BEHAVIOR MODIFICATION

What It Is and How to Do It

Garry Martin and Joseph Pear

Behavior Modification

Behavior Modification: What It Is and How to Do It is a comprehensive, practical presentation of the principles of behavior modification and guidelines for their application. Appropriate for university students and for the general reader, it teaches forms of behavior modification ranging from helping children learn necessary life skills to training pets, to solving personal behavior problems. It teaches practical "how-to" skills, including discerning long-term effects; designing, implementing, and evaluating behavioral programs; interpreting behavioral episodes; observing and recording behaviors; and recognizing instances of reinforcement, extinction, and punishment.

Behavior Modification is ideal for courses in Behavior Modification, Applied Behavior Analysis, Behavior Therapy, the Psychology of Learning, and related areas; and for students and practitioners of various helping professions (such as clinical psychology, counselling, education, medicine, nursing, occupational therapy, physiotherapy, psychiatric nursing, psychiatry, social work, speech therapy, and sport psychology) who are concerned directly with enhancing various forms of behavior development. The material is presented in an interesting, readable format that assumes no prior knowledge of behavior modification or psychology. Specific cases and examples clarify issues and make the principles real. Guidelines throughout provide a ready source to use as a reference in applying the principles. Online resources, including an instructor's manual, are available at www.routledge. com/9780815366546.

Garry Martin is internationally known for his eight co-authored or co-edited books, 175 journal articles, and 106 invited conference presentations in six countries on various areas in Behavioral Modification, including intellectual disability, autism spectrum disorder, and sport psychology. He has received numerous honors and awards including induction into the Royal Society of Canada and the Distinguished Contribution Award from the Canadian Psychological Association.

Joseph Pear is internationally known for his work in both Basic and Applied Behavior Analysis. In addition to co-authoring this book with Garry, he has authored two other books and authored or co-authored 12 book chapters, six encyclopedia entries, seven published conference proceedings, two invited newsletter contributions, 60 invited conference presentations and symposia, and 57 peer-reviewed journal articles in diverse areas of Basic and Applied Behavior Analysis. He has received numerous awards and distinctions, including being elected a fellow in Divisions six ("Society for Behavioral Neuroscience and Comparative Psychology") and 25 ("Behavior Analysis") of the American Psychological Association.

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To

Jack Michael, Lee Meyerson, Lynn Caldwell, Dick Powers, and Reed Lawson, who taught us so much and made learning so enjoyable

and

Toby, Todd, Kelly, Scott, Tana, and Jonathan, who live in a better world because of such dedicated teachers

Contents

Preface

■ About the 11th Edition of This Book

This 11th edition of *Behavior Modification: What It Is and How to Do It*, like its predecessors, assumes no specific prior knowledge about psychology or behavior modification on the part of the reader. Those who want to know how to apply behavior modification to their everyday life—from solving personal behavior problems to helping children learn life's necessary skills—will find the text useful. Mainly, however, this book is addressed to two audiences:(a) college and university students taking courses in behavior modification, applied behavior analysis, behavior therapy, the psychology of learning, and related areas; and (b) students and practitioners of various helping professions—clinical psychology, counseling, education, medicine, nursing, occupational therapy, physiotherapy, psychiatric nursing, psychiatry, social work, speech therapy, and sport psychology—who are concerned directly with enhancing various forms of behavioral development.

From our separate experiences over the past 52 years in teaching members of the audiences above, we are convinced that both groups learn the principles of behavior and how to apply them most effectively when the applications are explained with reference to the underlying behavior principles on which they are based. For this reason, as our title implies, this book deals equally with both the principles and the procedures of behavior modification.

Our goals and the manner in which we attempt to achieve them can be summarized as follows:

1. *To introduce the reader to the behavioral orientation of the book (Chapter 1), and to describe the major areas of application of behavior modification techniques for improving the behaviors of individuals in diverse settings (Chapter 2).* Questions for Learning distributed throughout each chapter promote the reader's mastery of the material and ability to generalize to situations not described in the text. These questions can also be used for examination purposes in formal courses.

2. *To teach how to define, measure, and record behavior to be changed in a behavior modification program (Chapter 3) and how to evaluate the effects of behavioral treatments using single-subject research designs (Chapter 4).*

3. *To teach the elementary principles and procedures of behavior modification (Chapters 5–21).* We start with the basic principles and procedures, illustrate them with numerous examples and applications, and increase the complexity of the material gradually. Each of the chapters begins with a case history drawn from the fields of autism spectrum disorder, child development, coaching, developmental disabilities, early education, sport psychology, or normal everyday activities of children and adults. Numerous examples are also given of how each principle operates in everyday life and how it can operate to the detriment of those ignorant of it.

4. *To teach practical how-to skills, such as how to recognize instances of reinforcement, extinction, and punishment and their likely long-term effects; interpret behavioral episodes in terms of behavioral principles and procedures; and design, implement, and evaluate behavioral programs.* To accomplish these goals, we provide (a) Guidelines for Effective Applications, (b) Application Exercises Involving Others and teach the reader how to analyze, interpret, and develop programs for others' behavior, (c) Self-Modification Exercises, which encourage the reader to analyze, interpret, and develop programs for his or her own behavior, and (d) many examples of applications.

5. *To present the material in such a way that it will serve as an easy-to-use handbook for practitioners concerned with overcoming behavioral deficits and excesses in a wide variety of populations and settings.*

6. *To provide advanced discussion and references to acquaint readers with the empirical and theoretical underpinnings of the field.* This occurs throughout the book, especially in Chapters 1–27. Advanced discussion is also presented in the Notes for Further Learning at the end of each chapter. These sections can be omitted without disrupting the continuity of the text. Questions for Further Learning are provided as aids for students who wish to broaden their understanding of behavior modification or for instructors who wish to use them for examinations. Instructors can also use information given in the Notes for Further Learning as springboards for lecture material.

