
Preface

Learning: Principles and Applications seeks to provide students with an up-to-date presentation of the current knowledge in learning. Basic principles are described and supplemented by research studies to provide validation of those principles, and both classic experiments and important contemporary studies are incorporated into the text. The fourth edition continues to uphold the same uncompromising scholarship of earlier editions. Psychologists who study the nature of the learning process have uncovered many important principles about how we acquire information about the structure of our environment and how we use this understanding to interact effectively with our environment. As in earlier editions, the fourth edition provides a thorough, up-to-date coverage of such principles and applications.

Much exciting new research in learning has occurred in the last few years, and I focus attention on these findings throughout the text. Some of the key new discoveries include the conditioning of immune system suppression, the identification of behavioral economic principles in operant conditioning, the determination of conditions that lead to a reinforcer being devalued, the recognition of processes that provide the reinforcing power of psychoactive drugs, the study of the question of whether language learning occurs in primates, and the relevance of memory reconstruction to understanding the validity of repressed memories.

As in previous editions, the text presents the important contributions of both human and nonhuman animal research, as both are crucial to our understanding of the learning process. In many instances, nonhuman animal studies and human research have yielded identical results, indicating the generality of the processes governing learning. While there are many general laws of learning, there are also instances in which species differ in their ability to learn a particular behavior. The use of different animals has shown that biological character affects learning. Furthermore, in some situations, only animal research can be

ORGANIZATION

Based on feedback from users of the previous edition of the book, the discussion of theories of learning has been moved to follow the presentation of the basic learning principles. This change allows the student to understand the basic principles by which behavior is learned or eliminated before the discussion of the nature of that learning. Brief descriptions of chapter coverage follow.

Chapter 1 gives a brief introduction to learning as well as a discussion of the origins of behavior theory. The student is first introduced to basic learning principles through a description of the research findings and theories of Thorndike, Pavlov, and Watson. The importance of their work will be evident throughout the text. A brief presentation of the ethics of conducting research is also included in this chapter.

Chapter 2 describes the nature of instinctive processes and how instincts govern behavior. This chapter also describes two learning processes, habituation and sensitization, by which experience can alter instinctive behaviors. Opponent process theory, which describes the affective responses both during and following an event, also is introduced in this chapter.

Chapter 3 details Pavlovian conditioning, a process that involves learning when and where events will or will not occur. This discussion first explores the factors that govern the acquisition or elimination of conditioned responses. Several procedures (higher order conditioning, sensory precondition, and vicarious conditioning) in which a conditioned response can be learned with direct CS-UCS pairings can be found in this chapter. Several of the Pavlovian conditioning principles that have been used to establish effective and eliminating impairing conditioned responses are also presented.

Chapters 4 and 5 describe instrumental or operant conditioning, a process that involves learning how to behave in order to obtain the positive aspects (reinforcers) and avoid the negative aspects (punishers) that exist in our environment. The variables influencing the development or extinction of appetitive or reinforcer-seeking behavior are described in Chapter 4, while Chapter 5 presents the determinants of escape and avoidance behavior as well as the influence of punishment on behavior. The use of reinforcement and punishment to establish appropriate and eliminate inappropriate behavior also is described in these chapters.

Chapter 6 describes traditional learning theory. The theories of Hull, Spence, Guthrie, Tolman, and Skinner are explored in this chapter. The student will be able to see the changes that have taken place in the understanding of the nature of the learning process during the first half of the 20th century.

Chapter 7 discusses the environmental control of behavior and how the stimulus environment can exert a powerful influence on how we act. A discussion of stimulus generalization and discrimination learning is the major focus of the chapter. Special attention is given to understanding the difference between the eliciting and occasion-setting functions of conditioned and discriminative stimuli.

Chapter 8 describes the cognitive processes that affect how and when we behave. This chapter examines the relative contributions of expectancies and habits to determining one's actions. The relevance of cognitive learning for understanding the causes of depression and phobias also is discussed in this chapter.

