

POSTER B-21

EMOTIONAL TASK-RELEVANCE IN COGNITIVE AND EMOTIONAL CONFLICT PROCESSING

Artyom Zinchenko¹, Philipp Kanske¹, Christian Obermeier¹, Erich Schröger², & Sonja A. Kotz³

¹Max Planck Institute for Human Cognitive and Brain Sciences, ²University of Leipzig, ³University of Manchester

Descriptors: emotion, cognitive control, emotional control

Emotional stimuli have been shown to speed up cognitive conflict processing, when they are task-relevant. It is unclear, however, what role task-relevance plays for emotional stimuli in emotional conflict processing. In two EEG Experiments we compared the influence of task-relevance of emotional stimuli in cognitive and emotional conflict processing. In order to maximally approximate real-life processes and to elicit robust neural responses, we used multisensory stimuli. Participants either categorized spoken vowels ('A' and 'O', cognitive conflict) or their emotional valence (emotional conflict), irrespective of congruence with visual information. The results revealed that emotion facilitates both cognitive and emotional conflict processing, as reflected in a reduced RT conflict effect for emotional relative to neutral trials. In contrast, we observed a conflict-specific reversal of the N100 response in the event-related potentials: the conflict effect was enhanced for emotional compared to neutral trials in cognitive conflict and reduced in emotional conflict. These results reflect ERP modulations of domain-specific conflict processing. Additionally, domain-general conflict effects were observed in the P200 and the N200 responses. Emotional stimuli receive prioritized processing due to their motivational relevance and facilitate conflict processing. However, neuropsychological mechanisms underlying facilitation of cognitive and emotional conflict processing may differ.

POSTER B-22

WHAT SYMPATHETIC RESPONSES CAN TELL ABOUT CHILDREN'S PERFORMANCE IN READING

Salah M. Taamneh¹, Dvijesh Shastri², Debra Currie¹, Malcolm Dcosta¹, & Ioannis Pavlidis¹

¹University of Houston, ²University of Houston-Downtown

Descriptors: EDA, reading performance, developmental ages

We investigated the relationship between reading performance and sympathetic responses in developmental ages. We recruited 20 children (10 M / 10 F; mean age = 9.44 and SD = 1.33). First, we asked each child to fill out a questionnaire about her/his perceived reading skill. Next, we determined the reading level for each child. Finally, we asked each child to read for six minutes words at her/his level (Baseline Reading, BR) and for six minutes words at two levels above BR (Difficult Reading, DR). During reading we recorded electrodermal activity (EDA) responses via a wearable EDA sensor attached to the child's non-dominant hand. We quantified the relative reading performance between the two reading tasks for each child, thus, dividing the cohort to good performers (n=10) and poor performers (n=10). We also quantified the differential EDA response between the two reading tasks for each child. The results demonstrate that all poor performers exhibited significantly greater sympathetic responses during DR with respect to BR (p<0.05). One good performer who misunderstood the instructions and three good performers, who underestimated their reading proficiency per the self-assessment questionnaire, exhibited the same sympathetic pattern as the bad performers. Hence, sympathetic responses not only can be used in assessing reading performance in developmental ages, but also could uncover the internal cost of low self-esteem in reading tasks.

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POSTER B-23

MAKING MEANING: SOCIAL ISOLATION, LONELINESS, AND POSITIVE SYNDROME IN THE SCHIZOPHRENIA SPECTRUM

Laura L. Hieber¹, Jejoong Kim², & Sohee Park¹

¹Vanderbilt University, ²Duksung Women's University

Descriptors: schizophrenia, loneliness, positive syndrome

Social withdrawal is a prominent feature of schizophrenia (SZ), along with hallucinations and delusions of social and emotional nature. However, a causal relationship between these symptoms has not been elucidated. Hoffman's social deafferentation hypothesis (SDH, 2007) posits that delusions emerge in vulnerable individuals when prolonged social isolation triggers over-activation of the social brain network, thus fabricating social meaning. Increased tendency for SZ patients to falsely "detect" social meaning in randomness has been previously observed in biological motion (BM) perception studies using point-light displays (Kim et al, 2011). We hypothesized that social isolation and loneliness would exacerbate deficits in social perception as assessed by BM tasks, and testing the effects of isolation and loneliness on false detection of social stimuli. Study 1 manipulated social inclusion/exclusion in healthy participants (n=60) and found that exclusion impaired efficient detection of social information from BM group (t(54)=2.64, p= 0.01). Moreover, increased schizotypal traits were associated with loneliness (rs =0.58, p < .0001). Study 2 examines the relationship between social isolation and false detection of BM in SZ. Preliminary results indicate a weak association between BM accuracy and loneliness (rs = -0.40, p = .09). Chronic loneliness may play a more significant role in social perceptual accuracy than acute manipulations of social isolation. Future intervention efforts should address the adverse impact of loneliness on social cognitive processes and outcome in SZ.

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POSTER B-24

EMOTION REGULATION IN THE MIDDLE SCHOOL YEARS: PROBLEM BEHAVIORS OR EMOTION DISORDERS?

Lysandra Sinclair-Harding & David Whitebread

University of Cambridge

Descriptors: emotion regulation, psychophysiology, childhood mental health

Sustained exposure to threatening environments may alter the biological stress response and produce deficits in a child's ability to effectively regulate their emotions (Gunnar & Quevedo, 2007). Early established patterns of emotion regulation (ER) may appear maladaptive or disordered in normative environments, (e.g. at school, McCrory et al., 2010) and are not well explained by laboratory studies. In particular, under-controlled negative emotion is linked to problematic externalizing behaviors, whilst over-control is associated with greater internalizing problems. What are the physiological indices underpinning ER behaviors that unfold across childhood? 128 participants (aged 7-9) from five different UK primary schools were observed during two collaborative LEGO construction tasks. Skin conductance data were combined with observation data and compared to self-reports of ER strategies and teacher-reports of child emotional and behavioral tendencies. We tested 1) whether children with higher levels of physiological reactivity demonstrate more maladaptive response-focused strategies; 2) if participants with low physiological reactivity employ more adaptive ER strategies. Preliminary results support both hypotheses. Teacher-reported emotional problems are correlated with skin conductance lability (p<0.01). Prosocial behaviors are related to lower physiological reactivity (p<0.05). These findings will be discussed alongside observational data, shedding light on the regulatory strategies that underpin emotional and behavioral problems on display in the classroom.