7. *To provide information and references regarding behavior therapy* (*BT*)*, including cognitive behavior therapy* (*CBT*)*, acceptance and commitment therapy* (*ACT*)*, and dialectical behavior therapy* (*DBT*)*.* In this book, students will not be taught how to do these therapies, as they require advanced training and qualifications.

8. *To describe briefly the most effective behavioral treatments for 10 representative psychological disorders, including specific phobias, posttraumatic stress disorder* (*PTSD*)*, obsessive-compulsive disorder* (*OCD*)*, and depression (Chapters 26 and 27).*

9. *To describe historical highlights of behavior modification (Chapter 28).*

10. *To describe ethical guidelines for the design, implementation, and evaluation of behavioral treatment programs (Chapter 29).* Although we placed the chapter on ethical issues at the end of the book, we believe that this topic is as important as any other topic we cover. In fact, we stress ethical issues throughout the book. Thus, the last chapter provides a reiteration and elaboration of this vital subject. We hope that after reading the concluding chapter, the reader will fully understand that the only justification for behavior modification is its usefulness in serving humanity in general and its recipients in particular.

Changes in the 11th Edition

We made many changes in this edition in accordance with recommendations from reviewers, students, and colleagues.

First, we moved our description of procedures for defining, assessing, and recording behaviors and evaluating the effects of treatments to Chapters 3 and 4, thus emphasizing the foundational nature of these topics. Many instructors prefer to present the above procedures early before students study the basic principles and procedures of behavior modification. Moreover, now that the research and analytical methods of the behavioral approach have become widely accepted, we also believe that these methods should be presented early in this text.

Second, we added more examples to better illustrate the application of behavior principles in (a) specialized centers, (b) various educational institutions, and (c) a wide variety of everyday situations.

Third, we shortened and simplified the three chapters in Part III (*Capitalizing on Operant Antecedent Control Procedures*) to make these chapters concise and easy to follow.

Fourth, we added lead cases to Chapters 22–25, so now Chapters 3–25 all start with lead cases. These lead cases highlight the book's logical and systematic consistency, a widely respected hallmark of the book throughout all its editions.

Fifth, we added an overview to each part of the book and a summary at the end of every chapter to help readers see the forest as well as the trees in the broad field of behavior modification.

Sixth, we have extensively revised all chapters to cover recent developments in the expanding field of behavior modification and to enhance the readability of the text. Some of the specific chapter revisions we made were as follows: In Chapter 1 we provided an overview of the entire book, defined basic behavior modification terms, and updated the connections of this introductory chapter to the other chapters. In Chapter 2 we added many new references to highlight the various areas in which behavior is currently being applied. In Chapter 3 we combined Chapters 20 and 21 from the 10th edition, added a lead case, provided a more extensive discussion of the minimal phases of a behavior modification program, added a section on procedural reliability, and discussed the current and potential use of mobile technology in recording behavior. In Chapter 4 (originally Chapter 22 in the 10th edition) we added a lead case and moved part of the section on social validity to the Notes for Further Learning section. In Chapter 5 we added a new lead case, simplified some material, and clarified the distinction between respondent and operant conditioning. In Chapter 6 we added a new lead case, a discussion of the similarities and differences between the Premack principle and the response deprivation model, and a discussion on the relationship between emotion and motivating operations. In Chapter 7 we clarified one of the learning objectives and the unaware-misapplication pitfall. In Chapter 8 we added a new lead case and a detailed discussion of resurgence. In Chapter 9 we clarified the learning objectives and discussed babbling and linguistic development. In Chapter 10 we moved material on progressive ratios to a new Note for Further Learning and added material on the matching law. In Chapter 11 we added a new lead case, clarified that the chapter focused on operant discrimination and generalization, revised the learning objectives, clarified a common pitfall, and added new material and references on concept learning. In Chapters 12 to 16 we extensively edited and updated all material, especially in regards to the Premack principle and the response deprivation model. In Chapter 17 we expanded our treatment of thinking, emotion, and motivating operations. In Chapter 18 we expanded on the learning objectives, clarified the differences between programming the generality of

operant behavior versus respondent behavior, elaborated on the use of high-probability instructions to increase compliance with low-probability instructions, and removed references to behavioral momentum because this theory has not been supported by the evidence (see Odum, A. L. [2018]. Editorial: Nevin's momentum. *Journal of the Experimental Analysis of Behavior*, *109*(1), 1–3). In Chapters 19 to 21 we expanded the learning objectives, shortened and simplified some parts, and added new material on rule-governed vs. contingency-shaped behavior, motivating operations, and modeling. In Chapter 22 we expanded the learning objectives, shortened and simplified some parts, and discussed the hypothesis-testing approach to functional analysis. In Chapter 23 we added a new lead case, revised the learning objectives, and divided the section (from the 10th edition) on "Program Design and Implementation" into three sections. In Chapters 24 we added a new lead case and a systematic discussion on doing research on token economies. In Chapter 25 we added a new lead case and literature on behavior modification and dieting. We also discussed the problem of short-circuiting contingences. In Chapter 26 we provided a discussion and table on the generic cognitive model. However, in discussing this model, we retained our position that cognitive techniques can be fruitfully interpreted in strictly behavioral terms—such as by appropriate reference to rule-governed behavior, self-instructions, and covert or private behavior. In Chapter 27 we intensified our discussion of empirically established effective psychological treatments, still referencing the Clinical Psychology Division of the American Psychological Association (Division 12) website on research-supported psychological treatments. We also continued to stress that these treatments are best viewed behaviorally—i.e., reducible to the basic behavioral principles discussed in the earlier chapters. We also made changes to ensure that our classification of technical terms, while remaining consistent with behavioral terminology, are in accord with the classification scheme in the *DSM-5*. In Chapter 28 we added developments since the previous edition that we believe will be shown to be of historical importance, such the growing emphasis on cognitive therapy and current interpretations of it in strictly behavioral terms. In Chapter 29 we expanded on our discussion of credentialing by organizations such as the Behavior Analyst Certification Board®(BACB®) and the increasing emphasis on ethical codes by various professional organizations concerned with behavioral interventions. We also added material on supervision to ensure high ethical practices.

