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Annotation

Neuropsychiatry

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The last 20 years have seen a rapidly growing interest in disorder of brain function in psychiatric illness but this is only the latest phase in a steady development of ideas over the last three centuries. Throughout this time, biological and psychological formulations of psychiatric disorder have co-existed and, at different periods, one or other has been the focus of attention. Thomas Willis, who coined the word 'neurology' 300 years ago, felt that psychiatric disorder represented brain disorder, but it was only during the nineteenth century, as understanding of brain function made its first real progress, that this opinion became more explicit and accepted. By the second half of the century, it was axiomatic that psychiatric disorder was synonymous with brain disorder (Griesinger, 1845; Maudsley, 1873; Ferrier, 1878); all that was lacking was the actual neurophysiological basis of mental disorder.

Ironically, as this neurophysiological knowledge then gradually accumulated, the focus of attention shifted to investigation of abnormal mental states divorced from cerebral function. Thus, as the first intimation of chemical mediation of nerve impulses (Elliot, 1904) and the concept of extrapyramidal motor disorder (Wilson, 1912) appeared, Bleuler (1911) put forward his psychological concept of schizophrenia. As the electroencephalogram was introduced (Berger, 1929) and the insights into neurotic and psychotic phenomena provided by epidemic encephalitis described (von Economo, 1931), the psychological approach pioneered by Freud, Adler, and Jung, which sought to construct causal explanations out of the stuff of subjective experience, was claimed to be more successful than the physiological approach (Hart, 1932). At the same time as the limbic system was being proposed as a cerebral basis for emotion (Papez, 1937), Lewis (1934), in his classic papers on depression, condemned the physiological and neurological conceptions of the previous generation of psychiatrists and the 'biological tendencies' of those contemporary psychiatrists who maintained an interest in the central nervous system.

Ey and his colleagues (1947), in the first extensive critical study of the relationship of neurology and psychiatry, concluded that this hinged on conflicting conceptualisations of the relationship of psychiatric disorder and the brain. For some, psychiatric disorders were disorders of the nervous system, neurologists specialising in disorders below the brain-stem and psychiatrists in those above; this could be called the neurological paradigm. For others, psychiatric disorder was radically different from cerebral disorder, psychiatry having nothing in common with neurology; this could be called the psychological paradigm. These paradigms represent conceptually different approaches to understanding psychiatric disorder. Either approach is valid but they are mutually exclusive like the two different views of a Necker cube. The same psychiatric disorder can be viewed in terms of either paradigm. Individuals make their own decision as to which approach provides a more satisfying understanding of a particular disorder. Majority opinion is subject to an historical process. After the turn of the century, most psychiatrists favoured the psychological rather than the neurological paradigm, and most neurologists left the study of behavioural disorder to philosophy.

About 30 years ago, the neurological paradigm in psychiatry started to re-establish itself. Between 1950 and 1970, the main theory of the genesis of infantile psychosis changed from a psychogenic to a neurophysiological one (Kolvin *et al*, 1971). Anderson (1952) described a personal conversion from one paradigm to the other, and how the symptoms in adult patients with schizophrenia that she had previously conscientiously tried to interpret psychodynamically now appeared quite similar, if not identical, with known organically determined symptoms, as some had consistently maintained (Kleist, 1960). From this time the neurological paradigm became an increasingly orthodox position (Symonds, 1960; Hunter, 1973; Kiloh, 1982), and technological advance again stimulated interest in the investigation of major mental disorder. The rise of biological psychiatry was evidence of this new interest, although its concentration on biological processes managed to avoid the neurological implications of the change in approach. Neurologists developed a new interest in behaviour which grew to become 'behavioural neurology'. Some (Damasio, 1984) completely excluded psychiatry from participation in this new speciality, although others

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(Stevens, 1982) pointed out that it was in fact another name for neuropsychiatry. The modern revival of neuropsychiatry is bringing psychiatry and neurology together again after a century of separation; 'we are back where Griesinger started' (Caine & Joynt, 1986).

