CASEBOOK IN ABNORMAL PSYCHOLOGY

Timothy A. Brown

David H. Barlow

Casebook in Abnormal Psychology

List of Related Titles

Abnormal Psychology

Abnormal Psychology, Seventh Edition by Barlow/Durand
Essentials of Abnormal Psychology, Seventh Edition by Durand/Barlow

Clinical Behavior Disorders/Child Psychopathology

Abnormal Child Psychology, Sixth Edition by Mash/Wolfe
Casebook in Child Behavior Disorders, Fifth Edition by Kearney
Disorders of Childhood, Second Edition by Parritz/Troy

Clinical Psychology

Clinical Psychology, Eighth Edition by Trull

Personality

Personality, Ninth Edition by Burger
Personality Theories, Ninth Edition by Engler
Theories of Personality, Tenth Edition by Ryckman
Theories of Personality, Eleventh Edition by Schultz/Schultz

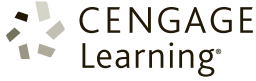
This text may be ordered with our titles in Abnormal Psychology at a special discount. Please consult our website for the name of your local learning consultant: www.cengage.com.

Casebook in Abnormal Psychology

FIFTH EDITION

Timothy A. Brown
Boston University

David H. Barlow
Boston University



Australia • Brazil • Mexico • Singapore • United Kingdom • United States

CENGAGE Learning®

***Casebook in Abnormal Psychology*, Fifth Edition**
Timothy A. Brown and David H. Barlow

Product Director:
Marta Lee-Perriard

Product Manager:
Carly McJunkin

Content Developer:
Adrienne McCrory

Product Assistant:
Kimiya Hojjat

Marketing Manager:
James Finlay

Art and Cover Direction, Production Management, and Composition:
Lumina Datamatics, Inc.

Manufacturing Planner:
Karen Hunt

Cover Image: ©hakkiarsian/ Thinkstock

Library of Congress Control Number: 2016938471

Student Edition:
ISBN: 978-1-305-97171-4

Cengage Learning
20 Channel Center Street
Boston, MA 02210
USA

Cengage Learning is a leading provider of customized learning solutions with employees residing in nearly 40 different countries and sales in more than 125 countries around the world. Find your local representative at **www.cengage.com.**

Cengage Learning products are represented in Canada by Nelson Education, Ltd.

To learn more about Cengage Learning Solutions, visit **www.cengage.com.**

Purchase any of our products at your local college store or at our preferred online store **www.cengagebrain.com.**

Printed in the United States of America
Print Number: 01 Print Year: 2016

For Bonnie, Mom, and Grandma F.
(peas in a pod)

T. A. B.

To Olivia Chase Barlow, Harrison William Nash,
Ava Wells Barlow, and Colby
Winslow Nash, the next generation.

D. H. B.

ABOUT THE AUTHORS

Timothy A. Brown is a professor in the Department of Psychology at Boston University, and director of research at Boston University's Center for Anxiety & Related Disorders. He has published extensively in the areas of the classification of anxiety and mood disorders, vulnerability to emotional disorders, psychometrics, and methodological advances in social sciences research. In addition to conducting his own grant-supported research, Dr. Brown serves as a statistical investigator or consultant on numerous federally funded research projects. He has been on the editorial boards of several scientific journals, including a long-standing appointment as associate editor to the *Journal of Abnormal Psychology*.

David H. Barlow is an internationally recognized expert and leader in clinical psychology, having pioneered many treatments and investigations in anxiety and mood disorders. Currently professor emeritus of psychology and psychiatry at Boston University, Dr. Barlow is also founder and director emeritus of the Center for Anxiety & Related Disorders, one of the largest research clinics of its kind in the world. Previously, he was a distinguished professor at State University of New York, Albany. From 1975 to 1979, he was a professor of psychiatry and psychology at Brown University, where he also founded the clinical psychology internship program. From 1969 to 1975, he was a professor of psychiatry at the University of Mississippi Medical Center, where he founded the Medical School psychology residency program. Dr. Barlow received his B.A. from the University of Notre Dame, his M.A. from Boston College, and his Ph.D. from the University of Vermont. He is the recipient of a Lifetime Achievement Award from the American Psychological Association and the James McKeen Cattell Fellow Award from the Association for Psychological Science honoring individuals for their lifetime of significant intellectual achievements in applied psychological research.

BRIEF CONTENTS

CONTENTS

PREFACE

REAL PATIENTS, REAL CASES—IN RICH CLINICAL DETAIL

All of the cases presented in this book are based on actual clinical histories and treatment outcomes, although patient names and identifying characteristics (e.g., demographics such as age, occupation, and marital/family history) have been changed to ensure confidentiality. The wide range of *DSM-5* disorders discussed in the book is presented using an integrative approach that emphasizes how multidimensional influences that are interrelated and interacting (e.g., genetic, biological, social learning) combine into unified models of the causes and maintenance of the disorder and its treatment.

To keep the chapters at a readable length, we exclude the details of life history that do not affect the onset, maintenance, or treatment outcome of the patient's disorder. However, we offer rich detail and explanations on the conceptualization, process, and outcome of treatment—far beyond what is typically seen in casebooks of this type.

A variety of treatments, both pharmacological and psychosocial, exist for most of the disorders discussed in this book. However, in most cases, the treatments presented here represent the most effective interventions developed to date for each particular disorder, as documented by the scientific literature. Nevertheless, in accord with the reality of clinical practice, the reader will note considerable variation in the extent to which patients improve.

APPRECIATING THE COMPLEXITY OF DIAGNOSIS

Because many teachers of abnormal psychology frequently use cases in their quizzes, tests, midterms, and final exams, the final three cases provide only the clinical histories, not the diagnoses and treatment conceptualizations. These cases, Cases 18, 19, and 20, are intended to be used as teaching tools to give students an opportunity to

consider differential diagnosis and treatment planning of the cases described. The purpose of these "unsolved cases" is to stimulate class discussion on the complexities and vagaries in psychological disorders and to give an *appreciation of the complexity of diagnosis*. Case 18 is written as an "easier" case, perhaps similar to case snippets that are used in testing situations, whereas Cases 19 and 20 are more difficult differential diagnoses that may be used for extra credit or for more advanced students (the solutions to these three cases are available to the instructor on our website in the instructor area).

CHANGES IN THE FIFTH EDITION: *DSM-5* AND LITERATURE REVIEWS

This edition has been updated to reflect and convey all the changes to the definitions of mental disorders that were introduced in the new *DSM-5*. The literature review in each chapter has also been updated.