Finally, we added over 140 new references across all chapters to accurately reflect recent developments in the field and to ensure that the book is completely up-to-date in all areas of behavior modification. This has also allowed us to cover state-of-the-art topics that are seldom or never touched upon in other introductory or even advanced behavior modification textbooks.

Instructor's Resource Manual With Tests and Practica

One of our goals is to help students learn to think about behavior modification critically and creatively. Thus, in the Instructor's Resource Manual accompanying this text, we have included operational definitions of higher-order thinking based on Bloom's Taxonomy.[1] We have applied these definitions to the study questions in the text, which we refer to as Questions for Learning to more clearly indicate their purpose. Taking these thinking levels into account, we have provided an answer key to all Questions for Learning, including those in the Notes for Further Learning. The thinking levels indicate how students are expected to answer these questions on tests and exams in order to achieve the highest levels of critical thinking about the material. A pool of multiple-choice and/or true/false questions has also been provided on a chapter-by-chapter basis. Finally, 15 in-class practica or minilab exercises that have been developed and field-tested are also included in the Instructor's Resource Manual. Each exercise is to be completed by a group of two or three students during a regularly scheduled class. After students have been tested on relevant chapters, completion of a practicum helps them to apply behavior modification principles. Student feedback indicates that the exercises constitute an excellent teaching tool.

Acknowledgments

Writing the 11 editions of this book was made possible through the help of many individuals. We gratefully acknowledge the cooperation and support of Dr. Glen Lowther (former Superintendent) and the staff at the Manitoba Developmental Centre and Dr. Carl Stephens (former CEO) and the staff at the St. Amant Centre. Much of the material in this book was initially generated while the authors were involved with these institutions.[2] Without the support of the staff members of the above institutions, this book would likely not have been written. Grateful acknowledgment is also due to our many

◼ To the Student

This book is designed to help you learn to talk about and apply behavior modification effectively. You need no prior knowledge about behavior modification to read and understand this text from beginning to end. From experience using previous editions of this book in our teaching, we are confident that students at all levels—from beginners to advanced—will find the text informative and useful. Another important use of this book is as study material for those taking the Board Certified Behavior Analyst® (BCBA®) or the Board Certified Assistant Behavior Analyst® (BCaBA®) exams. The chapters relevant to these exams are outlined in the table following this Preface.

Behavior modification is a broad and complex field with many ramifications. Realizing that some students require a deeper knowledge of behavior modification than others, we have separated foundational content from advanced material that demands more thought and study. The foundational content is presented in the main body of the text. The advanced content is presented at the end of each chapter in sections called Notes for Further Learning (*NFL*). Because the main text does not depend on the material in the *NFL* sections, you can still obtain a good working knowledge of the principles and procedures of behavior modification without referring to them. We believe, however, that many students will find the *NFL* sections very informative and that many instructors will find the material useful in stimulating class discussion and imparting additional background information.

Another major way we attempt to help you learn the material is by providing Guidelines for Effective Applications of all the behavior modification methods discussed in the text. These guidelines provide useful summaries of the material as well as assisting you in the application of the methods described in the text.

Most chapters also present numerous Questions for Learning and Application Exercises, including Self-Modification Exercises and Excercise Involving Others. The Questions for Learning are intended to help you check your knowledge of the material when preparing for tests and exams. The Application Exercises are intended to help you develop the practical skills you will need to complete behavior modification projects effectively.

To help make your study productive and enjoyable, the book progresses from simpler to more complex material. But a word of caution: *Do not be misled by the seeming simplicity of the earlier chapters*. Students who conclude that they are skilled behavior modifiers after they have learned a few simple behavior modification principles unfortunately end up proving the old maxim that "a little knowledge is a dangerous thing." If we personally had to pick the most important chapter in this book in terms of a review of the knowledge and skills that define a competent behavior modifier, it would be Chapter 23—*Planning, Applying, and Evaluating a Behavioral Program*. We therefore strongly suggest that you reserve judgment about your abilities as a behavior modifier until you have mastered Chapter 23 and all the preliminary material on which it is based.

We also point out that—as emphasized in Chapter 29 (*Ethical Issues*)—organizations regulating behavior modification are highly influential. If you are considering applying behavior modification on any level beyond personal, we strongly recommend that you check with the Behavior Analyst Certification Board (www.bacb.com), the Analysis of Behavior International Accreditation Board (www.accreditation.abainternational.org), or other certification bodies such as state or provincial psychological associations to determine how you may obtain the necessary qualifications.

With those words of caution, we wish you much success and enjoyment as you pursue your studies in this exciting and rapidly expanding field.

Garry Martin and Joseph Pear

▉ Using This Book to Study for the Behavior Analysis Certification Board® Examinations

For individuals using this book to study for the Board Certified Behavior Analyst® (BCBA®) or the Board Certified Assistant Behavior Analyst® (BCaBA®) exam, the following are the chapters in this book where the content for the current task list may be found:

Topics from the Fifth Edition Task List*	Relevant Chapters
Section 1: Foundations	
A. Philosophical Underpinnings	1, 17, 26, 27, 28
B. Concepts and Principles	5–18
C. Measurement, Data Display, and Interpretation	3, 23
D. Experimental Design	4
Section II: Applications	
E. Ethics (behave in accordance with the Professional and Ethical Compliance Code for Behavior Analysts)	29
F. Behavioral Assessment	22
G. Behavior-Change Procedures	2, 19, 20, 21, 25
H. Selecting and Implementing Interventions	23, 24
I. Personal Supervision and Management	22

*Adapted from the Fifth Edition of the Behavior Analysis Certification Board® Task List.

