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Introduction: Individuals with autism spectrum condition (ASC) frequently report difficulties in social communications, combined with restricted inflexible behaviors. However, it is unclear whether this rigidity is pervasive across cognitive flexibility (CF) and affective flexibility (AF) in situations which resolve different social conflicts.

Objectives: To study CF and AF levels and associated brain activity in individuals with ASC.

Methods: Individuals with ASC and with typical development (TD) performed a moral dilemma task during functional magnetic resonance imaging. For CF, participants made decisions on (1) whether to enforce result-oriented actions to prioritize social/public benefits; and (2) judged whether these actions are right or wrong. For AF, participants made decisions on (1) whether to permit social norm/rule violations in sympathy-evoking situations; and (2) permit these identical violations in no sympathy-evoking situations. We calculated participants' CF/AF levels by computing the switching-rate of decisions in CF/AF sessions (switching was defined as: CF, judging the actions as wrong but choosing to enforce the action in the same vignette; AF, judging the violations as not permissible in a no sympathy-evoking circumstance, but permissible in a sympathy-evoking circumstance).

Results: For CF, ASC participants showed a marked decrease in CF switching-rates compared to TD participants ($p < 0.05$), and in corresponding brain activity for executive functioning. For AF, although the AF switching rate difference was non-significant, we observed unique brain activities in each group (e.g., TD activation of the greater dorsomedial-prefrontal cortex and ASC activation of the cingulate cortex).

Conclusions: Our results suggest ASC inflexibility may be further characterized by both CF and AF.

Disclosure: No significant relationships.

Keywords: flexibility; decision making; autism; fMRI

EPV0400

Functional connectivity alterations between default mode network and occipital cortex in patients with obsessive-compulsive disorder (OCD)

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Introduction: A meta-analysis by Gürsel et al. (2018) found altered functional connectivity in OCD patients within and between default mode (DMN), salience (SN), and frontoparietal networks (FPN), as well as evidence for aberrant fronto-striatal circuitry.

Objectives: Testing the replicability of meta-analysis rsfMRI findings in OCD patients.

Methods: We measured functional connectivity during resting-state fMRI in a sample of OCD patients (n=24) and controls matched for age and sex (n=33). The CONN toolbox implemented in SPM was used to perform seed-to-voxel analysis using 30 seed regions based on the previous meta-analytic findings.

Results: OCD patients showed reduced functional connectivity between SN and DMN compared to controls, replicating previous findings. We did not observe significant group differences of functional connectivity within the DMN, SN, or FPN. The strongest finding consisted of altered connectivity between DMN and SN to the visual network. OCD patients showed reduced functional connectivity between the left lateral parietal seed (LPI) and the inferior lateral occipital pole left (iLOCL) compared to controls. Furthermore, the LPI was found to be hyperconnected with the right superior lateral occipital cortex (sLOCr) and the right precuneus. This finding was positively correlated to OCD symptom severity, especially compulsions.

Conclusions: Our findings replicated partly the meta-analysis findings, specifically reduced connectivity between SN and DMN. Using seeds based on the meta-analysis, we identified aberrations between the SN and, in particular, the DMN to the visual network. This raises the question about the visual system's involvement in OCD symptoms and the abnormal connectivity of a unimodal region to the multimodal DMN.

Disclosure: No significant relationships.

Keywords: neuropsychiatry; functional-connectivity; DMN_Visual-Network; ocd

EPV0401

Effects of acute stress on probabilistic reversal learning in healthy participants

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Introduction: Altered reward-based learning and stress play an important role in psychiatric illnesses, such as psychosis or addiction. Stress sometimes increases learning from rewards, other times it does not show an effect (Starcke & Brand, 2016). A task addressing reward-based learning is the reversal learning task, which uses probabilistic rewards as feedback and incorporates sudden changes in reward contingencies. The effects of acute stress on reversal learning have rarely been addressed.

Objectives: Here, we investigated the effect of acute social stress in a within-subject design in healthy participants.

