how construction of internal models of the environment are utilized unconsciously and automatically in uncertain circumstances to predict and disambiguate perceptual inputs and guide decisions in schizophrenia.
Methods: We used a random dot kinematogram algorithm developed by Roitman & Shadlen (2002). In the first experiment (PSZ,N=47, Controls,N=38), we used 4 (20–100%) motion coherence levels and 2 motion durations (500 and 1000 ms). On each trial, direction of motion was selected randomly from 0.1 - 360°. Second, to test perceptual inference when motion direction changes, we implemented a similar task (PSZ, N=44, Controls=36) using 2 coherence levels (35% and 100%) in which, midway through the trials, motion direction changed by 90°. In both tasks, participants were to report the direction perceived at the end of the trial (the changed direction for the second task) using a mouse to align a bar onto the perceived direction of motion. Performance was quantified as the angular difference between the true direction and the reported direction. We quantified response errors using a three-component mixture model, assuming that participants' direction reports were a combination of 1) correct perception of motion direction with some precision, 2) random guesses, and 3) opposite direction perception of the true motion direction. Further, we derived response bias estimates based on (i) influence of the prior trial when the current trial was of low coherence and (ii) initial motion direction (in the motion change experiment).
Results: We observed that in both tasks, precision estimates decreased with reducing coherence, and more so in PSZ, and guess rate estimates were higher in PSZ across all coherence levels. Importantly, we found that when the current trial was of a lower coherence level than the prior trial, the perceived motion direction in PSZ was influenced by the prior trial motion direction, as evidenced by a significantly greater response bias towards the prior than in controls. Further, in PSZ, this response bias correlated with mean precision estimates across low coherence trials. In the changed motion estimation task, we observed a similar pattern, whereby PSZ manifested lower precision estimates, and more so on low coherence trials, and this was associated with response bias towards initial motion direction. Interestingly, in PSZ, response bias measures (towards the prior) were associated with the preoccupation and conviction dimensions on the Peters Delusions Inventory, while precision measures were associated with visual hallucinations.
Discussion: These results suggest that, in situations of uncertainty (in this case, low coherence trials), PSZ are more influenced by prior expectation and sensory evidence from the previous trial to discriminate new perceptual inputs and to guide decisions. These data also provide further evidence for the theoretical link between positive symptoms such as hallucinations and delusions and aberrant perceptual inference.

S42. NEUROANATOMY OF EMOTIONAL PROCESSING AND IMPACT ON CLINICAL OUTCOMES IN SUBJECTS AT HIGH RISK OF PSYCHOSIS

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Background: The development of adverse clinical outcomes in psychosis has been associated with behavioral and neuroanatomical changes related to emotional processing (Aleman & Kahn, 2005; Philips & Seidman, 2008). However, the relationship between emotional processing deficits and neuroanatomy in subjects at clinical high risk of psychosis (CHR), and their relationship to longitudinal outcomes, remains unclear. The primary aim of the present study was to investigate the association between facial emotional recognition and grey matter volume (GMV) in a large cohort of CHR individuals compared to healthy controls, and their relationship with subsequent clinical outcomes.
Methods: Structural imaging scans at 3T and a computer-based measure of emotional processing (Degraded Facial Affect Recognition task, DFAR), were collected at baseline from 53 healthy controls (mean age: 23.3 SD ± 3.9; 52.8% male) and 213 CHR subjects (mean age: 22.9 SD ± 4.7; 50.7% male) participating in the multi-centre EU-GEI study (data pooled from 9 sites). CHR subjects were then clinically monitored for 12 months and clinical outcomes were assessed in terms of transition/non-transition to psychosis (CAARMS criteria) and the level of overall functioning (Global Assessment of Function scale; GAF). Structural images were preprocessed with voxel-based morphometry in SPM12. DFAR performance (total, happy, angry, fear and anger) was analyzed with repeated measures ANOVA at baseline (HC/CHR as between-group factor and DFAR as within-subject factor, adjusted for age, gender, IQ and site); and with binary logistic regression at the 12-month follow-up point (adjusting for the same variables). One-way ANOVAs in SPM12 were specified to examine interactions between group status (HC/CHR, CHR-T/CHR-NT, CHR-GO/CHR/PO) and DFAR performance (total, happy, angry, fear and anger), adjusting for the same variables. Statistical inferences were made at $p<.05$ after voxel-wise FWE correction within four pre-defined anatomical regions of interest (ROI: amygdala, hippocampus, insula, anterior cingulate cortex/medial prefrontal cortex -ACC/MPFC-).
Results: At baseline, DFAR performance did not differ between HC and CHR groups and was not significantly associated with GMV in our ROIs. At the 12-month follow-up point, 39 CHR subjects showed good overall functioning (GAF≥65), whereas 93 CHR subjects had a poor functional outcome (GAF score<65); 44 CHR subjects developed a psychotic disorder and 169 did not. Compared to subjects with a good functional outcome, CHR subjects with poor overall functioning showed exacerbated recognition of angry facial emotion (p=.030), decreased GMV in ACC and hippocampus (both p=.033 FWE), and a significantly different (inverse) association between angry facial emotion recognition and hippocampal volume compared to CHR subjects with good functioning (p=.037 FWE). CHR subjects who developed psychosis did not show significant differences in DFAR performance or significant associations between DFAR and GMV compared with CHR subjects who did not become psychotic.
Discussion: These findings indicate that adverse global functional outcomes in people at CHR of psychosis (but not transition to psychosis) are associated with baseline deficits in the recognition of angry facial emotion, which are in turn directly related to hippocampal volume decreases compared to CHR subjects with good functional outcomes. This has implications not only for stratification of CHR subjects according to baseline behavioral and volumetric characteristics, but also suggest potential preventative avenues for poorer outcomes focused on social cognitive and emotional processes.

S43. SADDER BUT WISER: DEPRESSION OUTWEIGHS SEX AND SCHIZOPHRENIA IN SELF ASSESSMENT OF INTERPERSONAL FUNCTIONING

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Background: Impairments in social functioning are central features of Schizophrenia (SCZ). Patients with SCZ also have challenges in self-assessment and the ability to evaluate their own level of functioning across cognitive, social cognitive, and functional domains. One of the major correlates of self-assessments in schizophrenia is depression, wherein patients who have very low levels of self-reported depression over-estimate their functioning when compared to objective milestone data and reports of