Conceptions of neurological disorder have also evolved. Not all neurological disorder is constant and irreversible. Basal ganglia disorders typically fluctuate in severity and the extensor plantar response after an epileptic fit is fully reversible. Neurological features of psychiatric illness are typically variable in expression and can be completely reversible, including such 'hard' neurological signs as extensor plantar responses in schizophrenia (Claude *et al*, 1927). Neurological features fluctuate in severity with the severity of psychiatric features of both neurological and psychiatric disorder (Modai *et al*, 1985; Tucker & Silberfarb, 1978). Thus the more severe the psychiatric disorder the more neurological it will appear. Certain neurological disorders, for example oculogyric crises, basal ganglia diseases, epilepsy and spasmodic torticollis can be precipitated, exacerbated, improved or completely resolved by psychosocial factors (Delbeke & van Bogaert, 1928; Brenner *et al*, 1947, Fenwick, 1982; Jayne *et al*, 1984). There have long been suggestions that symptoms produced by physical trauma to certain areas of cerebral tissue might also arise from transient and reversible lesions in the same areas, including those produced by emotional trauma (Marinesco & Dragenesco, 1929; Vujic, 1952; Whitty, 1956). A proper neuropsychiatric assessment always considers the contribution of psychosocial factors.

The conceptual issues discussed above have important practical consequences. The terms 'organic' and 'functional' both have two distinct meanings. Organic can mean structural or it can mean physical in origin; functional can mean physiological or it can mean mental in origin. Two issues are involved: one is descriptive – the presence or absence of recognisable pathological change, and the other philosophical – the choice between the two paradigms for psychiatric disorder. These two issues are completely independent and bear no necessary relationship to each other. Ambivalent use of the terms organic and functional, however, allows this distinction to be blurred. Thus, the difference between organic and functional psychoses theoretically refers to their presumed physical or mental origin, but in practice hinges on the presence or absence of recognisable cerebral disorder. This means that in clinical and research investigations of functional psychosis, when the investigation reveals brain disorder in particular cases, these are excluded from the study (Johnstone *et al*, 1986*a*, *b*). It allows the same textbook (Pincus & Tucker, 1974) to accept minor neurological abnormalities as commonly found in schizophrenia (p. 108), but give the absence of major neurological deficits as one of the important criteria for its diagnosis (p. 86). It makes the preliminary elimination of organic states a requirement for psychiatric assessment with precise diagnostic instruments such as the Present State Examination (Wing *et al*, 1974) and Research Diagnostic Criteria (Spitzer *et al*, 1978), although the criteria for this important first step are not specified. These paradoxical positions have been consistently criticised (Gibbs, 1938; Ferraro, 1943; Stevens, 1982; Murray *et al*, 1985), but are still orthodox. A basically philosophical issue is interfering with empirical research, since the cases excluded from investigation are likely to be the very ones to throw most light on the cerebral basis of psychiatric disorder.

A neuropsychiatric approach is an approach to psychiatric disorder in general. It is not limited to psychiatric disorder associated with known cerebral disorder. With such an approach there is no absolute demarcation between neurological and psychiatric disorder and disorders can only be classified as neurological or psychiatric in terms of who manages them. Neurological examination and investigation is performed on patients with psychiatric disorder for the information it provides on the disorder and not only to define those cases needing referral to a neurologist. Abnormalities detected are no longer described as incidental or non-contributory. Neurological dysfunction is incorporated as a component of psychiatric syndromes. Medication is not divided into neurotropic and psychotropic. Needless to say, a neurological approach does not in any way preclude a caring or supportive approach to the patient, from either neurologist or psychiatrist.

In England and Wales there are currently ten times the number of consultant psychiatrists (including mental handicap) as consultant neurologists (DHSS, 1983). Most central nervous system disorder is managed by psychiatrists. Thirty years ago, neurology could lay claim to the study of the neural basis of all the psychological functions of man (Brain, 1958). Now, a neurological approach is becoming increasingly relevant to the practice of psychiatry. It is both permissible and desirable. However, even in some university centres, psychiatrists are not permitted to order essential neurological investigations on their out-patients because they are not considered competent enough by their non-psychiatric colleagues (Hays, 1985). In future, neuropsychiatry must form a major part of the training of psychiatrists.

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