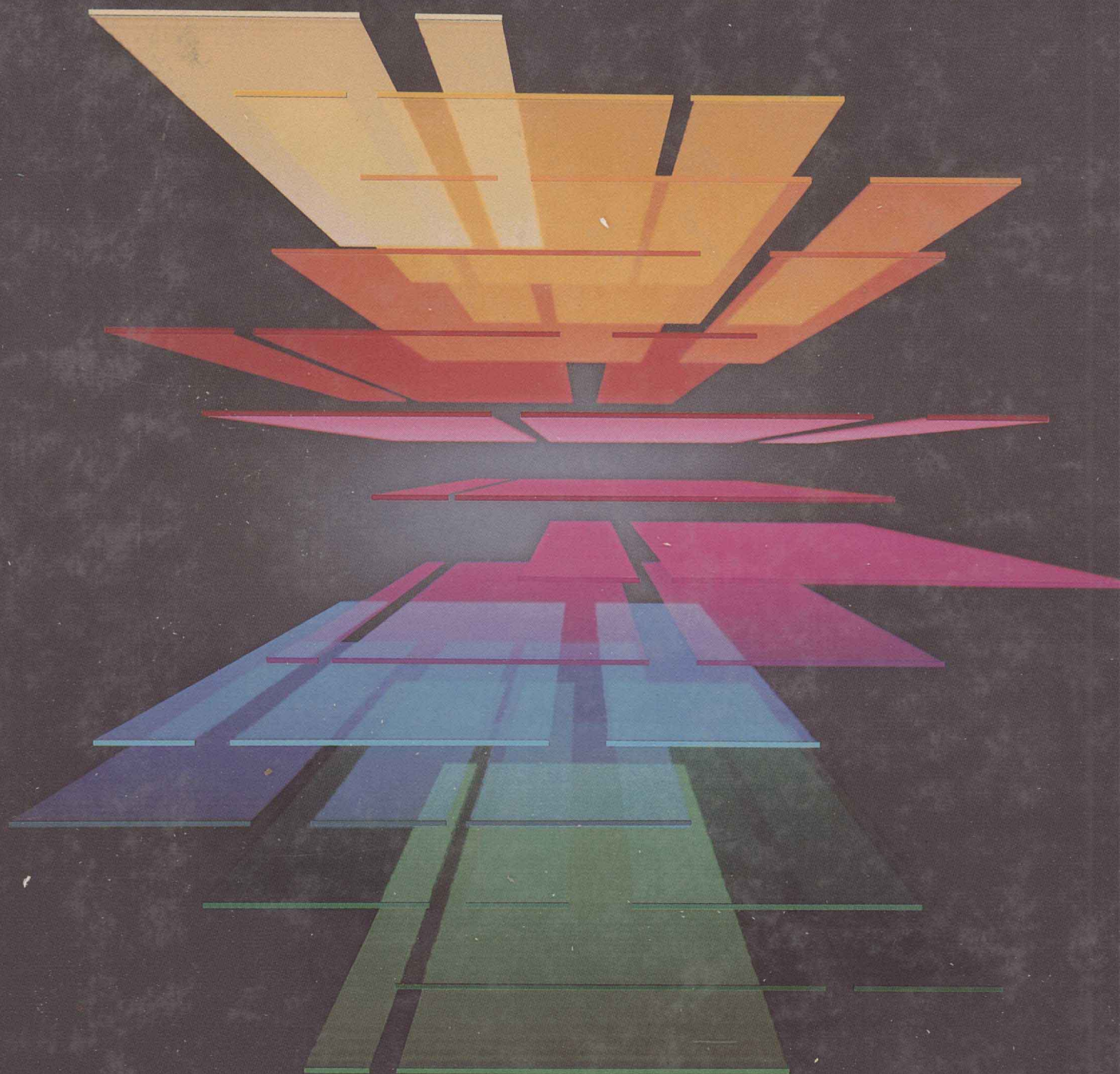


Psychology



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Second Edition

Psychology

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Williams College

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Preface

In our years of team teaching introductory psychology, we have found that it is both the single most important course in the undergraduate psychology curriculum and, at the same time, the most difficult to teach.

