matrices, we computed cross-paradigm connectivity (CPC) using principal component analysis. These CPC matrices quantify shared connectivity patterns across all paradigms for each individual and thus represent state-independent “trait” network architecture of each subject. The polygenic risk scores (PRSs) for each subject were calculated based on the genome-wide association study (GWAS) results from the Psychiatric Genomics Consortium. The scores were calculated as the sum of genome-wide risk alleles for each individual, weighted by the corresponding odds ratios to schizophrenia. We report our main findings based on the GWAS-significant threshold (P = 5 × 10^{-8}). In addition, to test the robustness of our findings, we also calculated PRSs with a set of other thresholds ranging from 5 × 10^{-7} to 5 × 10^{-2}.

The network-based statistic (NBS) analysis was performed to associate PRSs with CPC matrices with age, sex, and head motion were included as covariates. Significance was determined by 10,000 permutations of the original sample. The validation sample included 44 patients with schizophrenia, 43 patients with bipolar disorders, 34 patients with attention deficit hyperactivity disorder, and 77 healthy controls drawn from the Consortium for Neuropsychiatric Phenomics (CNP). All subjects completed a battery of seven (fMRI) paradigms. We used this sample to examine 1) whether the identified connectomic findings were specifically detected in patients with schizophrenia; and 2) whether these findings could be related to behavioral deficits in patients with schizophrenia.

**Results:** In the HCP sample, the NBS analysis revealed a significant association (PFWE < 0.05) between schizophrenia PRS and a large-scale network involving a total of 69 edges connecting between 54 nodes. These nodes were predominantly distributed in the brain’s visual system, default-mode system, and frontotemporal system. Specifically, higher PRSs were associated with lower connectivity for all connections in the identified network (R = -0.37). The results were significant across all paradigms (R < -0.13, P < 0.001) and remained robust across multiple PRS thresholds (R < -0.10, P < 0.02). In the CNP sample, the connectivity of the detected network differed significantly between groups (P = 0.005), which was particularly driven by decreased connectivity in patients with SZ compared with that in HC’s (PBonferroni = 0.03). The connectivity of the identified network was significantly correlated with both performance IQ (R = 0.28, P = 0.002) and verbal IQ (R = 0.29, P = 0.001).

**Discussion:** These findings provide the first evidence for state-independent connectome-wide associations of schizophrenia polygenic risk at the system level and suggest that disrupted integration of sensori-cognitive information may be a hallmark of genetic effects on the brain that contributes to the pathogenesis of schizophrenia.

O2.5. CORTICAL PATTERNING OF ABNORMAL MORPHOMETRIC SIMILARITY IN PSYCHOSIS IS ASSOCIATED WITH BRAIN EXPRESSION OF SCHIZOPHRENIA-RELATED GENES

Abstract not included.

O2.6. DELUSIONS ASSOCIATED WITH ABNORMAL FRONTOSTRIATAL EFFECTIVE CONNECTIVITY IN A SPECTRAL DCM ANALYSIS OF RESTING STATE FMRI

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**Background:** Delusions, false beliefs held in the face of disconfirming evidence, are a prevalent and highly distressing feature of psychotic disorders. The neurobiology of delusions remains unknown but recent evidence suggests a role for abnormal prediction error neural signaling. Prediction error is neurocognitive process in which the brain signals the need to update beliefs when presented with information that disconfirms expectations. Task based neuroimaging studies have identified delusional beliefs correlate with altered activation in frontal and subcortical brain regions during prediction error, though such work is limited in scope. In a large sample of transdiagnostic psychotic patients we modeled the resting state effective connectivity of the delusion-associated prediction error (D-PE) circuit.

**Methods:** Resting state fMRI was obtained from 289 psychotic subjects (schizophrenia, schizoaffective disorder, bipolar disorder with psychotic features) and 219 healthy controls, recruited as part of the multisite Bipolar & Schizophrenia Network on Intermediate Phenotypes (BSNIP1) study. Neuroimaging data were processed using CONN software with strict quality control criteria. Five D-PE regions of interest (ROIs) were created based on peak coordinates from published task-based prediction error fMRI studies: right dorsolateral prefrontal cortex [r DLPCF], r Ventrolateral prefrontal cortex [r VLPFC], r Caudate, l Caudate and l Midbrain. In each subject the first eigenvariate was extracted from the rs-fMRI timeseries of each D-PE ROI. Spectral Dynamic Causal Modeling (spDCM) was performed on a fully connected model of the 5 ROIs. Parameters for the full model were fit using Parameter Empirical Bayes (PEB) and then passed to the group level where they were reduced using Bayesian Model Averaging (BMA). The association of effective connectivity with current delusional severity was tested using PEB-BMA controlling for antipsychotic medication, sex, age and scanner site. Significant effective connectivity was identified as parameters with free energy evidence greater than 95% probability. Additionally, we assessed the effective connectivity differences of this circuit between psychotic probands and healthy controls.

**Results:** Greater delusional severity was significantly associated with inhibition of the r Caudate by the r VLPFC, excitation of the r DLPCF by the l Caudate, and decreased self-inhibition of the r VLPFC and r DLPCF. Effective connectivity of the D-PE network in psychotic probands compared to healthy controls was associated with inhibition of the r Caudate by the r VLPFC, the r DLPCF by the l Midbrain, the l Midbrain by the r Caudate, and decreased self-inhibition of the r Caudate, r VLPFC, and r DLPCF.

**Discussion:** We found that resting state effective connectivity of the prediction error circuit is disrupted in psychotic subjects experiencing delusions. Specifically, delusion severity was associated with both increased bottom-up and decreased top-down frontostriatal connectivity along with greater disinhibition of the r VLPFC and r DLPCF. These effective connectivity results provide novel insight into the causal paths which may underlie delusion neural circuitry. This provides further evidence that dysconnectivity of prediction error system is a biomarker of delusions in psychosis. Furthermore, these transdiagnostic results implicate frontostriatal dysconnectivity as common neuropathology in delusions.

