

in patients suffering from affective disorder or neurosis. The presentation summarizes most recent findings discussing functional and clinical implications.

### THE ORIGIN OF SCHNEIDERIAN FIRST-RANK SYMPTOMS AND THE EVOLUTION OF LANGUAGE

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First-rank symptoms were proposed by K Schneider as pathognomonic for schizophrenia although he disavowed any pathophysiological interpretation. More recently the incidence of schizophrenia (defined by the presence of first-rank symptoms) has been demonstrated to be relatively constant across cultures in the WHO Ten Country Study.

In morphologic and functional studies [1] there is evidence in schizophrenia of a loss or diminution of cerebral asymmetry. It will be argued that this is consistent with a failure to establish dominance for language unequivocally in one or other cerebral hemisphere, and that the peculiar nature of first-rank symptoms arises from an abnormal interaction between dominant and non-dominant hemispheres. This theory is consistent with the view of Trimble [2] that such symptoms relate to the dominant temporal lobe; and of Nasrallah [3] that they arise as intrusions from the non-dominant hemisphere. According to this concept schizophrenia has its origin in the variation generated in the evolution of the homo-sapiens' specific capacity for language [4].

- [1] Crow, T.J. (1995) The relationship between morphologic and genetic findings in schizophrenia: An evolutionary perspective. In: Schizophrenia, Alfred Benzon Symposium 38, edited by Fog, R. & Gertlach, J. Munksgaard, Copenhagen, p. 15–25.
- [2] Trimble, M.R. (1990) First-rank symptoms of Schneider: a new perspective? *Br J Psychiatry* 156, 195–200.
- [3] Nasrallah, H.A. (1985) The unintegrated right cerebral hemispheric consciousness as alien intruder: a possible mechanism for Schneiderian delusions in schizophrenia. *Compr Psychiatry* 26, 273.
- [4] Crow, T.J. (1995) Constraints on concepts of pathogenesis: Language and the speciation process as the key to the etiology of schizophrenia. *Arch Gen Psychiatry* 52, 1011–1014.

### PATTERNS OF HEMISPHERE SPECIALIZATION AS INDICATORS OF VULNERABILITY TO SCHIZOPHRENIA

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Human brains reveal neuroanatomic asymmetry and hemisphere-specific involvement in particular processes and tasks. Schizophrenia is characterized by deviations from the physiological cerebral asymmetry and hemisphere-specific deficits in size of brain areas, function and blood flow. It has been proposed that the association with laterality-specific patterns present a cue to the etiology of schizophrenia. The origins of the physiological asymmetry and of deviations from asymmetry remain obscure; a codetermination by genetic factors is discussed.

Hemisphere specialization and asymmetry scores were shown to be attenuated in first episode schizophrenics of medication as compared to controls in a first study. We subsequently explored two putative determinants (sizes of hemisphere-specific brain areas and genetic factors) of the deviation of cerebral functional asymmetry in schizophrenia by a series of studies:

1. Hemisphere-specific sizes of brain areas and neuroanatomic asymmetry scores were related to functional specialization in first episode schizophrenics off medication and controls.

2. Functional hemisphere specialization was compared between healthy siblings of schizophrenics and of controls.

3. Genetic determination of patterns of functional hemisphere specialization, of other indicators of laterality and sizes of hemisphere-specific brain areas was assessed in a series of healthy twins.

Although deviant patterns of functional hemisphere specialization cosegregated with schizophrenia in families, evidence for a genetic link was not found. However, inconsistencies between indicators of laterality and hemisphere specialization is also cosegregating with schizophrenia; inconsistency between these indicators demonstrates a substantial determination by genetic factors which might also contribute to schizophrenia.

### NEUROPSYCHOLOGICAL AND CLINICAL CORRELATES OF STRIATAL ASYMMETRY IN SCHIZOPHRENIA

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Research literature consistently suggests that anatomical abnormalities in schizophrenia are asymmetric, and more marked in the left hemisphere. Findings from neuromorphological, neurophysiological and neuropsychological studies support the hypothesis that the striatum could play a key role in the pathophysiology and in the production of symptoms and signs in schizophrenia.

We used an inversion recovery magnetic resonance protocol with the assistance of the Talairach atlas to identify striatal structures in thirty-five schizophrenic patients and twenty-four healthy controls. Patients also underwent a neuropsychological evaluation of executive functions by Wisconsin Card Sorting Test (WCST) and clinical assessment by standardized rating scales (Krawiecka-Manchester Rating Scale and Outcome Scale).

Results show that poor WCST performers have a reduction of the striatum complex and caudate nucleus bilaterally, and the left putamen with respect to controls. Significant correlations were only seen between neuropsychological indexes and left striatal measures. Left striatal structures also show negative correlations with positive and negative symptoms, suggesting that schizophrenic patients with more severe symptoms have more lateralized morphological anomalies. On the contrary, WCST indexes do not correlate with symptomatology but with the outcome measure.

The evidence for a lateralized dysfunction is strongly suggestive of hypotheses regarding the relationship of hemispheric asymmetries of function and schizophrenia.

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## S21. Towards standard European measures of outcome

*Chairmen: I Marks, C Pull*

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### TOWARDS STANDARD EUROPEAN MEASURES OF OUTCOME

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Europe-wide use and exchange of common measures of clinical outcome has come closer with computerisation e.g. of HoNOS (the UK's Health of the Nation Outcome Scale) and of patient-specific, syndrome-specific and generic ratings in systems such as CORM (Clinical Outcome and Resource Monitoring) which also measures