ACKNOWLEDGMENTS

The authors wish to thank the following individuals for providing clinical information that served as a basis for many of the case histories included in this book: Martin Antony, Denise Berotti, Karen Calhoun, Rhea Chase, Bruce Chorpita, Russ Denea, Patty DiBartolo, Maryrose Gerardi, Jennifer Greenberg, Constance Kehrer, Shari Feldbau-Kohn, Lenna Knox, Patricia Miller, Laura Mufson, K. Daniel O'Leary, Tracy O'Leary, Patricia Resick, David Sakheim, Risa Weisberg, and Myrna Weissman. Thanks also to Guilford Press for permission to adapt work appearing in an earlier publication (*Clinical Handbook of Psychological Disorders*, 4th ed., D. H. Barlow, Ed., 2008, Guilford Press) for use in Cases 4 and 15 of this book.

We would also like to thank the reviewers for their constructive comments on earlier versions of these case presentations. They include: Bruce Levine, Nassau Community College; Benjamin Harris, University of Wisconsin–Parkside; Pamela Brouillard, Texas A&M–Corpus Christi; Eric Cooley, Western Oregon State University; and Louis R. Franzini, San Diego State University. Reviewers for the previous edition were: Montie A. Campbell, Oklahoma Baptist University; Ronald G. Evans, Washburn University; William Fremouw, West Virginia State University; Frank Goodkin, Castleton State University; Elizabeth A. Klonoff, California State University–San Bernardino; Carol Thompson, Muskegon Community College; and Raymond M. Zurawski, St. Norbert College.

Timothy A. Brown
David H. Barlow
Center for Anxiety & Related Disorders
Department of Psychology, Boston University

Generalized Anxiety Disorder

Adrian Holdsworth was a 39-year-old Caucasian woman with two children (a son, age 12, and a daughter, age 7). Since obtaining her bachelor's degree in business administration 8 years ago, Adrian has worked as a bank manager. Recently she had become increasingly worried about her ability to concentrate and remember things at work, and she went to her family doctor for an evaluation. Finding no physical basis for her concentration and memory difficulties, Adrian's doctor referred her to a neuropsychologist for a more detailed assessment of her cognitive functioning. The neuropsychologist deemed Adrian's complaints to be anxiety related, and thus he encouraged her to seek out the services of an anxiety disorders clinic.

During her initial visit to the clinic, Adrian again expressed her concerns about her lapses in concentration and memory. She stated that because of these lapses, she had made some "financially disastrous" errors at work. Consequently, she was advised by her supervisor to take some vacation time to relax and "get her head together." Feeling devastated by her supervisor's remark, Adrian became convinced that her concentration and memory problems were serious and perhaps the result of her brief experimentation with marijuana in college. In addition to her problems with concentration and memory and worries that her job was in jeopardy, Adrian claimed that she was unable to relax outside the office. She also reported low self-esteem and difficulties in making decisions. With regard to the decision-making problems, Adrian said that she frequently deliberated so much about a course of action (e.g., "Is this the right decision, or should I do that?") that she often avoided making decisions altogether.

Adrian's concentration and memory problems usually occurred when she was anxious and worried about some life matter, and she said that she was in a state of anxiety and worry about 75% of her waking hours. She worried a great deal about her job performance, her children's well-being, and her relationships with men. In addition, she felt stressed about a variety of minor matters such as getting to appointments on time, keeping her house clean, and maintaining regular

contact with family and friends. For example, with regard to her children, Adrian often became very anxious that her kids might have been hurt or killed if they were out in the neighborhood playing and she had not heard from them in a couple of hours. (The nature and content of Adrian's other worries are discussed later in this case.)

In addition to being *excessive* (e.g., failure to hear from one's children in 2 hours is not sufficient grounds to conclude that they may have been killed), her worries were also *uncontrollable*: When a worry came into her mind, she was unable to dismiss it and get her mind refocused on the task at hand. For instance, Adrian would become more anxious and worried at work when her supervisor was around (because of her concern that he would evaluate her job performance negatively). Her preoccupation with the possibility of being negatively evaluated made her less attentive to her work, and thus she was more apt to make mistakes. During these periods of increased worry, Adrian would be more forgetful because her mind had not been focused on her work (e.g., she would often forget what her supervisor had told her because she was focused more on her worries about job performance than on what he was saying to her). In addition to concentration and memory difficulties, Adrian's anxiety and worry were accompanied by other symptoms: irritability, problems in getting and staying asleep, frequent muscle tension and headaches, and a feeling of being keyed up or on edge.

Adrian was very concerned about her excessive worry and anxiety: "I hate feeling this way all day. I just want to feel normal and in control of what's going on in my life!" In addition to the distress they caused, Adrian's symptoms interfered a great deal with her life. For example, she spent many extra hours at the office, arriving 30 minutes early every day to "make sure that I have my day all planned out as much as possible" (to decrease the likelihood of committing errors in her work). It took her much longer than necessary to accomplish tasks or to make decisions because she would question the accuracy of every step in the process. In addition, Adrian reported that her symptoms had a negative impact on her social and family life. She claimed that her children often complained that she was always in a bad mood. She knew that she was spending little time with her friends and had noticed that the few men she dated never seemed to call her back after the first or second date: "They can sense that I'm not a fun person." Moreover, her worry and anxiety had affected her physically. She reported having "borderline hypertension" (moderately elevated blood pressure), which her family doctor had attributed to stress. Adrian also had a history of migraine headaches that were fairly well controlled with prescription medication but seemed more likely to occur after she worried excessively.

In addition to her worry and anxiety over various life matters (e.g., job performance, children's well-being), Adrian reported some discomfort in social situations in which she might be observed or evaluated by others. Specifically, Adrian said that dating, being assertive, and participating in meetings and public speaking were situations that she tended to endure with moderately high levels of anxiety and distress. Despite her fear of being evaluated negatively by others, however, Adrian stated that she rarely avoided these social situations. She noted that some of her apprehension of these social situations was related to her concern that she would lose her train of thought during the interaction and be embarrassed.

Clinical History

Adrian reported a fairly typical middle-class upbringing. She got along quite well with her two younger brothers and her parents. Although she regarded her parents as "uptight and serious," she did not believe that either of them had a history of an emotional disorder (e.g., anxiety, depression). In fact, the only family member that Adrian could recall who had such difficulties was her paternal grandfather, who had alcoholism. Adrian thought of herself as being shy throughout childhood; nevertheless, she reported several enduring friendships and hobbies. She had been an A student until high school (age 14), when she and her family moved to another city and she started attending a new school where she did not know anyone. On the basis of her past grades and test scores, Adrian was advised to take honors classes at her new school. At this time, she began to worry excessively—specifically, that she would fail these classes. She began to have trouble sleeping the night before an exam and noticed some trouble concentrating in her more challenging classes. Her fear of failure emerged at this time, and she began to procrastinate on homework assignments, completing them at the last minute. She also recalled that her shyness increased during this period; she felt more anxious around boys and more hesitant to speak up in class.