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Notes

1. Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of Educational Objectives*. New York: Longmans, Green & Company; Pear, J.J., Crone-Todd, D.E., Wirth, K., & Simister, H. (2001). Assessment of thinking levels in students' answers. *Academic Exchange Quarterly*, *5*(4), 94–98.
2. See Walters, K., & Thomson, K. (2013). The history of behavior analysis in Manitoba: A sparsely populated Canadian province with an international influence on behavior analysis. *The Behavior Analyst*, *36*(1), 57–72.

PART I

The Behavior Modification Approach

Behavior modification focuses on both the public or overt and private or covert behavior of individuals. Since its inception as a field of scientific study, behavior modification—which includes the subfields known as applied behavior analysis and behavior therapy—has proven to be an effective means of modifying behavior in a wide variety of applied settings. This has been accomplished by the development of powerful scientific methods for studying behavior. Behavior modification stresses an individual case design that does not rely on formal statistical methodology that focuses on group averages.

1 Introduction

MANY OF SOCIETY'S best achievements—from democratic government to helping the less fortunate, and from great works of art to important scientific discoveries—as well as some of its most pressing health and social challenges—from unhealthy lifestyles to environmental pollution and from racism to terrorism—are firmly rooted in behavior. But what is behavior? Before attempting an answer, consider the following scenarios:

1. *Withdrawn behavior*. A class of nursery school youngsters is in the playground. While most of the children are playing, one little boy sits quietly by himself, making no effort to join in the fun.

2. *Ineffective studying*. With two term papers due next week and a midterm exam at the same time, Sam is wondering how he is ever going to make it through his first year at university. Yet he continues to spend several hours each day on social media.

3. *Performance nervousness*. Karen, a 14-year-old gymnast, is waiting for her turn to perform on the balance beam at a championship. Showing signs of extreme nervousness, she says to herself, "What if I don't perform well? What if I fall on my backflip? I can't believe how my heart is pounding."

4. *Campground littering*. Tom and Sally have just arrived at the place where they intend to set up camp and are looking in disgust and amazement at the litter left by previous campers. "Don't they care about the environment?" asks Sally. "If people keep this up," Tom says, "there won't be any nature left for anyone to enjoy."

5. *Migraine headaches*. While preparing dinner for her family, Betty was vaguely aware of a familiar feeling creeping up on her. Then, all at once, she felt nauseous. She looked around fearfully, knowing from past experience what to expect. "Tom, Joe," she called to her sons watching TV in the living room, "you'll have to finish fixing dinner yourselves—I'm having another migraine."

6. *Staff management*. Jack and Brenda were having coffee one morning at the restaurant they owned. "We're going to have to do something about the evening staff," said Brenda. "When I came in this morning, the ice cream machine wasn't properly cleaned and the cups and lids weren't restocked." "That's only the tip of the iceberg," said Jack. "You should see the grill!"

7. *Irrational thinking*. Mary, after getting a poor mark on her first exam in her first year at college, thinks, "I'll *never* be a good student. I *must* do well in *all* of my courses. My professor must think I'm an idiot."

Close inspection shows that each of the above vignettes involves some sort of human behavior. They illustrate a few of the many problems with which specialists in behavior modification are trained to deal. Each of these types of behavior problems and many others are discussed in the following pages. Behavior modification, as you will see, is applicable to the entire range of human behavior.

■ What Is Behavior?

(In this book, key terms are found in bold, followed by their definitions. We encourage you to master them as you encounter them.)

Essentially, **behavior** is anything that a person says or does. Some commonly used synonyms include "activity," "action," "performance," "responding," "response," and "reaction." Technically, behavior is any muscular, glandular, or electrical activity of an organism. Is the color of someone's eyes behavior? Is blinking behavior? Are the clothes someone is wearing behavior? Is dressing behavior? If you said no to the first and third questions and yes to the second and fourth, we are in agreement. One of the goals of this book is to encourage you to begin thinking and talking very specifically about behavior.

How about getting an "A" in a behavior modification course, or losing 10 pounds; are those behaviors? No. Those are *products of behavior*. The behavior that produces an "A" is studying effectively. The behaviors that lead to weight loss are resisting overeating and exercising more.

Walking, talking out loud, throwing a baseball, yelling at someone—are all **overt behaviors** that could be observed and recorded by an individual other than the one performing the behavior. As will be discussed in later chapters, the term *behavior* can also refer to *covert* activities that cannot be observed by others. However, in the field of behavior modification, covert behaviors do *not* typically refer to behaviors done in private, such as undressing in one's bedroom with the door locked and the blinds closed. Nor do they usually refer to secretive actions, such as cheating on an exam. Rather, in behavior modification they more commonly refer to activities that occur "within one's skin" and that therefore require special instruments or procedures for others to observe. For example, just before stepping onto the ice at an important competition, a figure skater might think, "I hope I don't fall," and he or she is likely to feel nervous. Covert as well as overt behaviors can be influenced by behavior modification techniques.

The opposite of private or covert behavior is public or overt behavior. Although, as stated above, behavior modifiers sometimes deal with covert behavior, they tend to focus on overt behavior, because the latter is generally more important to the individual and to society as a whole. Also, it is easier to measure overt behavior more accurately than covert behavior.

Sometimes we think in words. This is called *private self-talk* and is illustrated by the figure skater mentioned previously. And sometimes we think by imagining. If you were asked to close your eyes and imagine a clear, blue sky with a few white fluffy clouds, you would likely be able to do so although there are large differences between individuals in the vividness of their imagery (Cui, Jeter, Yang, Montague, & Eagleman, 2007). Imagining is usually thought of as being visual, but it can also involve other senses. For example, we can imagine a scent, a taste, and a feeling of rubbing one's hand across a rough surface. Imagining and private self-talk, in addition to being called **covert behaviors**, are sometimes referred to as *cognitive behaviors*.

Characteristics of behavior that can be measured are called *dimensions of behavior*. Three dimensions of behavior are duration, rate, and intensity. The *duration* of a behavior is the length of time that it lasts (e.g., Mary studied for one hour). The *rate* of a behavior is the number of instances that occur in a given period of time (e.g., Frank planted five tomato plants in his garden in 30 minutes). The *intensity* or *force* of a behavior refers to the physical effort or energy involved in emitting the behavior (e.g., Mary has a strong grip when shaking hands).