Chapter 9 describes the ideas of contemporary learning theories. This chapter discusses these contemporary views on the nature of the learning process as well as how these ideas have been shaped by the theories developed by previous generations of psychologists. These contemporary theories have focused on an examination of the nature of Pavlovian conditioning and an understanding of behavioral economic principles.

Chapter 10 discusses the biological processes that influence learning. In some instances, learning is enhanced by instinctive systems, whereas in others, learning is impaired by our biological character. This chapter also describes the biological processes that provide the pleasurable aspects of reinforcement and the negative aspects of punishment.

Chapter 11 details three complex learning processes. This chapter explores how we identify concepts, solve problems, and learn to use language. A discussion of animal cognition is an important focus of this chapter, and the issue of whether language is unique to humans is one of the key areas of this discussion.

Chapters 12 and 13 discuss memory, the process that allows us to retain the influence of a learning experience into the future. The nature of memory storage and the encoding or organization of our experiences is described in Chapter 12. The processes that allow us to retrieve some experiences or forget others are detailed in Chapter 13. Further, the biological basis of memory storage and retrieval is presented in these chapters.

PEDAGOGICAL FEATURES

Pedagogy remains a central feature of this new edition, but approaches have been reworked to enhance their impact. In addition, all-new pedagogical features have been added to promote students' understanding of the learning process and better enable them to see its relevance to their everyday lives.

Vignettes. A vignette opens each chapter, and some chapters include vignettes within the chapter as well. This pedagogical feature serves three purposes: First,

it lets students know what type of material will be presented in the chapter and provides them with a frame of reference. Second, the vignette arouses the student's curiosity and enhances the impact of the text material. Third, references to the vignette have been incorporated into the text to give it a seamless quality. I have found that students like the chapter-opening vignettes, and I believe that their use solidifies the link between the text material and the students' lives.

"Before You Go On" Sections. I have included two critical thinking questions in each of the *Before You Go On* sections, which appear throughout the chapter. The *Before You Go On* questions ensure that the students understand the material and allow them to apply this knowledge in original, creative ways. My students report that the use of this pedagogy is quite helpful in understanding what can be difficult concepts.

"Application" Sections. Although applications of the text material are presented throughout, each chapter has at least one stand-alone application section. Many of the discoveries made by psychologists have been applied to solving real-world problems. These applications demonstrate that psychologists are interested in solving problems and not merely in accumulating knowledge. The application sections also enhance the relevance of the abstract ideas presented in the text, showing the student that the behaviors described do exist and are not just laboratory phenomena.

"Chapter Summaries." I have provided a review of key points at the end of each chapter, as another tool for students to check their understanding of the material that has just been covered. Once the students have read the chapter, they can easily use the review sections as a study guide to prepare for examinations.

"Critical Thinking Questions." Critical thinking questions in the form of scenarios are presented at the end of each chapter. Answering these questions requires creative application of one or more of the major concepts presented in the chapter, further assisting students in relating the principles presented in the text to situations that they may encounter in the real world.

SUPPLEMENTS

Instructor's Manual/Test Bank (0-07-2490470). This Instructor's Manual/Test Bank provides many useful tools to enhance your teaching. For each chapter, a general overview, a detailed chapter outline, teaching tips, and activities are provided. The Test Bank portion of this manual includes 50 questions for each chapter: 25 multiple choice, 15 true/false, and 10 fill-in-the-blank questions.

Custom Website (0-07-249048-9). The custom-crafted website to accompany *Learning, Fourth Edition* includes a number of resources for instructors and students to enhance their teaching and learning experience. For the instructor, this website includes an image gallery and Web links. The student portion of the site

includes a Guide to Electronic Research, Web resources, Internet exercises, key terms, practice quizzes, and Web links. Visit it at www.mhhe.com/klein4.

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Stephen B. Klein
Mississippi State University