A Neuropsychiatric Perspective

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We live in an era of unprecedented optimism concerning the search for biological solutions to the mysteries of mental disorders. Recent technological advances allow us to peek into the living brain of normal and patient subjects, and questions that were once posed hypothetically can now be approached directly. However, although new technologies spring forth, solutions to key problems remain elusive. The development of psychiatric symptoms from changes in neurotransmitter function is far from being explained, and an understanding of complex neural interactions, especially at cortical levels, is only beginning to be approached.

Trimble has undertaken the task of traversing the jungle of current information in biological psychiatry. As an overview of much of the recent biological research, the author has provided an excellent sampling of work in biochemical and neuropsychiatric research. His unabashed neuropsychiatric perspective permeates the book. In evaluating the symptomatology associated with different psychopathological states, an emphasis is placed on comparison with similar symptoms observed in patients with known types of organic brain damage. This is especially true for disorders of the limbic system, which provide such a significant model that an entire chapter is devoted to them. As a tentative hypothesis, it is strongly implied that, if certain symptoms are common between clearly organically-produced disorders and other psychiatric disorders, the same underlying physiological mechanisms may be disrupted in both. Given the author's perspective, data from lesion, encephalitic, and epileptogenic disorders establish a viable template for comparison with personality disorders, schizophrenia, and affective disorders. Consequently, the consideration of alternate pathways leading to psychopathology is limited. Background chapters are provided to orient the reader to the physiological and technological aspects of current research strategies. Chapter 3 (on physiology and chemistry) ranges from the simplistic, describing neurons, synapses, and neurotransmitters to descriptions of complex organic interactions and neurotransmitter receptor types. Some of this material appears too elementary to be reviewed by those who have a sufficient background for the other material presented, whereas the details are likely to fall beyond the comprehension of the novice. Chapters review the anatomy of the brain, especially in terms of limbic interactions. Thus, interconnections of the limbic system, amygdala, hippocampal, and septal regions are highlighted. In the description of further interconnections within the hypothalamic, midbrain, and cerebral regions, the impact of this interconnected network as a modifier of complex behavior begins to take shape.

Modern biological psychiatry is understandably driven by its technological and a useful overview of current approaches is provided. The neuropsychiatric emphasis is present in a discussion of the EEG, although event-related potential (ERP) findings are not so carefully considered. Thus, the P300 component of the ERP, related to a variety of cognitive aspects, is simply summarized, suggesting that it involves the establishment of memory traces. The author seems more taken by topographic mapping of EEG and ERP data, whether merely graphic presentations of summed data, than by the critical experimental procedures that are used to collect physiological data. For example, the author ignores a substantial literature on decreased P300 amplitude in schizophrenia.

References
A historical perspective is also applied in the discussion of the diagnostic classification of mental disorders, covering not only current nosological systems such as DSM-III and ICD-9, but also the philosophical background engendered by the medical model, to which the author adheres. The major influence of Karl Jaspers, often overlooked in American training, is carefully delineated. Although schooled in 19th century phenomenology, Jaspers emphasized empirical components of diagnostic assessment, including distinctions between the form of the disorder and the analytic interest in content. Throughout this volume, Trimble attempts to use Jaspers's distinctions in dealing with experimental findings.

As a stark contrast, the mechanistic nature of current biological psychiatry theory becomes more notable. Appropriately detailed discussions are found in the descriptions of biochemical findings among psychiatric disorders. Today, we have dopaminergic, noradrenergic, and serotonergic theories of biochemical interaction, or models of specific developmental or lesion-like disorders, to explain deviant behavior. The influence of genetic factors is reviewed for each disorder. The author is less concerned with more integrative attempts at dealing with the bridge between biological and experiential etiologies and stresses, which have been attempted elsewhere through general diathesis-stress models such as vulnerability theory. Very little of the work on assessment of environmental variables is considered applicable by the author. Even so, some mention of the developing trend of immunological research in psychiatry is called for.

Students of psychopathology will be surprised to find that, of the six chapters grouped according to major clinical disorders, only three of these—"Personality Disorders and the Neuroses," "Schizophrenia," and "Affective Disorders"—deal with more commonly identified psychiatric problems. The other chapters—"Disorders of the Limbic System," "Epilepsy," and "The Dementias"—include patients seen by both neurological and psychiatric practitioners. Trimble argues that the behavioral sequelae of these latter disorders bind them to psychiatry, and, admittedly, several sections are updates of his earlier volume, *Neuropsychiatry* (1981).

For the psychologist, the volume is disappointing in its omission of nearly all relevant research other than neuropsychological test findings, which the author invokes readily. Other than a brief mention of eye movement deviations in schizophrenia, the entire information-processing literature relevant to psychopathology, including behavioral performance measures such as Continuous Performance Test, Span of Apprehension, and most psychophysiological studies, for example, is neglected. The student or researcher who is seeking findings in experimental psychopathology must search elsewhere.

One of the apparent weaknesses in the approach to the biologically based treatment of mental disorders is a relatively cavalier attitude toward the specificity of psychotherapy as used as an adjunct to pharmacotherapy or other somotherapies. Although it is clear that different psychotherapeutic approaches are available, it is rare that details of psychotherapy, if mentioned at all, are provided in the biological literature. This is an issue of critical importance for the clinical psychotherapist working in treatment teams, and it deserves increasing investigative attention.

Biological treatments, as presented in a concluding chapter, deal mostly with pharmacological treatment, with an emphasis on the mechanisms by which appropriate drugs appear to produce their effects. A section on pharmacokinetics, a critical aspect for understanding drug efficacy, is weak in describing the problems in attaining pharmacotherapeutically effective doses. However, the biggest surprise is saved for last—an entirely non-critical section on psychosurgery. Although psychosurgery is used more often in Great Britain than the United States, the author neglects to indicate the long history of careful research, such as the Columbia-Greystone project in the late 1940s, that reduced the influence of surgical procedures as a major alternative to the treatment of mental disorders.

Our inability to utilize the details of any neurochemical or physiological analysis to explain the generation of complex experience, including perceptual and emotional reactions, appears to be more than a Gordian knot requiring a suddenly insightful solution—they may ultimately remain unanswerable problems. Nevertheless, the continuing study of biological underpinnings and the implementation of experimentally directed treatment components have provided the strongest advances in the ongoing task of understanding and treating psychiatric disorders.