Foundations of Psychology John Lamberth John C. McCullers Roger L. Mellgren



FOUNDATION/ OF PYYCHOLOGY

John Lamberth

John C. McCullers

Roger L. Mellgren

UNIVERSITY OF OKLAHOMA

Sponsoring Editor: George A. Middendorf Special Projects Editor: Mary Lou Mosher

Project Editor: Robert Carola Designer: Rita Naughton

Production Supervisor: Francis X. Giordano

Photo Researcher: Myra Schachne

Compositor: Ruttle, Shaw & Wetherill, Inc. Printer and Binder: Rand McNally & Company

Art Studio: Vantage Art, Inc.

FOUNDATIONS OF PSYCHOLOGY

Copyright © 1976 by John Lamberth, John C. McCullers, and Roger L. Mellgren

All rights reserved. Printed in the United States of America. No part of this book may be used or reproduced in any manner whatsoever without written permission except in the case of brief quotations embodied in critical articles and reviews. For information address Harper & Row, Publishers, Inc., 10 East 53rd Street, New York, N.Y. 10022.

Library of Congress Cataloging in Publication Data

Lamberth, John. 1936-

Foundations of psychology.

Bibliography: p.

Includes index.

1. Psychology. I. McCullers, John, C. 1930-

joint author. II. Mellgren, Roger L., 1944-

joint author. III. Title. [DNLM: 1. Psychology.

BF121.L222f]

BF121.L216 150

75-28125

ISBN 0-06-043832-0

Front cover: MYCENAE, oil on canvas, by Franz Kline, 1958. Used with permission of the Estate of Franz Kline, courtesy of the David McKee Gallery, New York.

FOUNDATION/ OF PYYCHOLOGY

To Shirley Alice Karen

Preface

"Why can't we find an introductory book we can respect and our students can understand, and maybe even enjoy?" This question grew out of a lot of frustrations, both ours and our students', from working with and studying from the available crop of introductory texts.

The question set our goals. First and foremost we wanted to write a book that was scholarly and current. Our many reviewers have indicated that we have succeeded. Second, we wanted the text to be interesting and understandable without succumbing to the fad of "ultrarelevance." We are psychologists who enjoy our work, are enthusiastic about our profession, and very curious about why students find most introductory courses boring. If their textbook is incomprehensible and/or boring to them, then even a great teacher must use extraordinary methods to make the course interesting. Time and the response of teachers and students will tell whether our second goal has been realized.

Even though psychology is a fascinating topic, introducing it can be difficult. An introductory text should help the instructor sustain the initial enthusiasm of students. To this end we designed a book that doesn't cover every psychological specialty—the field is too broad—but covers selected topics to give an overview of the field, and at the same time lets the teacher present the subject flexibly and creatively.

The physical plan of the book is apparent in the Table of Contents. We did not follow the current trend of putting the more difficult or less popular areas, such as statistics or physiological psychology, in appendices. We felt that if a topic was important enough to be included, the body of the text was the place for it. This has an added advantage for instructors whether they agree with us or not. If you do agree with us, you don't have to be "the ogre who assigns material the authors didn't even think important enough to include in the main part of the book." If you don't agree with us, you can make yourself popular with students by omitting these chapters.

There are several features, some unique and some not so unique but still helpful, that we have included to fulfill our aims. We wrote with an informal style, one that our reviewers say held their attention. Also, in this day of college students with reading difficulties, we wrote with reading level in mind. As analyzed by the Fry method of readability, the book is written at the eleventh-grade level. Lest this sound low to some of the uninitiated in the area of reading problems, many of our major universities have 25 percent or more of

their students take remedial reading (more on this is in the Teacher's Manual). Additionally, review questions have been placed throughout each chapter to help students review the material they have just read and to come back at a later date to start their restudy. Because these serve the major purpose of a student handbook (which our students seldom seem to buy), there is no separate study guide to accompany the text. Finally, there are boxes throughout the book, which detail psychological research with an emphasis on application and/or involving the student, and there are glossaries at the end of each chapter.

An integral aid to any course is a manual to assist the teacher in more fully understanding our thinking about each section of the book, and to suggest lecture additions, movies, and other teaching aids. There is a Teacher's Manual accompanying this book. It differs from most other such guides in two respects. First, because we view the Teacher's Manual as extremely important, we wrote it ourselves. Second, we have done a great deal of research into student motivation and developed a method of motivating students that has been tremendously successful in producing higher grades, while raising academic standards. This research is detailed in the Teacher's Manual, and many of the elements of the program that are time-consuming are provided for the instructor.

