releases dopamine, results in decreased 11C-Raclopride or 123I IBZM binding to striatal dopamine D2 receptors. This pharmacologic challenge methodology has recently been applied by research groups to patients with schizophrenia, depression and Parkinson's disease. The detection of dopamine release by behavioural manipulation, however, is relatively unexplored. In vivo techniques in animals suggest dopamine release may occur during behavioural paradigms involving motor learning, novelty, stress and reward. Our recent studies have attempted to index dopamine release as a result of behavioural manipulations in man. For example, using a dual scan approach with 11C-Raclopride subjects (n = 8) were studied playing a video game involving motor learning, novelty and reward. Compared to a baseline condition, the striatal binding potential of 11C-Raclopride was significantly reduced (mean change ventral striatum −13%) during the video game condition (ANOVA F7.72, P < 0.01) suggesting that dopamine had been released. Furthermore, there was a significant positive correlation between performance on the game and 11C-Raclopride displacement which was greatest in the ventral striatum (r = 0.86, P = 0.017). These results suggest this cognitive challenge methodology may enable the neurotransmitter correlates of specific cognitive processes to be described.

S54.03
FUNCTIONAL ANATOMY OF AUDITORY HALLUCINATIONS

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We used functional MRI to examine the neural correlates of 1) cognitive processes putatively relevant to auditory hallucinations, and 2) auditory hallucinations themselves. Images were acquired on a 1.5T system and analysed using nonparametric methods. In study 1, patients with schizophrenia who had a history of frequent hallucinations were compared with volunteers. Images were acquired while subjects imagined another person's speech, which entails the implicit generation and monitoring of inner speech. Volunteers engaged a network of areas including the inferior frontal and temporal cortex bilaterally, the SMA, cingulate cortex, and the cerebellar cortex. Patients prone to hallucinations differed from controls in showing attenuated activation in the lateral temporal cortex and fusiform gyrus/cerebellum. Study 2 employed a within-subject event-related design, comparing activity in patients with schizophrenia when they were and were not experiencing auditory hallucinations. Hallucinations were associated with activation in a network that resembled that engaged during imagining speech, except that there was an absence of activation in the SMA and cerebellum, but additional activation in the left parahippocampal cortex, and in the right thalamus and inferior colliculus. These data suggest there is a close relationship between auditory hallucinations and inner speech, and are consistent with the notion that hallucinations represent inner speech which has been misidentified as 'alien' due to defective verbal self-monitoring.

S54.04
A SYSTEM MODEL OF ALTERED CONSCIOUSNESS: INTEGRATING NATURAL AND DRUG-INDUCED PSYCHOSES

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Introduction: Hallucinogenic 5-HT2A agonists (e.g. psilocybin) and dissociative NMDA antagonists (e.g. ketamine) produce psychotic symptoms, cognitive and behavioural deficits associated with schizophrenic psychoses. Hence, exploring the biological mechanisms of psychotomimetic drug actions may provide new insights into the pathophysiology of schizophrenias.

Method: The effects of racemic, S- and R-ketamine and psilocybin on brain activity was investigated in healthy human volunteers using FDGPET and psychometric measures (n = 51). In addition, the effects of the atypical antipsychotic clozapine and the 5-HT2A antagonist ketanserin on S-ketamine- and psilocybin-induced metabolic alterations and behavioural changes were investigated (n = 2 × 10).

Results: Both ketamine and psilocybin produced a marked prefrontal activation and metabolic changes in associated limbic, temporal and parietal regions, and in the basal ganglia and thalamus, pretreatments with clozapine significantly reduced ketamine-induced fronto-limbic hyperactivity and behavioural effects, while ketanserin completely blocked psilocybin-induced metabolic and behavioural changes. A pixel-by-pixel covariance analysis (SPM96) revealed that different psychotic syndromes relate to different neural networks including fronto-parietal, temporal, striatal and thalamic structures.

Conclusion: The results indicate that limbic cortico-striato-thalamic pathways may be a common neural substrate of psychotomimetic drugs and that disturbances within these pathways may result in a deficit thalamic gating which in turn may lead to a sensory overload and psychosis.

S55. Depressive disorders in women

Chair: D. Moussaoui (MA)

S55.01
DEPRESSION IN TUNISIA: ANOTHER GENDER INEQUALITY?

S. Douki. *Tunisia*

No abstract was available at the time of printing.

S55.02
POST-PARTUM DEPRESSION: A PROSPECTIVE STUDY

D. Moussaoui. *Morocco*

No abstract was available at the time of printing.

S55.03
PMS/PMDD: DIAGNOSIS AND TREATMENT

M. Steiner. *Canada*

No abstract was available at the time of printing.

S55.04
PREMENSTRUAL IN THE GENERAL POPULATION: AN EPIDEMIOLOGICAL STUDY

N. Kadiri. *Morocco*

No abstract was available at the time of printing.

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