Adrian's parents and friends tried to reassure her that everything was fine and not to worry. Her teachers also tried to help her relax, and some offered to read rough drafts of her papers to provide reassurance that she would ultimately receive a passing grade for her work. However, Adrian's worries and insomnia increased even more when she started getting Bs in a few of her classes. She feared that because she was no longer a straight-A student, she might not be able to get into college. Her increasing sleep problems contributed to her worries as well—she was concerned that if she did not get enough sleep, her schoolwork would suffer even more.

Adrian's symptoms tended to wax and wane throughout her high school and college years. She noticed that she slept better and had fewer concentration and memory problems during summer vacations and holidays. However, the symptoms returned with the new school year and during exam periods. Dating often increased Adrian's anxiety as well, based on her worries that her date would not like her or would evaluate her negatively. As a result of this, and because her parents, whom she regarded as strict, had not permitted her to date until she was 17, Adrian dated infrequently. Nevertheless, during her senior year of college, she met the man she eventually married, at age 22.

During the first few years of her marriage, Adrian noticed that she felt less anxious. Yet, problems arose in her marriage after the birth of her two children. Her husband, who was a biochemist and a native of Hungary, wanted to move the family back to his homeland so that he could take an academic position in Budapest. Adrian wanted her children to be raised in the United States and had no desire to live outside the country herself. This conflict eventually led to divorce, and her husband moved back to Budapest alone. At first, he visited the children over the holidays and during summers. However, as the children got older, they began to travel during vacations to visit their father in Hungary. During these visits, Adrian worried excessively about her children's safety and well-being. This worry, along

with her concerns about job performance, minor matters, and her relationships with men, spiraled to higher and higher levels of frequency and intensity.

As noted earlier, Adrian also worried about her brief experimentation with marijuana during college. Although she had tried marijuana on only a handful of occasions when she was 20, Adrian was concerned that these experiences had killed some of her brain cells, causing her persistent problems with her memory and concentration. Her family doctor had reassured her that her past marijuana use had most likely not permanently altered her memory and concentration. Adrian was able to accept this reassurance, but her confidence in her doctor's words usually eroded over the course of a few days, or as soon as she perceived that she was having trouble concentrating or remembering.

DSM-5 Diagnosis

Based on this information, Adrian was assigned the following *DSM-5* (*Diagnostic and Statistical Manual of Mental Disorders*, 5th ed.) (American Psychiatric Association, 2013) diagnoses:

300.02 Generalized anxiety disorder (principal diagnosis)

300.23 Social anxiety disorder

Borderline hypertension, migraine headaches

Although the multiaxial diagnostic system in earlier editions of the *DSM* has been eliminated in *DSM-5*, medical conditions relevant to the clinical presentation that had previously been recorded on Axis III in *DSM-IV* should be listed along with clinical diagnoses.

At the beginning of treatment, Adrian displayed all of the symptoms of *DSM-5* generalized anxiety disorder (GAD) (American Psychiatric Association, 2013). In *DSM-5*, GAD is defined by the following features: (a) the person experiences excessive anxiety and worry about a number of events or activities (such as work or school performance) and this occurs more days than not for at least 6 months; (b) the person finds it difficult to control the worry; and (c) the anxiety and worry are associated with three (or more) of the following six symptoms: restlessness or feeling keyed up or on edge, being easily fatigued, difficulty concentrating or mind going blank, irritability, muscle tension, and sleep disturbance (difficulty in falling or staying asleep, or restless, unsatisfying sleep). To warrant a *DSM-5* diagnosis, these symptoms must cause the person considerable distress or lifestyle interference. Moreover, a diagnosis of GAD is ruled out when the symptoms of worry and generalized anxiety are better accounted for by another emotional disorder (e.g., worry about having unexpected panic attacks, as in panic disorder, should not be considered as contributing to a GAD diagnosis), the physical effects of a substance (e.g., drugs of abuse, medications), or a general medical condition (e.g., hyperthyroidism).

In the preceding editions of the *DSM*, GAD was not assigned when its symptoms (i.e., chronic anxiety and worry) occurred exclusively during the course of a mood disorder (e.g., major depression, bipolar disorder) or posttraumatic stress disorder. In *DSM-5*, this diagnostic hierarchy rule was removed meaning that a GAD

diagnosis is now permissible even when the disturbance occurs at the same time as a mood disorder or a posttraumatic stress disorder.

The nature and treatment of GAD are discussed in more detail throughout the remainder of this case. A full discussion of social anxiety disorder is presented in Case 3.

CASE FORMULATION USING THE INTEGRATIVE MODEL

Similar to the discussion of other anxiety disorders in this book (e.g., panic disorder, social anxiety disorder), the integrative model of GAD highlights the role of both biological and psychological factors in the origins and maintenance of this condition (Barlow & Durand, 2015). Biological factors are viewed as contributing to vulnerability to GAD. As noted in other cases on anxiety disorders in this book, investigations of anxiety as a human trait show a clear heritable factor. Likewise, studies have indicated that there may be a genetic contribution to GAD. For example, GAD tends to run in families, as there is a higher frequency of GAD among first-order relatives (i.e., parents, siblings) of patients with GAD than among persons with no anxiety disorders or persons with panic disorder (Hettema, Neale, & Kendler, 2001; Newman & Bland, 2006; Noyes, Clarkson, Crowe, Yates, & McChesney, 1987; Noyes et al., 1992). These findings have been strengthened by twin studies (e.g., Kendler, Neale, Kessler, Heath, & Eaves, 1992a), which found that the risk of GAD was greater in monozygotic (identical) female twins than in dizygotic (fraternal) female twins when one twin already had GAD. As monozygotic twins have exactly the same genes and dizygotic twins share only about 50% of each other's genes (the same amount shared with first-order relatives), the higher rate of GAD in monozygotic twin pairs suggests that genetic factors contribute to the development of this disorder (Hettema, Prescott, & Kendler, 2004; Hettema, Prescott, Myers, Neale, & Kendler, 2005).

Preliminary evidence suggests that patients with GAD may possess a distinguishing feature that is important in understanding the causes and maintenance of this disorder. Unlike individuals without anxiety disorders, those with GAD show *diminished responsiveness* on many physiological measures such as heart rate, blood pressure, skin conductance, and respiration when undergoing a stressful laboratory task (e.g., detection of predetermined target numbers on a computer screen that displays a rapidly scrolling series of numbers) (Hoehn-Saric, McLeod, & Zimmerli, 1989). Research has found that, compared to patients with other anxiety disorders, such as those with panic disorder, patients with GAD report a predominance of symptoms of tension (e.g., muscle tension, irritability) as opposed to symptoms of autonomic arousal (e.g., accelerated heart rate, shortness of breath) (Brown, Marten, & Barlow, 1995). This was true for Adrian, who reported that her chronic worry was accompanied mainly by symptoms of irritability, problems in getting and staying asleep, muscle tension and headaches, and feelings of being keyed up and on edge. Findings such as these have led researchers to consider persons with GAD to be *autonomic restrictors* because symptoms of tension have been observed to predominate over symptoms of autonomic arousal in these individuals.