Questions for Learning

Note to reader: You will encounter sets of questions in each chapter. Because the questions are designed to enhance your learning, we encourage you to (a) pause in your reading of the chapter; (b) prepare answers to those questions; and (c) learn those answers. Doing so will help you to master the content of this book.

1. What is behavior, generally and technically? Give three synonyms for behavior.
2. Distinguish between behavior and products of behavior. Give an example of a behavior and a product of that behavior that are not in this chapter.
3. Distinguish between overt and covert behaviors. Give two examples of each that are not in this chapter.
4. What are cognitive behaviors? Give two examples.
5. Describe two dimensions of behavior. Give an example of each.

Summary Labels for Behavior

While we have all learned to talk about behavior in various ways, we often do so in general terms. Terms such as "honest," "carefree," "hardworking," "unreliable," "independent," "selfish," "incompetent," "kind," "graceful," "unsociable," and

"nervous" are summary labels for human actions, but they do not refer to specific behaviors. If, for example, you were to describe a man as nervous, others might know generally what you mean. But they would not know if you were referring to that person's tendency to chew his fingernails, his constant fidgeting, the tendency for his left eye to twitch when talking to someone, his tendency to jump when startled, or some other behavior.

For behavior modification specialists, many terms that are commonly used by psychologists, such as *intelligence*, *attitudes*, and *creativity*, are also summary labels for behavior. Behavior modifiers find it advantageous to talk about these concepts *behaviorally*; or, in other words, in what is called a **behavioral language**. What do we mean when we say that a person is *intelligent*? To many people, intelligence is something that you are born with, a sort of "inherited brain power" or innate capacity for learning. But we never observe or directly measure any such thing. On an intelligence test, for example, we simply measure people's behavior—their answers to questions—as they take the test. The word *intelligent* is best used in its adjective form (e.g., "he is an *intelligent* speaker," "his speech is *intelligent*") or its adverb form (e.g., "she writes *intelligently*") to describe how people behave under certain conditions, such as taking a test, but not as a noun for some "thing." Perhaps a person described as intelligent readily solves problems that others find difficult, performs well on most course examinations, reads many books, talks knowledgeably about many topics, or gets a high score on an intelligence test. Depending on who uses the word, *intelligence* can mean any or all of these—but whatever it means, it refers to ways of behaving. Therefore, in this book we avoid using the word *intelligence* as a noun. (For an excellent discussion of a behavioral approach to intelligence, see Williams, Myerson, & Hale, 2008.)

What about an *attitude*? Suppose that Johnny's teacher, Ms. Smith, reports that he has a bad attitude toward school. What does Ms. Smith mean by this? Perhaps she means that Johnny frequently skips school, refuses to do his classwork when he does attend, or swears at the teacher. Whatever she means when she talks about Johnny's "bad attitude," it is clearly his behavior with which she is really concerned.

Creativity also refers to the kinds of behavior that a person is likely to engage under certain circumstances. The creative individual frequently emits behaviors that are novel or unusual and that, at the same time, have desirable effects. (For an excellent discussion of a behavioral approach to creativity, see Marr, 2003.)

Summary labels commonly used to refer to psychological problems include *autism spectrum disorder*, *attention-deficit/hyperactive disorder*, *anxiety*, *depression*, *low self-esteem*, *road rage*, *interpersonal difficulties*, and *sexual dysfunction*. There are positive reasons that summary terms or labels for behavior patterns are so frequently used in psychology and in everyday life—not in a special institutional or therapeutic situation. First, they may be useful for quickly providing general information about how an individual might perform. We would expect that a 10-year-old child who has been labeled as having a severe developmental disability, for example, would not be able to read even at the first-grade level. Second, the labels may imply that a particular treatment program will be helpful. Someone with road rage might be encouraged to take an anger-management course. Someone who is unassertive might benefit from an assertiveness training course. However, the use of summary labels also has disadvantages. One is that they may lead to *pseudo-explanations* of behavior (*pseudo* meaning false). For example, a child who inverts words while reading, such as "saw" for "was," might be labeled as having *dyslexia*. If we ask why the child inverts words, and we are given the answer "Because he has dyslexia," then the summary label for the behavior has been used as a pseudo-explanation for the behavior. Another name for pseudo-explanation is *circular reasoning*.

A second disadvantage of labeling is that labels can negatively affect the way an individual might be treated, such as by focusing on an individual's problem behaviors rather than strengths. Suppose, for example, that a teenager consistently fails to make his bed but reliably mows the lawn and places the garbage cans on the street on pickup days. If the parents describe their son as "lazy," that label may cause them to focus more on the problem behavior than to praise the positive behaviors. In some societies, racial minorities have been given the negative label "lazy" even though they were the ones doing most of the hard, physical work.

In this book, we strongly stress the importance of defining all types of problems in terms of **behavioral deficits** (too little behavior of a particular type) or **behavioral excesses** (too much behavior of a particular type). We do so for several reasons. First, we want to avoid the problems of using general summary labels discussed earlier. Second, regardless of the labels attached to an individual, it is *behavior* that causes concern—and behavior that must be treated to alleviate the problem. Certain behaviors that parents see and hear, or fail to see and hear, cause them to seek professional help for their children. Certain behaviors teachers see and hear prompt them to seek professional help for their students. Certain behaviors that can be seen or heard cause governments to set up institutions, clinics, community treatment centers, and special programs. And certain behaviors that you emit might cause you to embark on a self-improvement program. Third, specific procedures are now available that can be used to improve behavior in schools, in workplaces, in home settings—in fact, just about anywhere that there is a need to establish more desirable behaviors. These techniques are referred to collectively as *behavior modification*.