Thanking those persons who played a vital part in translating an idea into a book is a very real pleasure. It has almost become trite to thank someone for translating illegible writing on various and sundry scraps of paper into a legible manuscript, but we will put our mountain of paper up against any other in a winner-take-all contest. Our thanks to Marla Frick for making it legible. John M. Knight, Kenneth McGraw, Wayne Padd, and Jeffrey Seybert assisted in a variety of important capacities. We owe a great deal to the many reviewers: Professor John Barlow, Kingsborough Community College; Professor S. Howard Bartley, Memphis State University; Professor Ledford J. Bischof, Northern Illinois University; Professor John C. Brigham, Florida State University; Dr. Foster L. Brown, State University of New York-Oneonta; Professor Cameron L. Fincher, University of Georgia; Professor George Herrick, State University of New York Agricultural and Technical College; Professor Jerome Kagan, Harvard University: Professor Robert L. Karen, California State University— San Diego; Professor Joel F. Lubar, University of Tennessee: Professor William L. Mikulas, The University of West Florida; Dr. Melvyn Schnall, Gateway Counseling Service. Their comments, suggestions, and ideas were all carefully considered, and a majority of them were heeded. The book is better for their efforts. Professor James H. Booth reviewed the manuscript at three different stages of the preparation and provided cogent, incisive, and relevant criticisms, which have greatly improved the book. We thank him, and report that our egos have recovered from the sharpness of his graphite-tipped tongue. George A. Middendorf of Harper & Row provided guidance, wisdom, and encouragement. Myra Schachne provided great assistance in the final selection of photographs. A special word of thanks is due to Mary Lou Mosher and Robert Carola, who are

viii PREFACE

not only superbly competent professionally, but are also pleasant people to work with. The book is greatly improved stylistically and artistically because of their efforts. Last, but not least, we thank our respective families who suffered through the immense amount of time taken to write an introductory book and the great number of dislocations of family plans required to bring it to life.

1975

JOHN LAMBERTH JOHN C. McCULLERS ROGER L. MELLGREN

To the Student

There are several features in this book that are meant for your enjoyment and to help you. We tried to write the book in a manner you could understand, rather than to impress our colleagues. We hope you will find it interesting and exciting, because we are excited about psychology. Throughout the book you will find boxes which talk about the application of psychology to everyday problems and/or to things you can do to give you a better idea about what psychologists do. For example, one box tells you how to observe a child and discover something about the child as a person. Other boxes discuss what you tell people with the pupils of your eyes, when and how much you dream, and whether you should get "psyched up" for an exam. We hope you like all the boxes

An important part of any course is learning the material and preparing for exams. Throughout the book we have inserted review questions, usually several sets in each chapter. In this way you can read a short section of the book and immediately review it. Then, when you return to restudy the material before an exam, these study questions will give you an idea about how much you remember. There are multiple-choice, fill-in-the-blanks, and essay questions (although not every section has each type). The answers to the multiple-choice questions are printed at the end of each question section. Don't refer to the answers until you have marked down your answers, or you will defeat their purpose. The answers to the fill-ins are in the margins next to the questions. Cover the answers with a ruler or a piece of paper until you have answered the questions. We do not provide answers to the essay questions, preferring that you think through them and answer them in your own way. They give you further clues to what is important in the text. We hope these study questions assist you in learning the subject matter.

Each chapter has a glossary, list of references, and an annotated bibliography. Every word you see in the text in bold-face type is defined in the glossary. You may look for any word you don't understand in the index, and if it is defined in one of our glossaries the bold-face page entry is the page on which you can find the definition.

Most students enter introductory courses with a good deal of enthusiasm for and interest in psychology. We wrote this book to help you survey and gain some feeling for psychology. If we hold your interest and make you curious for more, we will have succeeded.

Content

ix

Chapter 1. PSYCHOLOGY AT WORK

Preface vi

To the Student

From Mind to Behavior 3 Psychological Research 7 Behavioral Engineering 10 Applications of Psychological Knowledge 23 Humans as Experimental Subjects 30 The Use of Animals in Psychological Research 34 Drugs 39 Summary 44 Glossary 45
Chapter 2. PSYCHOLOGICAL MEASUREMENT AND STATISTICS 47
Why Do Psychologists Need Measurement and Statistics? 48 Box 2.1. How to Identify a Good Salesman: A Short Lesson in Face Validity 53 Box 2.2. Understanding How Correlation Works 64 Summary 68 Glossary 68
Chapter 3. CHILD DEVELOPMENT 71
What Is Development? 72 Box 3.1. Dietrich Tiedemann's Observations on Infant Development in the Eighteenth Century 74 How Knowledge about Child Development is Obtained 77 Box 3.2. A Sample Form for Recording Child Observations 80 Box 3.3. A Sample Form for Interviewing Children 86 Some Aspects of the Child's Physical Development 92 Box 3.4. Physical Growth Rate of the Fetus 93 Two Theories of Child Development 106 Summary 114 Glossary 116
ix

