

## TEXTBOOK REVIEW

### ***Biological Psychology***

by S. B. Klein

2000 Prentice Hall 540 pages

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Klein's *Biological Psychology* is a textbook that appears superficially to be similar in its style and organization to others in the field. However, Klein, a psychology professor at Mississippi State University, writes in an easy to read format that is supplemented by excellent figures, reflective review questions, and an interactive web page. Klein never oversimplifies the material or avoids complicated issues. In the past I have used Klein's text as a supplemental reading in an upper level undergraduate course on physiological psychology (that typically enrolls psychology, biology, and chemistry students), but I will be using it as a primary text this year at the suggestion of students.

The text is composed of fifteen chapters logically organized beginning with the basics (neuroanatomy and biophysics) and ending with integrative topics such as emotion, language, and psychopathology. Uniquely, each chapter begins with a vignette that describes a clinical scenario. For example, the drugs and behavior chapter begins with the tale of a computer software analyst who uses cocaine with friends at a party. She does not use again for weeks but often thinks about the experience. After more use, she begins to crave it so intensely that her daily activities begin to revolve around procuring it. The vignette sets up a number of questions about the underlying nervous system causes or consequences of the symptoms or behavior described. Here Klein successfully taps into students' keen interest in clinical phenomena. Throughout each chapter, Klein brings the reader back to the vignette to connect the material to the story in a meaningful way. By the end of the chapter, the vignette has been thoroughly explored and both answers and additional questions presented.

Each chapter contains section reviews, "before you go on" reflective questions, and glossaries. The "before you go on" questions range from factual questions to those that require the student to reflect on the vignette using the facts and theories presented in the text. Such questions encourage the student to solve a problem as well as to organize the material. Each chapter ends with an extensive review using three different forms of questioning: vocabulary (fill in the blank), multiple choice, and critical thinking questions. The critical thinking questions present additional cases where students must use information rather than simply repeating it. Additional readings are also suggested at the end of each chapter. The text concludes with a large and thorough glossary, subject index, reference list, and author index.

Neuroanatomy, often the bane of undergraduates, is effectively integrated with information on the cells of the

nervous system, and interesting functional descriptions. The anatomical illustrations are exceptional; they successfully illustrate the three dimensionality of the nervous system without being overly complex. Furthermore, Klein does not attempt to stuff everything there is to know about anatomy into one chapter. He successfully distributes anatomical information throughout the text topically.

Students were equally satisfied with the clear text and rich illustrations describing membrane conductance. Drugs and neurotransmitters are among the favorite topics of students, but they also expect coverage of drug abuse and clinical issues. The chapter on neuropharmacology nicely integrates the recent focus on the role of craving (over older withdrawal avoidance theories) in drug abuse with research on nigrostriatal reinforcement systems. Similar sensitivity to student interests is demonstrated in other chapters without sacrificing depth or complexity. Regrettably, like other texts Klein's chapter on emotion and stress, may place undue emphasis on traditional concepts of a "limbic system" without considering the work of researchers like LeDoux who question it.

One notable topic is absent from this text: consciousness. Excluding consciousness is not unusual in texts such as Klein's and texts that do cover consciousness tend to be lighter on the neuroscience content. It should be possible to include, for example, the evidence supporting the modular theories of consciousness without sacrificing scientific rigor.

Another strength of this text lies in its many illustrations. The text contains the high quality, multicolor images students have come to expect. Like the text, the images are particularly good in that they show complicated anatomy without sacrificing critical information. For example, in the visual system chapter, the relationship between visual receptive fields and the connections among the neurons that create it is conveyed effectively. Students often find it difficult to understand the relationship between the two-dimensional receptive field on the retinal surface with the underlying neural circuitry because most texts fail to illustrate these concepts or portray them in separate figures. (I have seen such an illustration in only one other undergraduate text that is no longer in print.) Another illustration in Klein's text rarely found in others debunks the long held myth that regions of the tongue are differentially sensitive to taste qualities.

A companion web site for the text is available to students without the need for a passcode ([www.prenhall.com/klein](http://www.prenhall.com/klein)). For each chapter, the web site describes each chapter's goals and objectives and

provides a variety of self-testing forms that include multiple choice, figure labeling, true/false, fill in, and essay questions. These self-tests can be scored (with the exception of the essay questions) and the results emailed to the student, professor, and/or teaching assistant. It is also possible for professors to post their syllabus. Klein's illustrations are not available as transparencies, but they are available as individual files and in a PowerPoint presentation for students and faculty to view or download from the web site. The web site also includes topical links to other web sites, but not all links have been recently updated. A student study guide is also available in print. For instructors, the publisher provides an instructor's manual, test making software (for PC and Mac), and a test item file. In addition, the website contains lecture content suggestions and class activity suggestions for faculty.

In conclusion, Klein's *Biological Psychology* text successfully combines a thorough presentation of neuroscience research findings and theory with a clear and engaging style to which undergraduate students respond positively.