Questions for Learning

6. From a behavioral point of view, what do terms like *intelligence* or *creativity* refer to? Give an example of each.
7. What are two positive reasons that summary terms for behavior patterns are used frequently in psychology and in everyday life?
8. What are two disadvantages of using summary labels to refer to individuals or their actions? Give an example of each.
9. What is a behavioral deficit? Give two examples that are not in this chapter.
10. What is a behavioral excess? Give two examples that are not in this chapter.
11. What are the three reasons why the authors describe behavior problems in terms of specific behavioral deficits or excesses?

◼ What Is Behavior Modification?

Behavior modification involves the systematic application of learning principles and techniques to assess and improve the overt and covert behaviors of individuals in order to enhance their daily functioning. Behavior modification has seven main characteristics. First, the most important characteristic is *its strong emphasis on defining problems in terms of behavior that can be measured in some way and using changes in the behavioral measure of the problem as the best indicator of the extent to which the problem is being helped*.

Second, *its treatment procedures and techniques are ways of altering an individual's current environment*—i.e., the individual's immediate physical surroundings—to help that individual function more fully. The physical variables that make up a person's environment are called *stimuli* (plural of *stimulus*). More specifically, **stimuli** are the people, objects, and events currently present in one's immediate surroundings that impinge on one's sense receptors and that can affect behavior. For example, the teacher, other students, and the furniture in a classroom are all potential stimuli in a student's environment in a classroom setting. An individual's own behavior can also be a part of the environment influencing that individual's subsequent behavior. When hitting a forehand shot in tennis, for example, both the sight of the ball coming near and the behavior of completing your backswing provide stimuli for you to complete the forehand shot and hit the ball over the net. Things that a therapist might say to a client are also a part of that client's environment. But behavior modification is much more than *talk therapy* or *verbal psychotherapy*. Although both behavior modifiers and "talk" therapists talk to their clients, their approaches to therapy differ in several important ways. One difference is that a behavior modifier is frequently actively involved in restructuring a client's daily environment to strengthen appropriate behavior, rather than spending a great deal of time discussing the client's past experiences. While knowledge of a client's past experiences might provide useful information for designing a treatment program, knowledge of the current environmental variables that control or, loosely speaking, "cause" a client's behavior is necessary for designing an effective behavioral treatment. Another difference between behavior modifiers and "talk" therapists is that a behavior modifier frequently gives homework assignments to clients, in which the clients change their own everyday environments for therapeutic purposes. Such homework assignments are discussed in Part V (Chapters 26 and 27).

A third characteristic of behavior modification is that *its methods and rationales can be described precisely*. This makes it possible for behavior modifiers to read descriptions of procedures used by their colleagues, replicate them, and get essentially the same results. It also makes it easier to teach behavior modification procedures than is the case with many other forms of psychological treatment.

As a consequence of the third characteristic, a fourth characteristic of behavior modification is that *the techniques of behavior modification are often applied by individuals in everyday life*. Although, as you will read in this book, appropriately trained professionals and paraprofessionals use behavior modification in helping others, the precise description of behavior modification techniques makes it possible for individuals such as parents, teachers, coaches, and others to apply behavior modification to help individuals in everyday situations.

A fifth characteristic of behavior modification is that, to a large extent, *the techniques stem from basic and applied research in the science of learning* (e.g., see Pear, 2016a, 2016b). Therefore, in Part II we cover the principles of learning in considerable detail and show how they are applicable to various types of behavior problems.

Two final characteristics are that *behavior modification emphasizes scientific demonstration that a particular intervention or treatment was responsible for a particular behavior change*, and *it places high value on accountability for everyone involved in behavior modification programs*: client, staff, administrators, consultants, and so on.[1]

Thus far, we have talked about the general approach that behavior modifiers take toward behavior. But how do behavior modifiers determine which behaviors to modify? The answer to this question is that behavior modifiers make use of procedures collectively called "behavioral assessment."

◼ What Is Behavioral Assessment?

The most important characteristic of behavior modification, as mentioned earlier, is its use of measures of behavior to judge whether an individual's behavior had been improved by a behavior modification program. Behaviors to be improved in a behavior modification program are called **target behaviors**. For example, if a university student sets a goal of studying 2 hours out of class for each hour spent in class, studying is the target behavior.

Behavioral assessment involves the collection and analysis of information and data in order to (a) identify and describe target behaviors; (b) identify possible causes of the behavior; (c) guide the selection of an appropriate behavioral treatment; and (d) evaluate treatment outcome. One type of behavioral assessment involves isolating through experimentation the causes of problem behavior and removing or reversing them. As interest in behavior modification has expanded over the past five decades; the demand for clear guidelines for conducting behavioral assessments has also increased. For more information on behavioral assessment, refer to Chapters 3*** and 22, which cover the topic in detail, or the books by Cipani (2017), Fisher, Piazza, and Roane (2011), and Ramsay, Reynolds, and Kamphaus (2002).

Questions for Learning

12. Define *behavior modification*.
13. What are stimuli? Describe two examples that are not in this chapter.
14. List seven defining characteristics of behavior modification.
15. What is meant by the term *target behavior*? Give an example of a target behavior of yours that you would like to improve. Is your target behavior one that you want to increase (i.e., a behavioral deficit) or one that you want to decrease (i.e., a behavioral excess)?
16. Define *behavioral assessment*.

◼ Some Historical Highlights of Behavior Modification

In addition to the term behavior modification, other terms that have been used to describe the application of learning principles to help individuals improve their behavior include *behavior therapy*, *applied behavior analysis*, and *cognitive behavior therapy*. Although these terms overlap in many ways, there are also some rather subtle distinctions between them. In this section, we will briefly describe some of the early history of these terms and the distinctions that have come to characterize them. (A more detailed history is presented in Chapter 28.)