The goals of the introductory course are ambitious: to introduce students to the structure of contemporary psychology, to present the central concepts and theories of the discipline, and to outline the empirical tools that psychologists use. In addition, the instructor will want to communicate a sense of the accomplishments, promises, and continuing vitality of a discipline that takes as its subject every aspect of human behavior and cognition.

Achieving these goals is difficult for two reasons. One is the challenge of presenting the richness of the discipline without overwhelming students with the vast and diverse number of terms and concepts traditionally covered in the introductory course. A second reason is that well-meaning efforts to simplify the material may lead students to regard psychology as a loose collection of distinct fields, rather than as a unified discipline.

The adoption of the first edition of *Psychology* in colleges and universities throughout the U.S. and Canada leads us to believe that our solutions to these challenges have been well received by both instructors and students. These solutions fall into two general classes: (1) a focus on psychology as an integrated discipline and (2) careful attention to pedagogical principles.

Our focus on psychology as an integrated discipline is expressed in several ways. We have organized the material in a manner that emphasizes the major perspectives that unify and inspire all research in the subfields within psychology. We have also taken great care to emphasize the research methods that guide psychological inquiry into the questions posed by human behavior and cognition. We believe that introductory

psychology can and should be taught as a subject unified in the way psychologists frame questions and seek answers.

In addition, a major aim of this text is to demonstrate in its exposition that the subfields of psychology are mutually supportive and overlapping. For example, the student will find neurochemistry discussed in chapters on brain and behavior, psychological disorders, and treatment. Theory and research on learned helplessness informs discussions in chapters on learning, stress, and psychological disorders. Hypotheses derived from psychoanalytic theory are discussed in fully half the chapters. Problems of human memory are addressed in chapters on memory, child development, and social perception.

Nor does this text distinguish in any structured way between psychology and the applications of psychology. We have no special sections or boxes devoted to "showing the relevance" of what psychologists do and think. Thus, Janis' analysis of "groupthink" forms part of our discussion of decision making; Schachter's work on obesity is considered in context with hypothalamic "feeding" centers. In these and many other instances, we hope to communicate to the student that "applied psychology" is not a different kind of psychology but rather flows naturally from the principles and methods of general psychology. Beyond this, the message is that psychology is inherently relevant and interesting independent of the particular question or topic being addressed.

Our second strategy in writing this book, our careful attention to pedagogy, will not spare the student from the complexity of psychology. Rather, we have worked to present this rich information in a manner that promotes comprehension and assimilation. Within chapters, we have taken great pains to provide overviews and to use principles and theories to provide a framework within which information can be organized and put into perspective. We have also paid

particular attention to the sequencing of topics and to the transitions between them. Within topics we have followed a flexible scheme of previewing, discussing, exemplifying, drawing implications, and summarizing. Terms and concepts are defined and given meaning within the expository context. In addition, our examples are more often than not drawn from research, which encompasses both classic and exemplary contemporary studies. These research examples are used both to illuminate important concepts and to illustrate for the student the unique contribution of psychology as an intellectual discipline.

In addition to incorporating these pedagogical principles, we have also sought to make the text engaging to the reader. We have not hesitated, where appropriate, to address the reader directly, to ask rhetorical questions, or to exemplify by reference to college students' experiences and concerns. In addition, we have attempted to personalize the subject matter by means of interviews with 17 eminent psychologists, one of which opens each chapter. We have asked each interviewee to introduce the content of the ensuing chapter by (1) explaining the importance of the area covered, (2) describing his or her own contributions to the area, (3) outlining important applications, and (4) assessing exciting new developments. These interviews worked well in the first edition of *Psychology*. Users will note that each interview of the second edition has been completely redone and that we have drawn on different interviewees in 8 cases. These revisions reflect our desire to present to students the contemporary face of psychology with all its intellectual fervor and breadth.

