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*Psychiatric Bulletin* (1992), **16**, 733–734

## Video news

### *Videotape reviews*

#### **PET: images of brain function in schizophrenia**

Those familiar with television programmes like *Horizon* will recognise the production style of this professional video. Talking heads and images of modern technology are combined with a familiar voice-over to illustrate the use of positron emission tomography or PET in the investigation of the pathophysiology of schizophrenia.

Based on the work of the MRC Cyclotron Unit of the Hammersmith Hospital, the video concentrates on the ability of PET to measure regional cerebral blood flow as an indicator of the underlying neuronal function. As a consequence PET, unlike other imaging techniques such as CT or MRI, can provide information about cerebral function rather than structure.

Early PET studies frequently reported the presence of “hypofrontality” in patients with schizophrenia. This was not a consistent finding, perhaps reflecting diagnostic heterogeneity. Tim Crow proposed, after the finding of structural abnormalities on CT in the early '70s, an influential two dimensional model of schizophrenia. Positive symptoms such as delusions and hallucinations were attributed to a functional dopaminergic hyperactivity and negative features such as poverty of speech and flattening of affect were attributed to structural change. More recently Peter Liddle, in a series of studies, found that the symptoms and signs of schizophrenia segregate to three syndromes, and this finding has been replicated by other workers. The syndromes are psychomotor poverty including poverty of speech, flattening of affect and reduced spontaneous movements; reality distortion including delusions and hallucinations; and an additional category of disorganisation which includes formal thought disorder and incongruity of affect. These

syndromes bear a striking similarity to the three sub-types of schizophrenia that Kraepelin originally described: catatonic, paranoid and hebephrenic.

Although the three syndromes can coexist within the same individual, each separate syndrome should reflect a characteristic cerebral pathophysiology. The relevant question is whether the current level of sophistication of PET technology and data analysis is capable of demonstrating these differences in cerebral function. The findings of the Hammersmith team are striking. In a group of chronic schizophrenic patients with stable phenomenology they found that ratings for the syndrome of psychomotor poverty correlated with reduced blood flow in the left dorsolateral prefrontal cortex and the left parietal association cortex; reality distortion with increased blood flow in the left parahippocampal gyrops and prefrontal cortex; and disorganisation with increased flow to the right anterior cingulate and thalamus. But what do these correlations mean?

The Hammersmith team have not only demonstrated a correlation between cerebral function and specific syndromes in schizophrenia, but have started to demonstrate how these particular patterns of altered cerebral function may be linked with specific psychological processes. Chris Frith, a neuropsychologist, proposed that delusions and hallucinations occur as a consequence of the inability of individuals to monitor their own mental activity so that, for example, their thoughts or movements are experienced as having an alien quality. By performing PET studies in normal volunteers undergoing appropriate cognitive tasks, he found that blood flow increased in the left parahippocampal gyrus during self-monitoring, a change which mirrored the finding for the reality distortion syndrome of schizophrenia. The task of verbal fluency which involves spontaneous generation of mental activity produced an increase in blood flow in the left dorsolateral prefrontal cortex in control subjects. This corresponded

with the findings of the psychomotor poverty syndrome of schizophrenia. Similar correlations with relevant cognitive tasks have also been found for the disorganisation syndrome. A psychological theory of normal and abnormal cognitive processing is a necessary intervening step between the phenomenology and the pathophysiology of schizophrenia and there is considerable further potential in this approach.

The video does not attempt to correlate these functional changes with structural changes in schizophrenia. The latter are being reported increasingly with techniques such as MRI and while most striking in the left temporal lobe, are present more diffusely. However, there is a considerable amount of information condensed into this 20 minute video which could prove of interest to psychiatrists (and medical students) at all stages in training. Those interested in the pathophysiology of schizophrenia will find much to reflect on, and the tape could be used as an introduction for discussion on the phenomenology or psychology of schizophrenia.

DAVID GEANEY

#### **Finding refuge**

The film gives a brief historical introduction to social and legal attitudes towards matrimonial violence, and sets the scene for the development of the women's refuge organisation.

Most of the film is based on the working of the refuge with accounts from victims and their children. Clients describe the reasons for seeking refuge, the problems of their children, their experience in refuge, and the legal, financial, and social aspects involved in breaking away from their partners. Refuge staff describe the help they offer and facilities available to mothers and children.

There are brief presentations from the professionals who work most closely with the refuge, namely the lawyer, policeman, and a housing officer.

The law applicable to women in refuges is summarised, highlighting its new provisions and residual weaknesses (Domestic Violence and Matrimonial Proceedings Act 1976, ouster and non molestation injunctions, and Housing Act 1985).

The film concludes with recommendations for greater refuge provision, and the need for regular secure funding arrangements to ensure future placements.

The video is made without professional actors and relies on the clients and staff of the women's refuge and associated professional staff. Victims' children give the most natural dramatic account.

The sound, vision, and mixing of the film is varied, giving a mixed production quality.

The film is not of specific interest to psychiatrists, but could be of use in undergraduate teaching, and training of casualty staff, social workers and housing officers, as well as such groups as police trainees, Samaritans, and Citizens' Advice Bureaus.

BEE BROCKMAN

#### *Tape details*

Rating	Audience
** Highly recommended	P Psychiatrists
** Recommended	M Multi-disciplinary
* Worth looking at	UG Undergraduate
0 No rating	PG Postgraduate

#### *PET: images of brain function in schizophrenia*

Production: Hammersmith Hospital  
 Distributor: Mr C. Stevenson (Product Manager), Janssen Pharmaceutical Limited, Grove, Wantage, Oxon OX12 ODQ

Details: Video; 20 minutes; 1992. Limited copies available free

Rating/audience: \*\* P UG PG

#### *Finding refuge*

Production: Projecting Women, GB  
 Distributor: Albany Video Distribution, Battersea Studios, Television Centre, Thackeray Road, London SW8 3TW

Details: Video; 25 minutes; 1991. £37

Rating/audience: \* M