Pavlovian Conditioning and Early "Behavior Therapy"

If you have taken an introductory psychology course, you may recall that in the early 1900s a Russian physiologist, **Ivan P. Pavlov**, demonstrated with a dog that pairing a stimulus such as a bell with food (which caused salivation) taught the dog to salivate to the bell alone. Pavlov's research initiated the study of a type of learning now known as classical, Pavlovian, or respondent conditioning (which is described in Chapter 5). In a landmark experiment in 1920, John B. Watson and Rosalie Rayner demonstrated Pavlovian conditioning of a fear response in an 11-month-old infant. Although attempts to replicate the Watson and Rayner experiment were unsuccessful, a subsequent landmark experiment by Mary Cover Jones (1924) clearly demonstrated the "de-conditioning" of a fear in an infant. Over the next 30 years, a number of experiments demonstrated that our fears and other emotions could be influenced by Pavlovian conditioning. Then, in the 1950s in South Africa, a psychiatrist named **Joseph Wolpe**, drawing heavily on Pavlovian conditioning and the work of Mary Cover Jones, developed a behavioral treatment for specific phobias, which are intense irrational fears, such as a fear of heights or closed spaces. In 1960, British psychologist Hans Eysenck was the first to refer to Wolpe's approach as *behavior therapy*. In the early 1960s, Wolpe moved to the United States and his behavior therapy approach for treating anxiety disorders gained in popularity. Applications of behavior therapy to treat a variety of psychological disorders are described in Chapter 27.

Operant Conditioning and Early "Behavior Modification"

Pavlovian conditioning involves reflexes—automatic responses to prior stimuli. In 1938, **B. F. Skinner** distinguished between Pavlovian conditioning and operant conditioning—a type of learning in which behavior is modified by its

consequences ("rewards" and "punishers"). In 1953, in his book *Science and Human Behavior*, Skinner offered his interpretation of how basic learning principles could influence the behavior of people in all kinds of situations. In the 1950s and 1960s, behavioral practitioners, influenced by Skinner, published a number of papers that demonstrated applications of operant conditioning principles to help people in a variety of ways. These applications were given the name *behavior modification*. Examples of these applications include helping an individual to overcome stuttering, eliminating excessive regurgitation by a child with intellectual disabilities, and teaching a child with autism spectrum disorder to wear his prescription glasses. In 1965, Ullmann and Krasner published an influential collection of such readings in a book titled *Case Studies in Behavior Modification*, the first book with "behavior modification" in its title.

Applied Behavior Analysis

The year 1968 saw the publication of the first issue of the *Journal of Applied Behavior Analysis* (JABA), a sister publication of the *Journal of the Experimental Analysis of Behavior* (JEAB), which deals with basic behavior analysis. In an important editorial article in the first issue of JABA, Donald Baer, Montrose Wolf, and Todd Risley identified the *dimensions of applied behavior analysis* as including (a) a focus on measurable behavior that is socially significant (e.g., littering, parenting skills); (b) a strong emphasis on operant conditioning to develop treatment strategies; (c) an attempt to clearly demonstrate that the applied treatment was responsible for the improvement in the behavior that was measured; and (d) a demonstration of generalizable and long-lasting improvements in behavior. Over the years, the term *applied behavior analysis* has become increasingly popular (Bailey & Burch, 2006). In fact, some authors maintain that *behavior modification* and *applied behavior analysis* are now "two terms used to identify virtually identical fields" (e.g., Miltenberger, 2016). We, however, present a different point of view in this book.

Cognitive Behavior Therapy

Do you ever find yourself thinking, "Why do I always screw things up?" or "Why does the worst always happen to me?" The well-known cognitive therapist **Albert Ellis** considered such statements to be irrational—after all, you don't always screw things up and you do some things well. Ellis believed that such irrational thoughts could cause a variety of troublesome emotions. His approach to therapy was to help people identify their irrational beliefs and to replace them with more rational self-statements (Ellis, 1962). Independently of Ellis, **Aaron Beck** assumed that dysfunctional thinking could cause depression and other problems, and he developed a therapeutic procedure that was similar to that of Ellis. Beck (1970) referred to strategies for recognizing maladaptive thinking and replacing it with adaptive thinking as *cognitive therapy*, and he contrasted cognitive therapy with behavior therapy (Beck, 1970). In the 1970s and 1980s, the term *cognitive behavior modification* was commonly used to refer to this approach (e.g., Meichenbaum, 1977, 1986). However, during the last three decades, the term *cognitive behavior therapy* has become the more common term. Cognitive behavior therapy is discussed in more detail in Chapters 26 and 27.

■ Current Use of "Behavior Modification," "Behavior Modifier," and Related Terms

Behavior analysis is the science on which behavior modification is based. The term **behavior analysis** refers to the study of the scientific laws that govern the behavior of human beings and other animals. As mentioned above, the terms **applied behavior analysis** and *behavior modification* are often used interchangeably. Many individuals who specialize in these areas call themselves *applied behavior analysts*. The terms *behavior therapy* and *cognitive behavior therapy* are often also used interchangeably. However, many individuals who practice behavior therapy or cognitive behavior therapy would not consider themselves to be applied behavior analysts, nor would they likely be considered as such by the majority of certified behavior analysts. An additional consideration is that the terms *behavior modifier*, *behavior manager*, and *performance manager* are often used to refer to an individual who, without formal training in behavior modification, deliberately tries to improve someone's behavior. The "behavior modifier" in such instances might be a teacher, parent, spouse, peer, roommate, supervisor, colleague, or even a person modifying his/her own behavior.

With this brief review of terms in mind, there are three types of individuals that the term *behavior modifier* refers to: *applied behavior analysts*, *cognitive behavior therapists* (sometimes just called *behavior therapists*), and

everyone else. The first two groups are professional behavior modifiers. They have had extensive training in their fields, have passed rigorous examinations on both the content and ethics of their fields, have earned a post-graduate degree (typically a master's degree or doctorate) from reputable institutions, and belong to professional organizations that certify or license them and require them to remain current with the advances in their respective fields. Although frequently used as a beginning text for individuals training to be a member of the first two groups, reading this book does not by itself qualify you to be a member of the first two groups. The professional activities of these two groups constitute the "what-it-is" rather than the "how-to-do-it" aspect of this book. The "how-to-do-it" aspect of this book is directed toward the third group—i.e., everyone else. It teaches you how to use principles of behavior in your day-to-day life but does not by itself teach you how to be a professional behavior modifier. When we use the term *behavior modifier* in this book, we will generally be referring to an applied behavior analyst or cognitive behavior therapist unless otherwise indicated. It is also important to note that a person being treated by a behavior modifier is referred to as a **client**.