Chapter 4. INSTRUMENTAL LEARNING 119
Box 4.1. 122 Instrumental Learning Procedures 121 Box 4.2. Premack's Principle 126 Box 4.3. Negative Reinforcement 132 Box 4.4. Punishment and Fighting 139 "Theoretical" Approaches to Instrumental Learning 141 Acquisition and Maintenance of a Response 143 Discrimination and Generalization 154 Box 4.5. Reinstatement of Verbal Behavior in Psychotics: Discrimination and Generalization 156 Box 4.6. Establishment of Control in an Out-of-control Class of Third- and Fourth-graders Using "Points" as Token Reinforcers 160 Summary 161 Glossary 161
Chapter 5. CLASSICAL CONDITIONING 165
Box 5.1. Classical Conditioning and Liking 170 Procedures Used in Classical Conditioning 172 Box 5.2. Implosion Treatment of a Phobia 178 Comparisons of Classical Conditioning and Instrumental Learning 178 Box 5.3. Counterconditioning: Systematic Desensitization 180 Box 5.4. Teaching the Heart What To Do 184 Current Topics in Classical Conditioning 193 Summary 196 Glossary 197
Verbal Learning 202 Box 6.1. The Importance of Meaningful Organization 207 Box 6.2. Learning Can Be Nonsense: Make This Simple Test 210 Box 6.3. Paired Associates: An Adventure in Rote Learning 216 Association: A Brief Look at an Old Problem 223 Concept Indentification 230 Box 6.4. A Concept Identification Problem 233 Summary 234 Glossary 235
Chapter 7. CONCEPTUAL BEHAVIOR AND SYMBOLIC PROCESSES 239 The Development of Intellect: Piaget's Theory 241 Box 7.1 Who Has More Orange Injug? 249
Box 7.1. Who Has More Orange Juice? 248 Language: A Symbolic Process 255

Language in the Chimpanzee 258
Language: Behavioral Inheritance or Cultural Learning? 269
Reasoning and Problem Solving 272
Box 7.2. How Would You Tie the Two Strings Together? 277
Box 7.3. Bring Back 3 Quarts of Water 278
Summary 280
Glossary 281

Chapter 8. MOTIVATION AND EMOTION 285

Internal and External Motivation 287 **Biological Motives** Frustration and Conflict as Motivational Stress 292 Curiosity and Exploration 298 Box 8.1. Wars, Wife-Beaters, and Other Bad Things: Displacement 300 Aggression 306 Box 8.2. Television and Violence 316 Social Facilitation of Emotion 317 Box 8.3. Let's Start a Riot 318 Box 8.4. Fasting Fat French Freshmen Fly Farther for Fine Food 322 Summary 324 Glossary 324

Chapter 9. PERSONALITY CHARACTERISTICS 327

Anxiety 329 Authoritarianism 334 Box 9.1. Psyching-up for an Exam 335 Box 9.2. A Jury of Your Peers 339 Motivation in Personality Box 9.3. It's a Great Day for a Riot 347 Need for Achievement 350 Box 9.4. n-Ach and Actual Achievement 354 Self-Concept 358 Summary 365 Glossary 366

Chapter 10. SOCIAL BEHAVIOR 369

Socialization 371
Box 10.1. The Case of the Disappearing Hamster 378
Attitudes and Attitude Change 382
Box 10.2. Attitudes and Behavior: Law and Order 384
Box 10.3. What's For Dinner?—Fried Grasshoppers 387
Conformity 388

Prejudice 395 Box 10.4. Prejudice—A Learned Behavior? 399 Interpersonal Attraction 401 Box 10.5. Made in Heaven or on a Computer? 405 Altruism 407 Box 10.6. The Broken Bag Caper 411
Chapter 11. INDIVIDUAL DIFFERENCES AND INTELLIGENCE 419
Measuring Individual Differences 421 Psychological Tests 423 Box 11.1. Our IQ Forebearers: Politics and Science 432 Box 11.2. Setting the Hormonostat 440 Intelligence 426 Box 11.3. An Alternative to Jensen 446
Chapter 12. THE DEVELOPING PERSON 455
Physical Maturation 457 Sexual Behavior 465 Box 12.1. The Wild Boy of Aveyron: Sexual Arousal at Puberty 469 Box 12.2. Sexual Behavior in Trobriand Island Children 470 Three Personality Theories 474 Moral Development 488
Chapter 13. PERCEPTION 499
Psychophysics 502 Vision 504 Box 13.1. The Window of the Mind 506 Box 13.2. Move So I Can See You 510 Organization of Perception 512 Box 13.3. Seeing Is Believing? 520 The Development of Perception 521 Box 13.4. Mother and the Visual Cliff 528 Person Perception 529 Box 13.5. Friend or Foe? Watch the Eyebrow 536 Summary 539 Glossary 540
Chapter 14. PHYSIOLOGICAL PSYCHOLOGY 543
Basic Physiology 545 Box 14.1. The Stuff that Dreams Are Made of 546 How the Brain Works: A Case Study 557