O3. Oral Sessions: Biomarkers/ Symptoms

O3.1. CLUSTER ANALYSIS FINDS THREE CLINICALLY-RELEVANT SUBGROUPS OF TRAIT EMOTIONAL EXPERIENCE IN SCHIZOPHRENIA OUTPATIENTS

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**Background:** Previous research shows that trait emotion is more affected than state emotion in schizophrenia. This literature is also somewhat inconsistent, particularly in terms of specific links between affective traits and clinical symptoms. The current study examined whether subgroups of...
O3.2. ROBOT-INDUCED MILD HALLUCINATIONS AND PASSIVITY EXPERIENCES IN INDIVIDUALS WITH THE 22Q11.2 DELETION SYNDROME

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Background: The 22q11.2 deletion syndrome (22q11DS) represents one of the highest genetic risk factors for developing schizophrenia. About 30% of individuals develop symptoms like hallucinations, thought disorders, passivity symptoms or loss of agency. These symptoms could be driven by abnormal sensorimotor predictions associated with the misattribution of self-related events to external sources (Frith, 2005). We developed a robotic device altering sensorimotor processing in healthy subjects and inducing mild to moderate hallucinations (presence hallucinations - PH) and passivity experiences (Blanke et al., 2014). Using this new device and procedure, we tested the sensitivity of individuals with 22q11DS to sensorimotor conflicts provided by the robot and their proneness in experiencing robot-induced PH and related passivity experiences as compared to healthy controls.

Methods: Thirty-eight individuals with 22q11DS and 21 controls moved, with the hand, a robotic device placed in front of them. A second robot placed behind them reproduced their movements, thus delivering tactile feedback on their back either synchronously (0ms between the movement and the touch, sync) or asynchronously (delay of 500ms, async) (Blanke et al., 2014). Participants rated the strength of robot-induced PH, passivity experiences that they felt during robot manipulation, and control items. Occurrence and severity of clinical symptoms were assessed.

Results: Subjective ratings following robot manipulation were analysed, and age was used as covariate. In the asynchronous condition, participants reported significantly stronger loss of agency over their hand movements and there was a trend towards a significant interaction between group and conditions for loss of agency with control subjects experiencing more loss of agency in the asynchronous condition than 22q11DS participants. A trend for significance was also observed whereby all subjects reported stronger PH in the asynchronous condition than in the synchronous condition. No significant group effect was observed for the subjective ratings associated with the robot manipulation. For the 22q11DS group, severity scores for items of unusual thought content/delusional ideas of the Structured Interview for Prodromal Syndromes positively and significantly correlated with ratings of robot-induced PH and loss of agency in the async condition. Passivity experiences during the async condition (i.e., the subjective impression that someone else was touching their back) significantly correlated with severity scores for perceptual abnormalities/hallucinations items.

Discussion: Experimental induction of sensorimotor conflicts caused mild altered mental states in individuals with 22q11DS as reported for controls. Both 22q11DS and control groups showed more sensitivity to the asynchronous condition during which they perceived loss of agency and passivity over their own actions, suggesting that the robotic stimulations disrupted self-other demarcation. In 22q11DS individuals, induced-PH, passivity experiences and loss of agency felt during the robot manipulation was associated to unusual thought content and abnormal perception. Taken together, our results suggest that 22q11DS is an interesting model to study the development of prodromal signs of psychosis at a very early stage before the onset of schizophrenia.

O3.3. DO DEPRESSIVE SYMPTOMS MEDIATE THE RELATIONSHIPS BETWEEN SUICIDAL IDEATION AND PSYCHOTIC EXPERIENCES IN ADOLESCENTS?

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Background: Youth mental health is a global challenge, with onset of mental illness peaking in adolescence. In this population, depressive symptoms (DS), psychotic experiences (PE) and suicidal ideation (SI) are prevalent and risk factors for future mental disorders. DS could mediate relationships between psychotic experiences (PE) and suicidal ideation (SI); however, its precise role in this association remains uncertain. We examined whether depressive symptoms mediate the association between psychotic experiences and suicidal ideation using two complementary approaches to cross-sectional data from a community sample of adolescents. We hypothesized that DS mediate relationships between PE and SI. Additionally, we expected to find that specific DS would play a central role in this association and that this would show via higher centrality values for affective symptoms reflecting low energy, hopelessness and self-depreciating feelings in the network analyses.

Methods: We examined cross-sectional relationships between PE, SI and DS in a community sample of adolescents (N= 1715; 13–19 years old) recruited from Chilean secondary schools between April and August 2015. We addressed depressive symptoms (DS) using the Depression and Anxiety Scale (DASS-21). We assessed suicidal ideation using 6 items of the Columbia Suicide Severity Rating Scale (C-SSRS), adapted for being used as a self-report questionnaire. We addressed psychotic experiences (PE) by items of two pre-existing scales we adapted in prior studies with adolescents: the Community Assessment of Psychic Experiences - Positive scale (CAPE-P15), and the Brief Self-report Questionnaire for Screening Putative Pre-psychotic States (BQSPS). We first conducted a mediation analysis, where PE was the predictor, SI was the outcome, and DS were the mediator variables. Next, we performed a network analysis and estimated the strength centrality index for each symptom, and the network robustness through accuracy and stability test.

Results: Pearson's correlations showed significant associations between all the variables in (SI-DS: r= .491, p<.001; PE-SI: r= .436, p<.001; PE-DS: r= .617, p<.001). No demographic variables (i.e gender, age) had to be controlled for in the mediation.