What might account for these findings, which, if borne out in future research, would demonstrate a clear distinction between people with GAD and those with

some other anxiety disorder? The answer may be related to certain cognitive characteristics of these individuals. Specifically, those with GAD are highly hypervigilant or sensitive to potential threat in general, particularly if the threat has some personal relevance. This feature is also seen in other anxiety disorders; however, the attentional focus on the threat cues is more specific to the particular disorder (e.g., in Case 2 "Panic Disorder and Agoraphobia," John Donahue was hypervigilant for physical sensations that might signify an imminent panic attack). Unlike other anxiety disorders such as panic disorder, the attentional focus on potential threat is more "generalized" on the events of everyday life. Indeed, a cardinal feature of GAD is the general tendency to overestimate the risk or threat (worry) of everyday events and activities. This was clearly evident in Adrian, who worried excessively about her job performance, her children's well-being, her relationships with men, and a number of minor matters (e.g., getting to appointments on time, keeping her house clean, maintaining regular contact with family and friends).

Research has shown that worry is more strongly related to symptoms of tension than to symptoms of autonomic arousal (Brown, Antony, & Barlow, 1992; Brown, Chorpita, & Barlow, 1998; Brown et al., 1995). So why is worry associated with a predominance of tension symptoms and autonomic restriction? In a possible explanation for this association, Borkovec and colleagues found that although people with GAD show restrictions in autonomic arousal, they evidence elevations in EEG beta activity, reflecting intense cognitive processing in the frontal lobes of the brain, particularly in the left hemisphere (Carter, Johnson, & Borkovec, 1986). Thus, one hypothesis is that people with GAD engage in intense worry without accompanying images of the topic that is of concern to them (imagery would be reflected by activity in the right hemisphere of the brain). Accordingly, worry may cause autonomic restriction (Borkovec, 1994). Worriers may be so preoccupied in *thinking* about potential problems or threats that they do not have the attentional capacity to create *images* of these issues in their minds. In other words, worriers may avoid these images because the images of threat are associated with higher levels of negative emotions and autonomic activity (Borkovec, Alcaine, & Behar, 2004).

As you will note from your reading of this and other cases in this book on anxiety disorders, imaginal exposure to threatening material (e.g., prolonged visualization in one's mind of flying on an airplane as an initial step in the treatment of fear of flying) is an important technique of treatment. Although imaginal exposure is associated with increased distress initially, continued exposure to these threatening images typically results in enduring anxiety reduction (see Case 4 "Posttraumatic Stress Disorder" for more details on this process). However, because people with GAD do not naturally engage in this process, they may avoid much of the unpleasantness associated with the negative affect and imagery, but they are never able to "work through" the problems they face and arrive at solutions. Therefore, they become chronic worriers, with accompanying autonomic inflexibility and persistent symptoms of tension (e.g., muscle aches and tension, irritability). The connections between worry, avoidance, and ineffective problem solving are illustrated by Adrian's performance in high school. Excessively worrying that she might fail in her honors classes, Adrian had trouble sleeping before exams and had trouble

concentrating in her more challenging classes. Adrian's concerns about failure in these classes became so aversive that she began to procrastinate and leave homework assignments uncompleted until the last minute (this avoidance reinforced the idea in Adrian's mind that she was prone to failure).

Treatment Goals and Planning

Adrian was offered a program at the anxiety disorders clinic called "worry control treatment" (Craske & Barlow, 2006). This treatment approach includes the following elements: cognitive therapy, worry exposure, and worry behavior prevention. In cognitive therapy, the content of the patient's worrisome thoughts and predictions is identified. Once these thoughts are identified, the patient is taught methods to critically evaluate the validity of his or her predictions, with the ultimate goal of replacing these misperceptions with more accurate interpretations. For example, as illustrated in the next section of this case, Adrian was guided by her therapist to realize that she had misinterpreted events at work (e.g., suggestions by her supervisor to take a vacation as signs that she was going to be fired).

Based on the integrative model discussed previously, worry exposure involves techniques with which patients are asked to directly confront anxiety-provoking images of their worrisome predictions (e.g., based on her worries when she had not heard from her children in a few hours, Adrian would be asked to hold, for several minutes, an image in her mind of her children being involved in an accident). Used in conjunction with cognitive therapy, these techniques would allow Adrian to confront and work through anxious predictions and images that she had avoided through worry.

Finally, in learning how to prevent worry behavior, individuals are taught to identify and eliminate activities they have been engaging in as a response to their worry. This is done because these behaviors can maintain or strengthen worrisome thoughts. For instance, Adrian always arrived at work early because she felt that if she did not get organized beforehand, she would make many errors during the workday and would ultimately be fired. Thus, her habit of arriving at work early could be viewed as maintaining her belief that she was prone to errors that would result in her dismissal (e.g., "the only reason I have not committed 'fatal' errors is because I have decreased their likelihood by getting to work early"). In one application of worry behavior prevention, Adrian would be asked to arrive at work at the regular time and compare the actual outcome of this behavior change (e.g., no effects on her job performance or on her supervisor's appraisal of her performance) to her feared prediction of what would occur (e.g., marked increase in mistakes on the job leading to a negative evaluation by her supervisor). Thus, worry behavior prevention can be another powerful technique for helping patients challenge and refute their feared predictions (worries) about day-to-day events.

Course of Treatment and Treatment Outcome

During the first few sessions of treatment, Adrian received a psychoeducational (teaching) component in which the nature of anxiety and worry was explained and a rationale for treatment was provided. At this time, she was asked to begin

keeping daily records of her thoughts and her anxiety symptoms (self-monitoring). The types of information that she monitored included daily levels of anxiety, depression, and pleasantness; percentage of the day spent worrying; triggers of episodes of worry; and the content of her thoughts and nature of her behaviors associated with her worry. In addition to providing an indicator of the extent of her improvement across therapy, these self-monitoring records were very important to the application of the various treatment techniques (e.g., identification of the thoughts to be evaluated in session with cognitive therapy).

As treatment progressed, it became apparent that Adrian had two areas of worry that occurred most frequently and intensely and that were the most difficult for her to control: job performance (and related problems with concentration and memory) and her children's well-being. Thus, a good portion of treatment focused on these areas. For example, in the cognitive therapy component of treatment, Adrian learned about two basic types of anxiety-producing thoughts: *probability overestimation*, that is, overestimating the likelihood of negative or harmful events ("I'm going to be fired at work"), and *catastrophic thinking*, which involves the perception that if a negative event were to occur, it would be "catastrophic" or beyond the person's ability to cope (e.g., "If I'm fired, I'll wind up desolate and penniless because I won't be able to get another job") (see Case 2 for further descriptions and examples of such thoughts). After Adrian and her therapist identified these thoughts, they began the process of examining the validity of these perceptions with the goal of replacing them with more accurate interpretations.