Box 14.2. I Just Can't Stop Eating 562
Box 14.3. It Feels So Good. . . . Brain Stimulation in Humans 566
Memory and Consolidation 573
Box 14.4. You Are What You Eat: RNA and Memory 577

Summary 579 Glossary 580

Index 584



Prychology at Work

We talk about being "psyched up" and "psyched out." We see books on the "psychology of Jesus." We hear about football coaches "using psychology" on their teams before a game. Psychology involves many things in life, from test taking to interpersonal relations. But what exactly do we mean when we speak of psychology? The average person might say that it involves a "state of mind" or "the way a person is on the inside," so we could guess that psychology is the study of the mental state of the individual—the study of "what's on a person's mind." Although this easy definition of psychology seems appealing on the surface, it is not a definition that most present-day psychologists would accept. Why not?

How do you know if the next person you meet will be "normal" or "mentally abnormal"? How do you know if your best friend is "normal"? In order to answer such questions you have to know the person. What does it mean to "know" a person? From the viewpoint of modern psychology "knowing" other people means being able to understand and predict their behavior. The popular definition of psychology is the study of the state of mind of the person. The definition of psychology used by most scientific psychologists is the understanding and prediction of behavior. We have just worked our way into an unexpected but basic distinction. You might not yet grasp the importance of this distinction, but then nobody fully appreciated the importance of a distinction between mind and behavior for psychology until about 50 years ago.

Here's an example. Suppose a student in your psychology class suddenly starts banging his head into the chair in front of him in the middle of a class period. What would you say to yourself? "That student is crazy. No normal person acts like that, so he must be nuts." What does your thought show? Your knowledge about the mental state of this student came from what you saw of his behavior. We can never observe the mental state of a person directly. We can only observe a person's behavior. When a person acts in a particular way, we can see and record that behavior. We can never see or record a state of mind. We classify a person as normal, schizophrenic, sexual deviate, or genius on the basis of behavior, what he or she does or says. From the behaviors that we see we can make inferences concerning the person's state of mind. When we observe behavior like head banging in the middle of a class, we make an inference concerning the mental functioning of the student—he's insane—or at least "abnormal" at the moment.

We observe people's behavior and make inferences concerning their minds. Psychology is a science. Any science (like physics, chemistry, or biology) has its basis in observable events. We all can see a rock fall to the ground or two chemicals explode when mixed together. Psychology is not different in principle. In order to talk about psychology as a science we must have observable events. Behavior is observable. Therefore, psychology has come to be defined as the science of behavior.

FROM MIND TO BEHAVIOR

Psychology has not always been defined as the science of behavior. The word psychology comes from two Greek words, psyche and logos, meaning the logic or reasoning of the mind or soul. The ancient Greeks, and a lot of people later on, believed that the only way to know and understand the mind was through thought and reason. The reality of the mind, or of the soul, was no more questioned than the reality of a person's big toe. However, it was thought that the best and purest information about the mind could come only from reasoning and thinking, because reasoning was not hampered by the limitations of the physical body. It was thought that to try to observe the mind or behavior would be largely a waste of time. As time passed, people discovered that information obtained through careful observation often proved to be valuable, whereas information gained only by reasoning did not. Because objective observations yielded more useful information than a purely logical approach, observation became the preferred means of obtaining knowledge. It was in this context that the natural sciences began to develop.

The physical and biological sciences had a few centuries' head start on psychology. Scholars still believed that even though knowledge about the physical world could be gained by observation, the mind could be understood only through reasoning. About a hundred years ago, however, psychology turned to observation and the methods of science. The first "experimental psychology" was not a science of behavior, but a science of the mind. The founder of "scientific" psychology, Wilhelm Wundt, tried to observe the mind directly and to record his observations. Because the only mind available to observe directly was his own, he had to be both experimenter and subject. Although Wundt's plan to study the mind directly seemed logical, the observations of different psychologists, even those trained by Wundt, did not agree.

By the early twentieth century it had become clear that psychology needed something more than observation. If there was ever to be any agreement, the observations would have to be based on external, public events rather than on inner, private experiences. So psychology turned to the study of behavior. Many psychologists still study behavior in order to learn about the mind. Many others, however, are no longer interested in the "mind" at all, and seek simply to understand behavior better. That is how psychology, the science of mental life, gradually developed into behaviorism, the science of behavior.