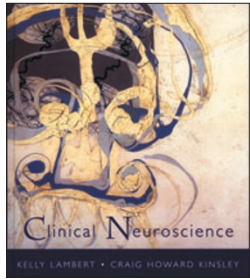


A new textbook: some pruning and remodeling still required



Clinical Neuroscience

By Kelly Lambert and Craig Kinsley

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Reviewed by Steven E Hyman

Clinical Neuroscience is a textbook for upper-level undergraduates in clinical psychology. Given the authors' laudable goal of bridging the gap between psychology and neurobiology and their oft-repeated exhortation that budding clinicians must rely on data instead of intuition, I began reading with great enthusiasm. Unfortunately, this book needs another edition before I can wholeheartedly recommend it. A pattern of strengths and weaknesses emerges from the beginning and continues throughout. The authors deliver a welcome call for scientific rigor and a clear statement that many difficult questions remain unanswered. For a skeptical neuroscientist, these are the right notes to hit. Too often, clinicians, patients and the public are proffered shallow (and probably false) explanations of mental illness (for example, that depression is caused by a serotonin deficit). The frustrating truth is that much work remains to be done to develop a satisfying picture of how genes and the environment influence the brain and, thereby, thought, emotion and behavior.

The authors do not always succeed in their aim of rigorous adherence to evidence and explanatory humility. In the preface, they state that "mental disorders are viewed as disruptions of homeostasis, departures from endogenous averages, in this text. As the internal milieu is disrupted, the nervous system's attempts to compensate sometimes leads to extreme conditions that are sometimes classified as mental disorders." It is hard to square this rather outdated and indeed Procrustean view with the recognition that "there are many unanswered and difficult questions."

On another matter, the authors are clearly right to note that the boundaries between the brain and other areas of bodily function are far less distinct than is often taught. But they accept what seems a weak body of evidence suggesting a major role for nutrients in mental and emotional states. They highlight a controversial dietary intervention for autism, despite the scant empirical evidence supporting such intervention, as compared with, for example, intensive behavioral treatments. One worries—and in a textbook, this is a serious worry—that the authors are driven by their theoretical commitments more than by the scientific literature.

The authors are appropriately critical of the classification of mental

disorders in the current Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). Their criticism, however, takes on a nonscientific and polemical tone. The DSM system may indeed be troubled by subjectivity, but until neuroscience advances sufficiently to provide objective measures, psychiatry and psychology will be stuck with some kind of subjective diagnostic criteria. Lost in the polemic are general problems that have important implications for both research and practice. For example, beginning with DSM-III, the manual chose 'splitting' of disorders over 'lumping', and this process may have gone too far. People with one DSM diagnosis often have additional diagnoses; for example, individuals with anxiety disorders often also meet criteria for major depression. This phenomenon of 'co-occurring disorders' raises important questions about the validity of diagnostic boundaries.

Genetics is poorly represented, and some statements are just plain confused. For example, the authors state "we think of our genes as unmodifiable, but neuroscientists now know, for example, that immediate early genes...are constantly being turned on and off..." Two concepts—inherited DNA sequence and gene regulation—are conflated here. Since the late 1980s, thousands of references have related gene regulation to behavior and mental disorders, and they deserve a sophisticated discussion beyond the cursory mention of immediate early genes. Even more problematic, the concepts of genetic complexity and gene-environment interactions are barely mentioned, though these topics have important implications for the understanding, classification and diagnosis of mental disorders.

I found the neuroscience in the book to be generally accurate, although with some important lacunae. The discussion of action potentials in myelinated axons makes no mention of capacitance, and the student would come away believing that action potentials do, in fact, leap from node to node. The discussion of monoamine neurotransmitters, which should be central to such a book—because they are crucial to the regulation of emotion, cognition and executive function and to the actions of many psychotropic drugs—does not incorporate modern work from cognitive, behavioral or computational neuroscience.

The chapters on diseases are fairly up to date, albeit somewhat accepting of current leading theories. Take one example of success: in the discussion of schizophrenia, the authors describe recent work on impoverishment of neuropil, and important new neuroimaging and postmortem work. There are good discussions of developmental markers and of the controversy about a possible role of early viral infection, as well as appropriate skepticism about the dopamine hypothesis of schizophrenia.

The referencing is somewhat worrisome. The authors quote commentary articles written by journal reporters rather than the underlying peer-reviewed research. Discussion of "the relationship between foods and moods" includes a reference to the MIT News Office, which does not set an ideal example for students as they think about referencing their work.

Should there eventually be a second edition, one would wish that the authors would share the manuscript with colleagues at the forefront of neuroscience research, not only for content but also for tone. Moreover, the relevance of the book would be enhanced by the incorporation of modern genetics. ■

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