

Correspondence

EDITED BY LOUISE HOWARD

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Commenting on neuroimaging

With regard to Professor Crow's stimulating commentary (Crow, 2000) on our recent paper (Spence *et al*, 2000), we write to correct some errors of fact and interpretation which appeared in his article.

In our paper we demonstrated that during word generation people with schizophrenia exhibited a 'functional disconnection' between neural activity in dorsolateral prefrontal and anterior cingulate cortices relative to controls, as stated by Crow. People with schizophrenia also exhibited relative overactivity of the precuneus compared to controls and those at genetic risk (not only to controls, as stated by Crow).

Crow criticised our choice of an *a priori* hypothesis, based as it was on previous studies of word generation (summarised in Table 1 of our paper). We examined the hypothesis that focal or distributed brain dysfunction might provide a trait marker for schizophrenia, specifically implicating the left superior temporal gyrus, and a proposed frontotemporal 'disconnection' (Friston *et al*, 1995). Crow suggested that we should have specified a dysfunction of right prefrontal cortex, despite the absence of such a finding from previous studies or statistical confirmation of such 'dysfunction' in our data-set. Indeed, despite many papers on the relevance of language to schizophrenia, Crow has never previously hypothesised such a specific region of dysfunction. In fact, although he has provided diagrams of how language 'must' be organised in the brain (e.g. Crow, 1998), it is notable that they exist in isolation from contemporary cognitive neurobiological accounts of the functional anatomy of language; and despite his emphasis on modelling the 'first rank symptoms' of schizophrenia, he has ignored those studies which have specifically addressed the neural correlates of these phenomena (e.g. Spence *et al*, 1997).

Failure to address contemporary developments exposes Professor Crow's theories

to the risk of appearing increasingly anachronistic.

When neuroimaging studies are published in psychiatric journals there is a particular responsibility incumbent on referees to be cautious in their interpretation of these data (Brodie, 1996) and on authors to be rigorous in their application of statistics, lest a false impression be given to clinicians not used to examining such analyses (Spence, 1999). Such responsibilities should also extend to those invited to comment on others' work.

Brodie, J. D. (1996) Imaging for the clinical psychiatrist: facts, fantasies, and other musings. *American Journal of Psychiatry*, **153**, 145–149.

Crow, T. J. (1998) Nuclear schizophrenic symptoms as a window on the relationship between thought and speech. *British Journal of Psychiatry*, **173**, 303–309.

— (2000) Invited commentary on: Functional anatomy of verbal fluency in people with schizophrenia and those at genetic risk. The genetics of asymmetry and psychosis. *British Journal of Psychiatry*, **176**, 61–63.

Friston, K. J., Herold, S., Fletcher, P., et al (1995) Abnormal fronto-temporal interactions in schizophrenia. In *Biology of Schizophrenia and Affective Diseases* (ed. S. J. Watson), pp. 449–481. New York: Raven.

Spence, S. A. (1999) More stringent threshold needed. *American Journal of Psychiatry*, **156**, 803–804.

—, **Brooks, D. J., Hirsch, S. R., et al (1997)** A PET study of voluntary movement in schizophrenic patients experiencing passivity phenomena (delusions of alien control). *Brain*, **120**, 1997–2011.

—, **Liddle, P. F., Stefan, M. D., et al (2000)** Functional anatomy of verbal fluency in people with schizophrenia and those at genetic risk. Focal dysfunction and distributed disconnectivity reappraised. *British Journal of Psychiatry*, **176**, 52–60.

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Further comments on Jerusalem syndrome

We were interested to read the report by Bar-El *et al* (2000), describing the various manifestations of Jerusalem syndrome and

in particular the prediction that the passing of the millennium may have been accompanied by a surge in presentations.

In December 1999, we wrote to over 60 general psychiatrists in the North-Western Region, requesting that they provide details of all of their patients who appeared to be affected clinically by the millennium. A sizeable proportion described having encountered one or more patients within this category, although none reported a noticeable increase in workload. There were no reports of patients with new onset of psychosis in whom content appeared to have been strongly influenced by the millennium. However, a number of patients with established psychiatric disorders were reported to have incorporated millennial themes into their psychopathology. These included patients with psychoses of both schizophrenic and affective types. Examples of delusions with a millennial content included becoming the Messiah, being destined to change the world on New Year's Day and the belief that the world would change irrevocably at midnight. Several patients with psychoses appeared to have taken warnings regarding the 'millennium bug' rather literally, describing this in terms of physical infestation. Non-psychotic conditions, including both affective and personality disorders, also appeared to have been coloured by the millennium, for example, with ruminations and overvalued ideas regarding the effects of the millennium bug and the possibility of breakdown in the running of society in general.

The influence of social and cultural variables on the content of psychopathology is well-recognised (Fish, 1985) and, it would seem, the 'millennium effect' is merely the most recent example. Given our local experience, Bar-El *et al* were right to expect an increase in cases of Jerusalem syndrome over the millennium period.

Bar-El, Y., Durst, R., Katz, G., et al (2000) Jerusalem syndrome. *British Journal of Psychiatry*, **176**, 86–90.

Fish, F. (1985) The content of delusions. In *Fish's Clinical Psychopathology: Signs and Symptoms in Psychiatry* (2nd edn) (ed. M. Hamilton), p. 47. Bristol: John Wright and Sons.

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