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DYSFUNCTIONAL IMPULSIVITY IN SCHIZOPHRENIA: A FUNCTIONAL MRI INVESTIGATION

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Introduction: Dysfunctional impulsivity reflects 'recklessness without deliberation and evaluation of consequences' and has negative consequences whereas functional impulsivity reflects 'rapid responding to situational demands in order to maximise one's circumstances' and often has positive consequences (1).

Objective: To examine the functional brain basis of dysfunctional impulsivity in healthy people and in people with schizophrenia.

Methods: Thirteen healthy controls and 21 schizophrenia patients (10/21 with serious repetitive violence) underwent fMRI during a Go/ NoGo task. Dysfunctional impulsivity was indexed using the Impulsiveness subscale and functional impulsivity using the Venturesomeness subscale of the Impulsiveness-Venturesomeness-Empathy questionnaire (2).

Results: Violent patients had elevated Impulsiveness scores relative to non-violent patients and controls. Impulsiveness did not correlate significantly with task performance in healthy controls or patients. Impulsiveness, but not Venturesomeness, scores correlated during the NoGO condition with lower activity in the anterior cingulate (AC) in controls, and lower inferior temporal and hippocampal activity in patients.

Conclusions: These findings accord with previously reported associations between reduced hippocampal volume and dysfunctional impulsivity in schizophrenia (3) and, combined with our earlier observations of reduced AC activation during a working memory task in violent antisocial individuals (4), suggest that the influence of dysfunctional impulsivity in antisocial and criminal behaviour is mediated via deficient (inhibitory) functions of the AC and hippocampus.

(1) Dickman SJ (1990) *J Person Soc Psychol* 58(1): 95-102

(2) Eysenck SBG et al. (1985) *Person Individ Diff* 6:613-619

(3) Kumari V et al. (2006) *Schizophr Res* 84:144-164

(4) Kumari V et al. (2009) *Psychiat Res: Neuroimag* 173(1):39-44