For instance, on one of her self-monitoring records, Adrian wrote down her prediction that she would be fired for making her supervisor angry at work (see Figure 1.1; Tom is Adrian's supervisor). This was clearly a probability overestimation because Adrian was a very good employee and had never been even close to being fired in her life (even in past instances when she had disagreements with her supervisor). During this process, Adrian was asked to evaluate the accuracy of her perception of her supervisor's suggestion that she take some vacation time: Did it really mean he was planning to fire her? Adrian had avoided asking her supervisor to clarify this remark because she was afraid his answer would confirm her fears that he wanted to terminate her. After her therapist helped her see many reasons her supervisor might have made this comment, Adrian approached the supervisor to learn why he had said this to her. Much to her surprise (and directly challenging her feared prediction), her supervisor told her that she was a valued employee, that he definitely did not want her to leave the bank, and that he had made the remark based on his observation that she was long overdue for a vacation.

The technique of worry exposure also helped Adrian to examine the validity of her worrisome thoughts and to gain control over her worry. Adrian was instructed to set aside a specific time each day (usually an hour in the evening) to devote to attending to her worries. Starting with her strongest worries (job performance, children's well-being), she identified her worst feared outcome related to the worry (e.g., her children being killed in an automobile accident). Then, Adrian was asked to hold, for 20 to 30 minutes at a time, an image in her mind of the feared outcome. Following this "imaginal exposure," she was instructed to use cognitive therapy techniques to challenge the accuracy of this prediction (e.g., list alternatives, other than a fatal accident, for why her children did not telephone her at an

DAILY RECORD OF WORRY CONTROL

Date 6/12 Time began 5:30 am/(pm)
End 6:15 am/(pm)

Anxiety (circle): 0 . . . . 1 . . . . 2 . . . . 3 . . . . (4) . . . . 5 . . . . 6 . . . . 7 8
None Mild Moderate Severe Extreme

Symptoms During Hour:

Trembling/Twitching/Shaky	____	Nausea/Diarrhea	____
Muscle tension/Aches/Sore	____	Hot flashes/Chills	____
Restlessness	3	Frequent urination	____
Fatigue	____	Trouble swallowing	____
Shortness of breath	____	Keyed up/On edge	4
Pounding/Racing heart	____	Easily startled/Jumpy	____
Sweating/Clammy hands	____	Difficulty concentrating	____
Dry mouth	____	Trouble sleeping	____
Dizzy/Lightheadedness	____	Irritability	3

Worry content: *I didn't do what my boss, Tom, asked me to do. He asked me to call Frank about a problem at work, but I thought it was better to go through Mary. I heard that Tom ran into Frank, who told him I hadn't called.*

Worst possible feared outcome: *Tom will be angry that I didn't do what he asked me to do. He'll fire me.*

Anxiety (0–8): 5

Possible alternatives: *He's not angry. When I explain what I did he'll understand. Maybe I won't ever have to explain. People make mistakes—I made a mistake. Tom's not the hothead I sometimes think he is. He's just a bit gruff on the outside. In the end, it won't matter. It will be settled one way or the other.*

Belief in worry (0–100): 60 *(This one really set me back!)*

Anxiety (0–8): 2

Figure 1.1 • Daily Record of Worry Control.

expected time). In addition to allowing her to work through the worries that she typically avoided, the worry exposure technique also helped her to feel more in control of the worries that intruded into her mind throughout the day. Because worry exposure provided her "free rein" to worry for a full hour each day, she was better

able to dismiss the worries as they occurred naturally because she knew she would give them her full attention later in the day.

This technique was very important in addressing Adrian's worries about the well-being of her children. For example, when they were away in Hungary for the summer (as was the case during the first half of Adrian's treatment), Adrian constantly worried that they had been killed in a car accident because "Hungarian drivers are the worst, except for Basque Spaniards."

Additionally, if she did not reach the children when she telephoned to say hello and check up on them, and they did not call her back within 30 minutes, Adrian worried that they had been kidnapped or killed (probability overestimations). She frequently stated how upsetting it was for her to have these thoughts and that she hated to even think them, much less write them down or hold images of them in her mind for up to 30 minutes at a time. She added, "I'd never be able to handle it if something happened to my kids" (catastrophic thinking). Adrian was initially somewhat noncompliant with regularly completing her daily worry exposures at home, stating that "they take up too much time." However, another reason for her occasional noncompliance seemed to be the high levels of anxiety that these exercises evoked when they focused on Adrian's worries about the safety of her children. The therapist addressed this reason by reminding Adrian of the rationale for worry exposure and by pointing out to her that the high levels of distress these exercises produced emphasized her need to work through her worries in order to feel more comfortable and less worried in her day-to-day life. In addition, the therapist assisted Adrian to generate alternatives to her worst-feared outcome that her kids must have been injured or killed if she had not heard from them. At first, Adrian had considerable difficulty coming up with other reasons for why time might pass without her hearing from the children. However, through her work in the therapy sessions and in her daily worry exposures, she began to see how unlikely her children were to be harmed, in comparison to more plausible alternatives (see Figure 1.2).

Gradually, Adrian discovered that she worried less and less about her children as the time approached for them to return home. Instead of worrying, she began to feel excited at the prospect of seeing them again. Additionally, she found that when she spoke with them on the telephone, the less frequently she called, the more positive their conversations were (her frequent telephone calls to check on them was a worry behavior). Adrian said, "Now I look forward to our calls and I don't get so worked up about talking to my kids." For virtually all of her worries that she addressed (e.g., children's well-being, job performance, possible brain damage from marijuana experimentation), Adrian ultimately found the worry exposure hours to be quite helpful. In them she learned to confront her fears systematically and to think of more realistic, less catastrophic possible outcomes and solutions.