In preparing this second edition, we have received a large number of very helpful suggestions from first edition users. More often than not we have followed their advice to delete or to add, to simplify or to elaborate, to reorganize or to fine tune. We thank them for helping us strengthen the book. Virtually every chapter has undergone significant revision with the aim of enhancing its accessibility, balance, and currency. As examples, chapter 2—Brain and Behavior—contains a new section on disorders of the brain, featuring a discussion of Alzheimer's disease; chapter 5—States of Consciousness—includes completely new

material on the attentional versus automatic information processing distinction, on sleep disorders, and on the use of hypnosis in eye-witness testimony; chapter 8—Thinking and Language—has been updated with a discussion of artificial intelligence; and chapter 13—Social Perception—features a new discussion of social cognition, schemata, and belief change. In addition, material presented in boxes in the first edition has, where pertinent, been revised and incorporated into the text. We find that this change results in a more streamlined, less distracting, and more comprehensible organization of material.

This edition comprises 17 chapters organized into a new grouping of six parts, plus an introductory chapter on history, methods, and perspectives. Part 1 discusses the relationship of biological processes to behavior and mental activity. Here we examine the central nervous system (chapter 2), followed by chapters on sensation and perception (3), motivation and emotion (4), and states of consciousness (5). Part 2 deals with learning and cognition, containing chapters on conditioning and learning (6), memory (7), and thought and language (8). Part 3 reflects the discipline's recent recognition of development over the life span, with separate chapters on childhood (9), and adolescent and adult development (10). The new part 4 groups chapters on intelligence (11) and on personality and assessment (12) under the rubric of individual differences. The new part 5 is devoted exclusively to social psychology, considering both social perception (13) and social influence (14). As in the first edition, part 6 surveys psychological disorders and treatment. It includes chapters on stress and stress disorders (15), psychopathology (16), and therapy (17). Finally, we have provided an appendix dealing with statistical methods.

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We would like to thank our editors at Scott, Foresman who guided us through the planning and completion of this edition. Psychology editor Scott Hardy helped immeasurably in defining the audience for and structure of the book, as well as in organizing a creative package of ancillary materials.

Betty Slack, our developmental editor, wisely and patiently shaped the multitude of revisions the book has undergone, and in addition guided the development of the new ancillary materials. We appreciate their encouragement, good humor, and effective direction. Cathy Wacaser, project editor, applied the finishing touches by copy editing the entire manuscript and overseeing the project through the production cycle. Iris Ganz provided invaluable secretarial assistance, including transcription of the 17 interviews. We are grateful for their helpful contributions.

We were also fortunate to have the services of Michael D. Biderman, who skillfully wrote the Statistical Appendix, which will well serve the interested student.

Several colleagues at Williams have lent their advice and expertise in clarifying particular treatments. They are Laurie Heatherington, Saul Kassin, Colleen Kelly, and Thomas McGill. Dr. Richard Berlin of Berkshire Medical Center has likewise contributed to this edition. We also thank Angie Giusti and Joan Martin, whose help in organizing our duties has saved us from disaster on more than one occasion.

We would also like to extend our thanks to the 17 distinguished psychologists who contributed their time to the interviews you will find at the beginning of each chapter. We hope that the interviewees' comments on the contributions and applications of psychology and its promising new developments will communicate the depth and breadth of psychology to students in a personal way. The eminent psychologists interviewed for this edition are George W. Albee, John Darley, John Garcia, Richard Gregory, Richard J. Herrnstein, Ernest R. Hilgard, Edward E. Jones, Jerome Kagan, Arnold A. Lazarus, Richard S. Lazarus, Elizabeth F. Loftus, Katherine Nelson, Bernice L. Neugarten, Judith Rodin, Sandra W. Scarr, Jerome L. Singer, and Richard F. Thompson.

