scan, in other words, at a given moment t we took the value of each independent component into account. In this sense, a specific mental state pattern is considered as a pattern of activation at a moment t. The next step was to perform a correlation of the mental state pattern of the moment t with all the subsequent scans (t+1, t+2... t+x). A cutoff of 0.5 in the correlation map was used to define mental state similarity. Based on that correlation map (a 0/1 matrix), we were able to calculate how long a given mental state was lasted, the variance of this duration (mental state variability) and the recurrence of a given pattern of activation (mental state recurrence). In the second mental state analysis, we repeated the same methodology but for each network class to explore if the differences observed in general mental state duration, variability and recurrence are related to specific network classes.

**Results:** No difference was observed regarding mental state duration among the different groups. However, we found a significantly higher variability of mental state duration in patients with schizophrenia when compared to both, healthy (p=0.037) and bipolar individuals (p=0.032). The results regarding mental states related to specific networks show a higher duration variability of mental states in schizophrenia for subcortical (p=0.044 compared to controls; p=0.022 compared to Bipolar patients), visual (p=0.049 compared to bipolar patients) and insular (p=0.005 compared to controls) networks. Regarding the recurrence of mental states, we observed a significantly higher recurrence of DMN (p=0.042 compared to schizophrenia patients) and insular (p=0.023 compared to controls) networks in patients with bipolar disorder.

**Discussion:** The insular network seems to be involved in both pathologies. In patients with schizophrenia it is characterized by an increased variability, and in patients with bipolar disorder by a higher recurrence of mental states. Results are still preliminary, but it is tempting to interpret the difference in mental state variability observed in schizophrenia patients as a correlate of their subjective mental fragmentation. The increased recurrence of mental states observed in patients with bipolar disorder might be related to the ruminations observed in patients.

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**F77. HABITUATION DEFICITS ARE ASSOCIATED WITH RELATIONAL MEMORY IMPAIRMENT IN THE EARLY STAGE OF PSYCHOSIS**

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**Background:** Learning and memory are impaired in schizophrenia. However, little is known about a highly conserved form of memory—habituation, the reduced response to repeated exposures to a stimulus—in schizophrenia. Preliminary evidence indicates failed hippocampal habituation is associated with memory impairments in chronic schizophrenia patients. Here, we used a targeted analysis to investigate the regional specificity of hippocampal habituation failure and associations with relational memory in the early stage of psychosis.

**Methods:** We measured hippocampal activity in 62 patients in the early stage (< 2 years following index episode) of non-affective psychosis and 70 demographically-similar healthy control participants using fMRI. Participants viewed two repeated neutral face blocks followed by two repeated neutral objects block. Habituation slopes in the anterior and posterior hippocampus were calculated following initial novelty response, during the first block of each stimulus category. We tested for main effects of habituation and between-group differences. Outside the scanner, participants completed a relational memory task where eye movements were recorded to assess memory for face-scene pairs. We used Spearman correlations to test for relationships between relational memory performance and hippocampal habituation. Familywise error adjusted p-values were calculated using permutation testing.

**Results:** Habituation of the anterior hippocampus during viewing of repeated objects was significantly decreased in early psychosis patients (F1, 131 = 7.51, p = 0.01). In contrast, habituation in the posterior hippocampus was similar between groups, resulting in a group by region interaction (F1, 131 = 7.11, p = 0.008). Relational memory was better in healthy control subjects than early psychosis patients (F1, 113 = 22.31, p < 0.001) and was associated with faster anterior hippocampal habituation.

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**F76. ALTERED PARAHIPPOCAMPAL GRYUS ACTIVATION AND ITS CONNECTIVITY WITH RESTING-STATE NETWORK AREAS IN SCHIZOPHRENIA: A QEEG STUDY**

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**Background:** Neural oscillations at rest are responsible for coordinating synchronized and coherent activity during normal brain functioning. Schizophrenia is reported as a disconnection syndrome, therefore, neural oscillations and their synchrony are a crucial target to understand the pathophysiology of schizophrenia. Many researchers have reported consistent findings of augmented low frequency power in delta and theta bands and reduced high frequency activity during rest in patients with schizophrenia. Disturbances in neural oscillations could be assessed by QEEG as an endophenotypic and state marker for early detection and management strategies in asymptomatic first-degree relatives of patients as well.

**Methods:** Thirty-two patients with schizophrenia (18–45 years, DSM-5 criteria), 28 first-degree relatives and 31 healthy controls participated in the study. Brain activity during eyes closed condition was recorded using 128 channel EEG. After pre-processing and independent component analysis (ICA), an equivalent current dipole was estimated for each independent component (IC). Total of 1551 independent and localizable EEG components across all the groups were used in subsequent analysis. ICs were clustered by applying K-means algorithm using dipole locations, help maps and power spectrum. Power spectral density was computed using ‘spectopo’ function. Nonparametric permutation-based statistical method was applied in conjunction with the cluster correction (max method) with p-value < 0.05 to avoid the issue of multiple comparisons. Source coherence was calculated between IC clusters using ‘newcrossf’ function.

**Results:** ICs were clustered into 19 clusters and 131 components were identified as outliers. 12 clusters were excluded from further analysis because they were comprised of components from less than half the total number of participants from each group and had insignificant difference between the groups on permutation tests. Seven clusters were analyzed further for group differences. Dipole locations of the cluster centroids for the clusters identified across groups at rest were right insula, left parahippocampal gyrus, cingulate gyrus, left insula, left anterior cingulate and left posterior cingulate. Patients with schizophrenia and first-degree relatives displayed significantly higher power spectral density than healthy controls for all the frequency bands at left parahippocampal gyrus (-7, -26, 8; BA 27). Patients with schizophrenia showed significantly lower power spectral density compared to first-degree relatives and healthy controls in gamma and alpha, beta and gamma frequency bands, at left parahippocampal gyrus (-4, -28, 1; BA 27). Functional connectivity was found to be decreased in patients and increased in relatives compared to healthy controls between different resting-state network areas.

**Discussion:** Hyperactivity and hyperconnectivity in first-degree relatives compared to healthy controls can be considered as default mode and resting-state network suppression deficit at rest signifying familial vulnerability to schizophrenia suggestive of a compensatory response. Therefore, aberrant power and functional connectivity in default mode and resting-state network areas in patients with schizophrenia and their first-degree relatives can serve as endophenotypic and state markers of schizophrenia respectively.