Worry behavior prevention was the other major technique used in Adrian's treatment. First, she and her therapist identified Adrian's behaviors that served to maintain or strengthen her worries. In Adrian's case, these behaviors included arriving at work early and staying late, calling her children in Hungary very often (at the start of treatment, Adrian called them several times per day!), doing excessive housecleaning (based on her concern that a friend might drop by and conclude that she was a slob), and sleeping only 6 hours per night ("There's so much to do,

DAILY RECORD OF WORRY CONTROL

Date 7/3 Time began 6:30 am/(pm)
End 7:30 am/(pm)

Anxiety (circle): 0 . . . . 1 . . . . 2 . . . . 3 . . . . 4 . . . (5) . . . . 6 . . . . 7 8
None Mild Moderate Severe Extreme

Symptoms During Hour:				
	Trembling/Twitching/Shaky		Nausea/Diarrhea	
	Muscle tension/Aches/Sore	3	Hot flashes/Chills	
	Restlessness	4	Frequent urination	
	Fatigue	5	Trouble swallowing	
	Shortness of breath		Keyed up/On edge	4
	Pounding/Racing heart		Easily startled/Jumpy	
	Sweating/Clammy hands		Difficulty concentrating	
	Dry mouth	1	Trouble sleeping	
	Dizzy/Lightheadedness		Irritability	3

Worry content: *The children haven't called me back yet. It's been over 2 hours since I called.*

Worst possible feared outcome: *They've been hurt or killed in a car accident.*

Anxiety (0–8): 8

Possible alternatives: *They're OK—They're out playing. They forgot. Maybe they're preoccupied with something or maybe their grandmother forgot to let them know that I called. They could be just reading or drawing or playing games with each other. A friend might have stopped by.*

Belief in worry (0–100): 65

Anxiety (0–8): 4

Figure 1.2 • Another Daily Record of Worry Control.

and I get worried that I'm not accomplishing the things I need to if I go to bed early"). As noted before, one of the goals of worry behavior prevention is to have patients discontinue the behavior and compare what happens afterward with their feared prediction (worry) of what would occur following this change. The

application of this technique to Adrian's habit of arriving at work early was discussed earlier in this case (she learned that if she arrived at and left work at normal hours she did not have an increase in mistakes on the job or negative evaluations by her supervisor). Over the course of treatment, similar practices were completed for Adrian's other worry behaviors (e.g., go to bed earlier and earlier to the point of getting 8 hours of sleep per night; gradually decrease the frequency of telephone calls to children to once every other day; gradually relax the schedule for housecleaning). In fact, the seemingly minor intervention of moving up Adrian's bedtime had a substantial impact on her anxiety symptoms. Not only did this activity refute her prediction that she would not be able to accomplish necessary tasks if she slept more than 6 hours but also she began to sleep better and, over time, reported fewer concentration problems and less irritability.

In total, Adrian received 15 sessions of treatment. At the end of treatment, she reported decreased levels of worry and anxiety. She still tended to worry about her children, work, minor matters, and her health (i.e., her concentration and memory) but reported that her worries occupied only 5% to 10% of her day, in contrast to 75% of the day at pretreatment. Although Adrian continued to worry excessively on occasion, she said that she felt more in control of her worries. Her children also noticed that she was "less moody" and "more fun to be around." Her sleep improved, and she began attending an exercise class that she enjoyed.

Adrian observed some improvements in her concentration and memory, and hence she reported higher self-esteem and self-confidence at work. Remaining concentration problems occurred intermittently and did not seem to be triggered by any particular situation; however, she noted that her concentration difficulties were largely confined to her working hours. The therapist hypothesized that these symptoms may have been best accounted for by Adrian's remaining social anxiety concerns (her social anxiety disorder was not directly addressed in treatment). Specifically, they accounted for her apprehension of dealing with authority figures, being assertive, and interacting with customers and employees. Indeed, although she continued to have some fear of being negatively evaluated by others, Adrian did report improvement in this area. For example, Adrian began to go on more social outings with friends, and she stated that she was beginning to feel less anxious about dating. Thus, while she continued to show some apprehension of certain social situations, she rarely avoided them and did not feel that these symptoms interfered with her life to any measurable degree.

DISCUSSION

Adrian had a diagnosis that is one of the most common among the anxiety disorders. Studies have provided estimates of the lifetime prevalence for GAD in the general population ranging from 1.9% to 5.7% (*lifetime prevalence* refers to the percentage of people who meet the criteria for GAD at some point during their lives). The most recent prevalence data for GAD have come from the National Comorbidity Survey Replication, in which more than 9,000 people in the community were evaluated with structured interviews. This study obtained prevalence estimates of 3.1% and 5.7% for current and lifetime GAD, respectively (Kessler, Berglund, et al., 2005; Kessler, Chui, Demler, & Walters, 2005). A consistent

finding in these community surveys is a 2:1 female-to-male preponderance of GAD (e.g., Wittchen, Zhao, Kessler, & Eaton, 1994; Yonkers, Warshaw, Massion, & Keller, 1996).

Anxiety in its various forms is very prevalent in the elderly. For example, Himmelfarb and Murrell (1984) found that 17% of elderly men and 21.5% of elderly women had sufficiently severe anxiety symptoms to warrant treatment, although it is not clear how many of these individuals actually met the criteria for GAD. Flint (1994) reported prevalence rates of GAD in older adults to be as high as 7%. A larger epidemiological study of mental disorders found that the prevalence rates of GAD in older adults were as high as 10% (Byers, Yaffe, Covinsky, Friedman, & Bruce, 2010). Another indicator of the potential prevalence of GAD symptoms in the elderly comes from data showing that the use of minor tranquilizers is very high (ranging from 17% to 50%) in this population (Salzman, 1991).

Although general anxiety disorder was once thought to be associated with less distress and impairment often found in other anxiety and related disorders (such as panic disorder and obsessive-compulsive disorder), data indicate otherwise. In an earlier version of the National Comorbidity Survey, 82% of people with GAD reported that their problem was associated with significant impairment, as indexed by past treatment-seeking behavior (either drugs or psychotherapy) or substantial lifestyle interference (Wittchen et al., 1994). In addition, research has routinely shown that GAD rarely presents in isolation. Community surveys indicate that 90.4% of persons with GAD have a history of some other mental disorder at some point in their lives (Wittchen et al., 1994). In studies of patient samples, more than 80% of patients with a current diagnosis of GAD have additional anxiety or mood disorders at the time of their assessment (Brown & Barlow, 1992a; Brown, Campbell, Lehman, Grisham, & Mancill, 2001). In the Brown et al. (2001) study, the disorders that most commonly co-occurred with GAD were panic disorder, social anxiety disorder, and mood disorders (major depression, persistent depressive disorder).

Like Adrian, some people with GAD report an onset in early adulthood or late adolescence, usually in response to some form of life stress (Campbell, Brown, & Grisham, 2003; Hoehn-Saric, Hazlett, & McLeod, 1993). However, the majority of studies have found that GAD is associated with an earlier and more gradual onset than most other anxiety disorders (Beesdo, Pine, Lieb, & Wittchen, 2010; Brown, Barlow, & Liebowitz, 1994; Brown et al., 2001). Indeed, many patients with GAD report feeling anxious, tense, and worried all their lives (Barlow, 2002; Noyes et al., 1992; Sanderson & Barlow, 1990).

Because a large portion of people with GAD seek treatment in primary care settings, they are perhaps most likely to receive medications. The drugs most frequently used for the treatment of GAD are the benzodiazepines (i.e., minor tranquilizers such as diazepam [Valium]). However, the limited evidence indicates that any positive effects of benzodiazepines are relatively weak and short-lived (Schweizer & Rickels, 1996). In addition, researchers have observed certain risks associated with benzodiazepines. For instance, benzodiazepines appear to create problems with both cognitive and motor functioning (e.g., O'Hanlon, Haak, Blaauw, & Riemersma, 1982; van Laar, Volkerts, & Verbaten, 2001). Specifically, people do not seem to be as "alert" cognitively on the job or at school when they are taking benzodiazepines.