A special acknowledgment goes to the psychologists who worked together to provide a supplementary package of outstanding quality and integration. We are confident that their efforts will result in improved learning and performance by students as well as crucial time saved for instructors. The supplement authors are Ron Peters, Michael O'Boyle, Rick Gibbons, and Meg Gerrard of Iowa State University.

Test item contributors are James Dykes, University of Texas at San Antonio; Carolyn Meyer, Lake Sumter Community College, and Ralph Hansen and L. W. McCallum, Augustana College. We also thank John Ory of the University of Illinois who reviewed and coordinated all test questions.

Finally, we want to thank the many colleagues who reviewed our manuscript and gave generously of their time and knowledge. To all, we extend our gratitude.

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Andrew B. Crider
George R. Goethals
Robert D. Kavanaugh
Paul R. Solomon

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by Michael D. Biderman

The University of Tennessee, Chattanooga

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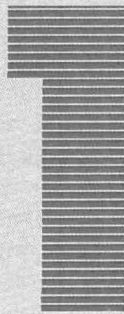
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A Conversation with



Richard J. Herrnstein

Richard J. Herrnstein is Edgar Pierce Professor of Psychology in the Department of Psychology and Social Relations at Harvard University. Dr. Herrnstein is an experimental psychologist whose interests include behavior theory, the history of psychology, and systems of psychology. He is the editor of *Source Book in the History of Psychology* (Cambridge, MA: Harvard University Press, 1965). Dr. Herrnstein's recent publications include "Riddles of Natural Categorization" in *Philosophical Transactions of the Royal Society* (London, 1985); and (with J. Q. Wilson) *Crime and Human Nature* (New York: Simon and Schuster, 1985).

In general what can we learn by studying psychology and why is it important?

I think that psychology is the queen of the social sciences. All of the social sciences—economics, political science, history, sociology—deal in one way or another with the behavior of people. Since that very subject is the heart of psychology, psychology bears the same relationship to the other social sciences that basic physics courses do to the physical sciences. I think psychology can be thought of as a foundation for studies in social sciences generally and then it's interesting in its own right just as physics is.

You are known for your contributions to understanding the history of psychology. What can we learn by studying that history and why is it important?

One interesting thing about the history of psychology is that the history of psychology is much, much older than the field of psychology. There's no point in the history of thought during which people have not had psychological theories. The ancient Egyptians had theories of psychology, the Bible is full of them, the Greeks, the Romans, etc. We were well into the twentieth century, however, when there first became professorships in psychology and professionals who referred to themselves as psychologists. The history of psychology really merges with many other ancient subjects such as philosophy, economics, and political science.

The matching law has been one of your most important contributions to psychology. Can you tell us about it?

Well, I'll try. The matching law is just a simple principle of choice. It says that when an animal is making a choice between comparable responses, then

the ratio of those responses is equal to the ratio of the reinforcements obtained. The ratio of behavior matches the ratio of reinforcements. That was first observed back in about 1960 using pigeons as subjects and has since been observed in a number of other species, including human subjects in suitable experiments. Generally speaking, people distribute their time in some ratio of payoffs from it, so you see it qualitatively every place you look. One thing that people have noticed about matching law is that it does have the following implications. It says that the strength of any behavior is directly related to its own reinforcement. The more reinforcement you get for a behavior, the more you do it. But, it's also inversely related to the reinforcements you get for everything else you do. Suppose you are looking at a particular item of behavior like playing bridge. The amount of the time that you spend playing bridge is directly related to how much reinforcement you get. That's pretty obvious. It's also inversely related to how much reinforcement you get from doing everything else. If you want to reduce your bridge playing, maybe the easiest way to do it is to find a competing interest that has its own reinforcement. The bridge playing will go down.

This is a principle that is closely related to ideas in modern microeconomic theory, that is, notions of reinforcement for utility maximization. It's not quite the same but it's related. To go back to the history, you only have to go back about 150 years before the two subjects, psychology and economics, converge into a single set of ideas and people, etc. Some part of the field of each discipline is descended from the utilitarians of the 1800s. They both have Jeremy Bentham as a direct ances-