Behavior modification is the systematic application of learning principles and techniques to assess and improve individuals' covert and overt behaviors in order to enhance their daily functioning. Thus, in our view, the term *behavior modification* is broader than and encompasses the other terms referred to above (for further discussion along these lines, see Pear & Martin, 2012; Pear & Simister, 2016).

Questions for Learning

17. Briefly describe Joseph Wolpe's contribution to the early history of behavior therapy.
18. Briefly describe B. F. Skinner's early influence on behavior modification.
19. State the four dimensions of applied behavior analysis.
20. In 1970, what was Aaron Beck referring to with respect to the term "cognitive therapy"? In the 1970s and 1980s, what term was commonly used to refer to "cognitive therapy"?
21. List and briefly describe three types of behavior modifiers.

◼ Some Misconceptions About Behavior Modification

You have likely encountered the term *behavior modification* before reading this book. Unfortunately, because there are a number of myths or misconceptions about this area, some of what you have heard is likely false. Consider the following statements.

Myth 1:   Use of rewards by behavior modifiers to change behavior is bribery.
Myth 2:   Behavior modification involves the use of drugs and electroconvulsive therapy.
Myth 3:   Behavior modification treats symptoms; it doesn't get at the underlying problems.
Myth 4:   Behavior modification can deal with simple problems, such as teaching toileting or overcoming fear of heights, but it is not applicable for complex problems such as low self-esteem or depression.
Myth 5:   Behavior modifiers are cold and unfeeling and don't have empathy for their clients.
Myth 6:   Behavior modifiers deal only with observable behavior; they don't deal with thoughts and feelings of clients.
Myth 7:   Behavior modifiers deny the importance of genetics or heredity in determining behavior.
Myth 8:   Behavior modification is outdated.

In various sections throughout this book, you will encounter evidence to dispel these myths or misconceptions.

◼ The Approach of This Book

The main purpose of this book is to describe behavior modification techniques in an enjoyable, readable, and practical manner. Because it has been written for people in helping professions as well as for students, we intend to help readers learn not merely about behavior modification principles but also about how to use the techniques to change behavior. Behavior that someone would like to improve can be classified as either a behavioral deficit or a behavioral excess and can be overt or covert. Below are examples of each type.

Examples of behavioral deficits

1. A child does not pronounce words clearly and does not interact with other children.
2. A teenager does not complete homework assignments, help around the house, work in the yard, or discuss problems and difficulties with her parents.
3. An adult does not pay attention to traffic regulations while driving, does not thank others for courtesies and favors, or does not meet his/her partner at agreed-upon times.
4. A basketball player, encouraged by the coach to visualize the ball going into the net just before a foul shot, is unable to do so.

Examples of behavioral excesses

1. A child frequently gets out of bed and throws tantrums at bedtime, throws food on the floor at mealtime, and hides her mother's tablet.
2. A teenager frequently interrupts conversations between his parents and other adults, uses abusive language, and spends hours on social media or text messaging on his/her cell phone.
3. An adult watches TV continuously, frequently eats junk food between meals, smokes one cigarette after another, and bites his/her fingernails.
4. A golfer often thinks negatively (e.g., "If I miss this one, I'll lose!") and experiences considerable anxiety (e.g., heart pounding, palms sweating) just before important shots.

To identify a behavior as excessive or deficient, we must consider the context in which it occurs. For example, a child drawing on paper is showing appropriate behavior, but most parents would consider the child repeatedly drawing on the living room wall as a behavioral excess. A teenager might interact appropriately with members of the same sex but be extremely embarrassed and have difficulty talking to members of the opposite sex—a behavioral deficit. Some behavioral excesses—for example, self-injurious behavior—are inappropriate no matter what the context. In most cases, however, the point at which a particular behavior is considered deficient or excessive is determined primarily by the practices of one's culture and the ethical views of concerned individuals.

To summarize, the behavior modification approach focuses primarily on behavior and involves current environmental (as opposed to medical, pharmacological, or surgical) manipulations to change behavior. Individuals who are labeled as having a developmental disability, autism spectrum disorder, schizophrenia, depression, or an anxiety disorder, for example, are individuals who show behavioral deficits or excesses. Similarly, individuals who are labeled lazy, unmotivated, selfish, incompetent, or uncoordinated are also individuals who show behavioral deficits or excesses. Behavior modification consists of a set of procedures that can be used to change behavior so that these individuals will be considered less of whatever label has been given them. Traditional psychologists not trained in behavior modification have tended to label and classify individuals. Regardless of the label given, however, the behavior of the individuals is still there and is still influenced by their environments. The mother in Figure 1.1, for example, is still concerned about what to do with her child and how to handle the problem. That is where behavior modification comes in.

Some Ethical Issues

As behavior modification has evolved, a number of ethical or moral concerns have become prominent. These are concerns that one should always bear in mind when applying behavior modification. Various groups and/or organizations, such as the Association for Behavioral and Cognitive Therapies, the American Psychological Association, and the Association for Behavior Analysis International, have addressed the ethical issues involved in the application of behavior modification (also see Bailey & Burch, 2016). In this section, we highlight ethical guidelines that you should keep in mind when reading subsequent chapters. In the final chapter of this book, we present a more detailed discussion of the relationship between cultural practices, ethics, and behavior modification.

Qualifications of the Applied Behavior Analyst or Behavior Therapist

As stated earlier, applied behavior analysts and behavior therapists should receive appropriate academic training, including supervised practical training, to ensure competence in assessing behaviors, designing and implementing treatment programs, and evaluating their results.