after and during 6 Hz transcranial alternating current stimulation

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doi: 10.1192/j.eurpsy.2021.1303

Introduction: Transcranial alternating current stimulation (tACS) is a non-invasive brain stimulation technique allowing to induce changes in oscillatory activity. Theta activity has been reported to play a major role in maintenance of information in working memory (WM).