These drugs may also impair a person's ability to drive a car, and they seem to be associated with a higher frequency of falls that result in hip fractures in the elderly (Ray, Gurwitz, Decker, & Kennedy, 1992; Wang, Bohn, Glynn, Mogun, & Avorn, 2001). More important, research has indicated that benzodiazepines may produce both psychological and physical dependence, making it quite difficult for people to stop taking them (Mathew & Hoffman, 2009; Noyes, Garvey, Cook, & Suelzer, 1991; Rickels, Schweizer, Case, & Greenblatt, 1990). Based on these considerations, most researchers agree that benzodiazepines should be used optimally for short-term relief of anxiety associated with a temporary crisis or stressful event (e.g., a family crisis) and should not be used for long-term anxiety management. However, there is increasing evidence that antidepressant medications (e.g., venlafaxine, paroxetine) have better effectiveness in the treatment of GAD (Brawman-Mintzer, 2001; Craske & Barlow, 2006; Mathew & Hoffman, 2009).

In the short term, psychological treatments appear to have the same effectiveness of drugs, but they are probably better in the long term and are associated with less attrition (Borkovec, Newman, Pincus, & Lytle, 2002; Mitte, 2005a; Newman et al., 2011). Initial studies examining the effectiveness of psychological treatments reported that these interventions are not more powerful than placebo psychotherapies (e.g., a placebo treatment might involve providing general reassurance to patients without directly delivering components that are believed to be effective in reducing the symptoms of GAD) (for a review, see Roemer & Orsillo, 2014). One possible reason for the modest outcomes observed in these studies is that many of the treatments examined were somewhat nonspecific (e.g., relaxation training to reduce general anxiety symptoms) and did not contain components tailored to address the key aspects of GAD, namely, excessive and uncontrollable worry (Brown et al., 1994). One reason for this lack of specificity is that the diagnostic definition of GAD has changed radically over the past 30 years, evolving from a residual category to describe general symptoms of anxiety that could not be accounted for by another diagnosis (*DSM-III*; American Psychiatric Association, 1980) to a full-fledged diagnosis with its own unique and defining key feature (excessive and uncontrollable worry about a number of events and activities; *DSM-5*).

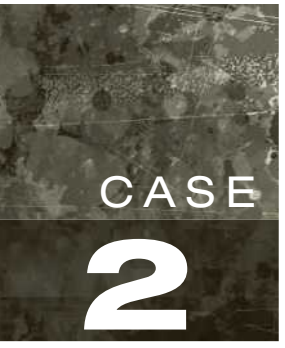
Subsequently, investigators developed and evaluated psychological treatments that directly target excessive worry. These treatments are very similar to the form of therapy Adrian received. Specifically, they include components of cognitive therapy and direct exposure to worry-related images. For example, Borkovec and Costello (1993) constructed such a treatment and found it to be significantly better than a placebo psychological treatment, both at posttreatment and 1-year follow-up. Although their treatment was superior to placebo therapy (and, to a certain extent, superior to relaxation training), only 58% of patients met criteria for high endstate functioning at 1-year follow-up (*high endstate* is a term used in treatment outcome research to reflect a therapeutic response in which no or minimal symptoms of the disorder remain). In a more recent study entailing similar treatment conditions, comparable rates of success were found in patients followed out to 24 months posttreatment (Borkovec et al., 2002). Thus, although these findings are quite encouraging in reference to early studies, the fact that just over

half of patients show durable and substantial improvement points to the need for the development of more powerful treatments for GAD.

More recently, attempts have been made to increase the effectiveness of these cognitive-behavioral treatments by incorporating elements that focus on the acceptance rather than the avoidance of distressing thoughts and feelings (Roemer & Orsillo, 2014). Early findings indicate that these acceptance-based treatments may indeed enhance the success rates for GAD (e.g., Hayes-Skelton, Roemer, & Orsillo, 2013).

THINKING CRITICALLY

1. Worry is the key diagnostic feature of GAD as defined by *DSM-5*. Because everyone tends to worry on occasion, what do you think differentiates normal worry from the worry found in GAD?
2. While in treatment, some people with GAD are reluctant to relinquish their worrying and worry behaviors because they believe that these features are helpful to them (e.g., Adrian arrived at work 30 minutes early each morning to plan her day and to decrease the likelihood of making mistakes or overlooking important tasks). Do you believe worry can have adaptive qualities? If so, what are they? What do you believe are the negative consequences of worry, especially when the worry is at the level found in GAD?
3. Research indicates that, unlike many other disorders (e.g., panic disorder, obsessive-compulsive disorder), GAD has a gradual onset that frequently dates back to childhood; many adults with GAD recall being tense, anxious, and worried all of their lives. Why do you think this is the case? Do you believe that the tendency to worry excessively is more like an enduring personality characteristic than a symptom that occurs acutely from time to time?
4. In addition to the strategies discussed in Adrian's treatment, what other methods do you think would be helpful in treating persons with GAD?



Panic Disorder and Agoraphobia

John Donahue was a 45-year-old married Caucasian man with three sons. Although well educated and successful (he was a high school principal), John had been experiencing difficulties with panic attacks for the past 15 years. Despite a number of consultations with mental health professionals throughout the prior several years, his panic attacks had not decreased substantially. In fact, they had increased in frequency when he and his family moved to upstate New York so that he could begin work at a new school. Certain that he could overcome these attacks, John searched the phone book for sources of possible help. He was excited to see an advertisement for a clinic specializing in the treatment of anxiety disorders and made an appointment.

During his first visit to the clinic, John told his therapist that he was experiencing two to five panic attacks per month and the therapist asked him to describe a typical one that had happened recently. John recalled a panic attack that had occurred the previous week while he was driving with his family to a computer store. He had not been aware of feeling anxious before the attack, although he recollected that he might have been "keyed up" over the kids making a lot of noise in the back seat. In fact, John remembered that the attack began right after he had quickly turned around to tell the kids to "settle down." Immediately after he turned back to look at the road, John felt dizzy. As soon as he noticed this sensation, he experienced a rapid and intense surge of other sensations, including sweating, accelerated heart rate, hot flushes, trembling, and the feeling of being detached from his body (depersonalization). In response to this intense surge, John began to move around in the driver's seat, shifting his posture and taking his hands off the steering wheel, only to grab the wheel again more firmly. When his wife asked him if he was okay, John could not answer her because he felt so stricken by the sensations and was so focused on trying to gain control over them. Fearing that he was going to crash the car, John pulled to the side of the road. He jumped out of the car and walked quickly around to the passenger's side. He lowered

himself into a squatting position and tried to gain control over his breathing by using techniques he and his wife had learned in Lamaze classes. After 10 minutes had passed, John began to feel better. Because of a high level of anxiety that continued to linger after the panic attack and because he feared that he might experience another attack, however, John asked his wife to do the driving for the remainder of the day.

