



Book Review

The temporal lobes and the limbic system in neuropsychiatry: A book review

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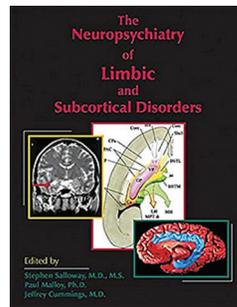
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Title	:	The Neuropsychiatry of Limbic and Subcortical Disorders
Edition	:	1 st
Edited by	:	Dr. Stephen P. Salloway; Dr. Paul F. Malloy; Dr. Jeffrey L. Cummings
Published by	:	American Psychiatric Press, Inc.
ISBN	:	ISBN-13: 978-0880489423; ISBN-10: 0880489421
Hardcover	:	\$94.96
Pages	:	217 with Illustrations, Annotations, and Index
Year	:	1997

The material compiled in this slim but compact tome was originally published in the *Journal of Neuropsychiatry and Clinical Neurosciences* in 1997. It was expanded and republication in book form was made possible by a grant from Hoechst Marion Roussel Pharmaceuticals. The book is the work of 26 contributors, recognized leading investigators and authorities in their respective areas of contribution, and is fully illustrated with figures and neuroimages in black and white and color photography as well as numerous tables summarizing some of the text.

The book is divided into two parts. Part 1 deals with anatomy and neurochemistry and is subdivided into five chapters: (1) "The Limbic System: An Anatomic, Phylogenetic, and Clinical Perspective; (2) Ventromedial Temporal Lobe Anatomy, with Comments on Alzheimer's Disease and Temporal Injury; (3) The Thalamus and Neuropsychiatric Illness; (4) The Accumbens: Beyond the Core-Shell Dichotomy; and (5) Neurobiology of Fear Responses: The Role of the Amygdala." In each of these basic neuroscience chapters, the contributors have researched and summarized the state of knowledge in each of their respective areas, and the chapters are followed by comprehensive annotation of sources, veritable bibliographic fountains, which should be of immense value to researchers.

I will not go into more specific details about Part 1. I will let readers make their own discoveries in the basic neuroscience of neuropsychiatry, except for observing that the first chapter on the

limbic system summarizes very nicely the advances and discoveries with eloquent explanations originally made by the pioneering neuroscientists – e.g. Broca, Ramon y Cajal, Cannon, Papez, Yakovlev, MacLean, and others, as summarized by the authors. The data obtained in their studies and their observations and interpretations make for a wonderful historic introduction to neurobiology and neuropsychiatry. And what is even more amazing is how often the hypotheses tested by those early pioneers have been found to be largely correct over the subsequent four or five decades by more recent scientific research and clinical observations.

Part 2 relates to clinical syndromes and is composed of nine chapters dealing with a variety of interesting disorders in neuropsychiatry, ranging from paroxysmal limbic disorders and temporal lobe abnormalities to the neurobiology of emotions and recovered memories and from the neuropsychiatry of schizophrenia and depression to the neurobiology of drug addiction and religious experience.

I think it would be of help to the reader to name the chapters in Part 2 as well: “(6) Paroxysmal Limbic Disorders in Neuropsychiatry; (7) Auras and Experiential Responses Arising in the Temporal Lobe; (8) Neuropsychiatric Symptoms From the Temporolimbic Lobe; (9) The Neurobiology of Emotional Experience; (10) The Neurobiology of Recovered Memories; (11) The Medial Temporal Lobe in Schizophrenia; (12) Limbic-Cortical Dysregulation: A Proposed Model of Depression; (13) The Neurobiology of Drug Addiction; and (14) The Neural Substrates for Religious Experience.”

I will not summarize each of the chapters. I will leave that adventure for the readers. Nor will I give a succinct synopsis of the book, as this is clearly not possible with 26 contributors, experts in different areas of neuropsychiatry and from vastly different perspectives! I will point out a few fascinating observations that have been made and supported by evidence provided by the authors.

In Chapter 8 on neuropsychiatric syndromes of the temporolimbic lobes, several exciting syndromes are described. Most fascinating was the Gastaut-Geschwind Syndrome consisting of a constellation of symptoms, such as “hyperreligiosity, hypergraphia, and exaggerated philosophical concerns,” which may alternate with periods of irritability and elation. These symptoms typically occur in interictal periods of temporal lobe epilepsy.

These patients typically also have “ ‘stickiness’ of thought processes and adherence to an idea” that may actually be the most salient feature of this disorder. For example, patients may have difficulty terminating conversations or ending interpersonal encounters, such as ending a doctor’s office visit or a visit to a friend. Patients with hypergraphia may also have difficulty restricting their written communications,

such as letters or memoranda written with a compulsion that reaches to an obsession and expressed with an excessive moral or religious fervor.^[5]

Other syndromes are described in this chapter that I leave for the discovery of new enthusiastic readers! Unfortunately, the topics of rage and aggression are only mentioned in this chapter in passing on page 128 in relation to emotional and mood disorders caused by temporolimbic lesions.^[6] Pseudopsychopathic personality disorders are covered in a subsequent tome by these editors in relation to orbitofrontal lesions and in association with neurosurgical treatment for obsessive-compulsive disorders.^[9] I have reviewed the second book, *The Frontal Lobes and Neuropsychiatric Illness* (2001), for *Surgical Neurology International* (SNI).^[1] For historic (and more scantily contemporary) information on the neurosurgical treatment of violence, psychopathy, and brain disorders, see my 3-part series on this subject: “Violence, Mental Illness, and the Brain – A Brief History of Psychosurgery.”^[2-4]

In Chapter 10 on the neurobiology of recovered memories, it is reaffirmed that memory is not fixed but malleable, subject to distortion and altered by new traumatic events or developing experiences. Thus, individuals in time “may not be able to distinguish between real and imagined memory.”^[11] Moreover, memory distortions may increase in time in all age groups, and “all age categories from preschool to adulthood are susceptible to memory distortions.”^[7]

In Chapter 13 on the neurobiology of drug addiction, we learn that enough evidence has been compiled on the mechanisms for the acute effects of certain type of drugs, such as opiates (agonist at opioid receptors); cocaine (inhibition of monoamine neurotransmitters – i.e. dopamine, norepinephrine, and serotonin – reuptake transporters); amphetamines (stimulate monoamine release); alcohol (facilitates GABA alpha receptors and inhibits NMDA—N-methyl-D-aspartate — glutamate receptor function); and hallucinogens (partial agonist at 5 HT 2 alpha serotonin receptors).^[8]

In Chapter 14 on the neural substrates of religious experience, we can ascertain that certain religious experience is brain based as evinced by selected clinical observations in patients with focal brain lesions. This chapter assigns neural substrates for out-of-body and near-death experiences.

Such interesting topics should make the book of interest to psychiatrists, psychologists, and neurologists, as well as functional neurosurgeons and even social scientists.

Advances continue to be made, but not at the rate that would make this book obsolete to students and clinicians despite the years that have passed since its publication. The material in this book continues to be of value not only from a historic perspective but also from a clinical perspective because of

the succinct summation and comprehensive documentation of published research, providing a solid foundation in neuropsychiatry as it relates to the limbic system and subcortical structures to contemporary clinicians. This book is particularly valuable to functional neurosurgeons as well as practicing clinicians in neurology, psychology, and psychiatry. It would also be of import to researchers in the field because of the extensive bibliography up to the time of the publication of this book. I highly recommend this book to all those aforementioned who have a special interest in the field of neuropsychiatry.

Declaration of patient consent

Patient's consent is not required as there are no patients in this study.

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Conflicts of interest

There are no conflicts of interest.

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