

When Barry Tarshis and I first decided in the early 1970s to collaborate on a textbook in physiological psychology, we had a clearly defined goal: to produce a textbook that would not only give undergraduate students a solid foundation in this dynamic science but would also prove to be more accessible and more enjoyable to read than other textbooks in the field. Our conviction at the time was that it was possible to present complex concepts clearly, coherently, and engagingly without oversimplifying, without talking down to students, and without sacrificing either the quality or the amount of information contained in the book.

Physiological psychology itself, of course, has changed dramatically since the first textbook was published a little more than 20 years ago, and the concepts, if anything, have become more complex than ever. What has *not* changed, however, is our conviction that the complexity of subject matter and the readability of a textbook covering this subject are not incompatible. So once again, as we have done in our previous work, we have shown equal concern for both the information we present and the manner in which we present it.

Instructors familiar with our earlier textbook—*An Introduction to Physiological Psychology*—will notice immediately that we have made a number of significant changes in our newest work, which is not simply a revision of our earlier textbook but is, in fact, a new and much more comprehensive book.

The most obvious difference between this book and our previous book, one that we made at the request of many instructors who have used our book in the past, is that we have reduced the number of chapters from 26 to 18—without, however, cutting down on the topics we cover or the depth with which we cover these topics. The reason behind this change was to make the organization of the book conform more smoothly to the typical school calendar.

In spite of the reduced number of chapters, *Elements of Physiological Psychology* is more comprehensive than its predecessor and, as such, is geared to a larger audience. Of course, expanding the scope of the

book while cutting back on the number of chapters was a difficult challenge, but we think we have met that challenge, and we have done so by relying on many of the same techniques that we used successfully in our previous book. Because we have always operated under the assumption that many of your students do not have strong backgrounds in the physical and biological sciences, we have kept the language simple and direct and have avoided the all too common tendency in scientific textbooks to explain complicated technical concepts with equally complicated technical jargon. We have also tried to link every concept we introduce not only with concepts encountered earlier in the same chapter but earlier in the book as well. Indeed, we have taken special pains to ensure that students see the continuity of the principles that underlie physiological psychology.

As we did in our previous book, we have tried to strike a productive balance between information about experimental developments and information about clinical applications. And even more than we did in our previous book, we have gone out of our way to relate the concepts and processes we describe to issues and ideas that your students can recognize and identify with. Finally, we have tried to be highly selective about the experiments we've cited, describing only those of special significance or interest.

The change in the number of chapters notwithstanding, the basic structure of this textbook is essentially the same as it has always been. We begin by giving students a historical perspective of physiological psychology, and we devote the next several chapters (Chapters 2–5) to the nervous system, beginning with the neuron (2), then the structure (3) and function (4) of the nervous system, and ending with a close look at the neurochemical basis of behavior, including psychopharmacology (5). Sensory and motor processes are covered in the next five chapters (6–10): one devoted to vision (7); one combining audition, smell, and taste (8); one devoted to the cutaneous senses (including pain); and one devoted to the mechanics of movement. Eating and drinking have been combined into a single chapter (11), followed by chapters on sleep (12), and sex (13).

As we did in our last book, we have divided emotion into two chapters. The first (14) deals with the neural basis of emotion; the second (15) deals with the neural basis of psychological disorder including the anxiety disorders, depression, and schizophrenia. The three final chapters deal with learning, memory, and the localization of higher-order functions such as language. We've been careful, however, to keep the organization of the book as flexible as possible. Thus you can follow the order of chapters as presented or, within reason, alter it to your preference.

Two other key differences between this book and our earlier book are worth noting. The first is that we have put more emphasis than ever on the figures used throughout the book, many of which are now in color. The second is the addition at the end of each chapter of not only a summary of key points and suggested readings but a list of key terms as well. You will notice, finally, that references come at the end of the book, rather than the end of each chapter.

There are a great many people without whose help, advice, and support this book could never have been written, and I want to offer my heartfelt thanks to all of them. Among those I want to single out in particular are a group of my colleagues, all of them dedicated teachers and scientists. This very special group of people includes the following:

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