Methods: A sample of n = 28 male non-clinical participants performed the task in a control condition versus the Trier Social Stress

Test (TSST), a validated method to induce psychosocial stress. In our version of the reversal learning task (Reiter, 2016), participants choose between two anti-correlated stimuli in order to obtain rewards in three blocks. Reward contingencies remain stable for the first 55 trials and the last 35 trials. During the second block, in between the stable blocks, four changes of reward contingencies require participants to flexibly adapt their behavior. Performance was measured in correct responses, switches after losses and wins.

Results: Cortisol and subjective stress responses showed that the stress induction was successful. Preliminary analyses showed no significant effect of stress induction on any of the performance measures.

Conclusions: These results demonstrate that reversal learning, at least regarding overall performance measures in our task, is robust to stress-related changes. Modeling and fMRI analyses could yield further insights into more subtle changes after stress induction.

Disclosure: No significant relationships.

Keywords: stress; reward; learning

EPV0402

Face sensitivity: Effects of gender and orientation

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Introduction: Research on face tuning is of particular relevance during the Covid-19 pandemic leading to social isolation and anxiety, but also requiring social integrity. Face sensitivity represents an essential component of social competence. This ability is aberrant in most neuropsychiatric conditions. Studies in typically developing individuals enable to develop new tools for examination and better understanding non-verbal social cognition in neuropsychiatry.

Objectives: Here we used a novel set of Face-n-Thing images to address the following issues: (i) whether the ability to seeing faces in non-face images (face pareidolia) is affected by gender; and (ii) whether it is altered with changing display orientation. The main advantage of Face-n-Thing images is that face tuning occurs without being explicitly fostered by familiar elements.

Methods: A newly developed Face-n-Thing task, on which images were shown either with canonical upright orientation or inverted 180° in the image plane, was administered to healthy females and males. On each trial, they have to indicate whether they have a face impression.

Results: Face impression was substantially impeded by display inversion in both males and females. With upright display orientation, no gender differences were found, whereas with inversion, Face-n-Thing images elicited face impression in females significantly more often.

Conclusions: The findings open a way for examination of face sensitivity and underwriting brain networks in neuropsychiatric conditions, most of which are gender-specific. Display inversion represents a proper control for face tuning in neuroimaging studies. Gender differences should be taken into account when conceiving studies in neuropsychiatric populations.

Disclosure: No significant relationships.

Keywords: Non-verbal social cognition; Gender differences; Face sensitivity

EPV0403

Bonds between body, face, and eyes reading

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Introduction: Covering our faces with masks, due to COVID-19 pandemic safety regulations, we can no longer fully rely on the social signals we are used to. We have to read what's between the lines. This is already difficult for healthy individuals, but may be particularly challenging for individuals with neuropsychiatric conditions.

Objectives: Our main goal was to examine (i) whether capabilities in body and face language reading are connected to each other in healthy females and males; and (ii) whether capabilities to body/face language reading are related to other social abilities.

Methods: Healthy females and males accomplished a task with point-light body motion portraying angry and neutral locomotion along with a task with point-light faces expressing happiness and anger. They had to infer emotional content of displays. As a control condition, perceivers were administered with the RMET-M (Reading the Mind in the Eyes Test, Modified) with static images.

Results: Females excelled on inferring emotions from body locomotion. Moreover, only in females, inferring emotions from body and face were firmly linked, whereas in males, face reading was connected to performance on the RMET-M.

Conclusions: The outcome points to gender-specific modes in social cognition: females rely upon merely dynamic cues in facial and bodily displays, whereas males most likely trust configural information. The findings are of value for investigation of face/body language reading in neuropsychiatric conditions, most of which are gender specific.

Disclosure: No significant relationships.

Keywords: Non verbal social cognition; Body language; Face language; Gender

EPV0404

Impairments in theory of mind following traumatic brain injury: A systematic review

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Introduction: Theory of Mind (ToM) enables one to reflect upon the thoughts and emotions of others and oneself. Brain damage can