John told his therapist that he had been even more hesitant about driving since then, particularly on the road where he had experienced the attack. Although the majority of his panic attacks had now become associated with specific situations, John reported that he still occasionally had panic attacks that came totally out of the blue. He noted that while he was having only a few attacks per month on average, he was experiencing a high level of anxiety every day, focused on the possibility that he might have another panic attack at any time. Indeed, John had developed extensive apprehension or avoidance for a variety of situations. These included driving (particularly long distances or interstate driving), flying, riding in elevators, being in wide open spaces (e.g., empty parking lots), taking long walks alone, going to movie theaters, attending church, and being out of town.

Knowing that the information would be very important in treatment, John's therapist tried to determine exactly what John was afraid would happen if he had a panic attack in these situations. John recalled that when his panic attacks were most severe (i.e., in the several years after the attacks first emerged), he thought they had a physical cause. Specifically, he feared that the attacks were symptoms of a heart disease that his doctors had failed to identify. However, at the present time, he was not concerned about dying or having a physical disease because his doctors had persuaded him that he was okay. Rather, John was now most afraid of passing out or losing control of his arms and legs and falling over. In fact, John reported that during some of his more intense panic attacks, such as the one he had just described, his arms and legs *had* jerked around in an involuntary and uncontrollable fashion. John's fear of passing out, falling over, or losing control of his limbs seemed to occur in most situations in which he experienced apprehension and avoidance—for example, driving (losing control of the car and crashing) or being in church, in elevators, and in wide open spaces (falling over and drawing attention to himself).

In gathering more information that might later be useful in treatment, John's therapist asked him if he carried specific things with him or did things in response to a panic attack that either (a) helped him feel more comfortable in difficult situations or (b) seemed to decrease the likelihood that a feared consequence (e.g., fainting) would occur. Through this questioning, John's therapist was able to identify the following "safety behaviors" and "safety signals": 24-hour access to antianxiety medication, driving to the side of the road, and holding on to stationary objects and remaining near walls when he was walking. Safety behaviors and signals are defined and discussed in more detail later in the case.

Clinical History

During the initial appointment, John told his therapist about his long history of panic attacks. His first panic attack had occurred 15 years ago. It had happened

at 4:30 in the morning in his living room. John had fallen asleep on the sofa around 1:00 A.M. after returning from a night of drinking with some of his friends. Just after awakening at 4:30, he had suddenly felt stomach pains and a pulsating sensation in the back of his neck. All of a sudden, he noticed that his heart was racing, too. He immediately leaped off the sofa. As soon as he got up, John felt dizzy and feared that his head was "about to pop." John recalled that he "staggered" out the door to get some fresh air. Once outside, he began pacing and scratching the back of his neck and head in an effort to reduce his sensations. Although he did not know what he was suffering from, John was certain that he was dying. Despite this belief and the high intensity of the sensations, the attack only lasted about 5 to 7 minutes. When he began feeling better, he went back inside and awakened his wife to tell her what had happened.

The morning after this panic attack, John called his family doctor, who agreed to see him on the same day. John's doctor told him that he was in good health and speculated that John's nerves were just "letting off steam," perhaps due to the recent arrival of his first child and the fact that it was nearing the end of the school year, which was always an extremely busy time for John. To help him relax, the doctor gave him a prescription for Valium.

John did not fill the prescription because the attacks did not return immediately. However, he remembered having a second one about a month later. From then on, the attacks began to occur more regularly. When they became recurrent, John started to avoid situations in which they had occurred as well as situations in which he feared one was more likely to occur. On three occasions during the first few years of his panic attacks, John went to the emergency room of his local hospital because he was sure that his symptoms were a sign of a heart attack. It was during one of these emergency room visits that John first heard the term *panic attack* used as a descriptor of his symptoms.

The 7-year period after John's panic attacks first emerged was a particularly rough time for him because, as a method of trying to cope with panic attacks of increasing frequency and intensity, he relied on alcohol. In fact, John said he was drinking a case of beer per day during that time. Fortunately, with the assistance of therapists at a local community mental health center and a brief hospital stay, John's alcohol dependence ended quite abruptly after 7 years of heavy drinking (this occurred 6 years prior to his first visit to the anxiety disorders clinic). However, around that time, a psychiatrist prescribed John a high dosage of Xanax (the brand name for alprazolam, a high-potency benzodiazepine), which he still used. In addition to Xanax, John had been treated on a regular basis with psychotherapy by a clinical social worker for several years. He regarded his work with this social worker to be somewhat helpful because he was able to learn more about the nature of panic attacks as well as some ways of coping with them, such as telling himself calming statements like "This will pass." In the interim, he had relied on self-help books that he read regularly. Unfortunately, he found these books to be of limited value in furthering his recovery.

John's therapist inquired about his family background and asked if there was any history of emotional disorders in the family. John reported an extensive family history of psychological problems, which occurred almost exclusively on his mother's side. In addition to a long and continuing bout with alcoholism, John's

mother had also suffered from panic disorder with agoraphobia. Although he had always considered his mother to be an anxious woman who was constantly worried and excessively concerned about her and her children's physical symptoms, John did not realize that his mother had suffered from panic disorder until he had been diagnosed as having the same condition. In addition to his mother, his maternal grandfather and two of his mother's sisters had alcoholism or had abused alcohol. His maternal grandmother and another aunt on his mother's side had suffered from panic disorder; in fact, his aunt's agoraphobia was so severe that she had been housebound with the condition for 7 years. Of his three siblings, John stated that his older brother abused alcohol. He noted that both his sister and younger brother did not have a history of any emotional or substance use disorders.

After gathering this information, John's therapist administered a brief, semistructured clinical interview that evaluated for the presence of other *DSM-5* (*Diagnostic and Statistical Manual of Mental Disorders*, 5th ed.) anxiety disorders, mood disorders, obsessive-compulsive disorders, trauma-related disorders, somatic symptom disorders, and substance use disorders and screened for the presence of other syndromes (e.g., psychotic disorders). Beyond his past diagnosis of alcohol use disorder, John did not have any other diagnoses with the exception of some symptoms of recurrent worry about several areas (e.g., job performance, children's well-being), which are indicative of a generalized anxiety disorder. However, John's therapist did not assign generalized anxiety disorder as an additional diagnosis because he regarded these symptoms as "subclinical" (i.e., they were not severe or frequent enough to warrant a *DSM-5* diagnosis) and, to some degree, better accounted for by the symptoms associated with John's panic attacks (e.g., most of John's chronic anxiety was due to his worry about having additional panic attacks).

DSM-5 Diagnosis

Therefore, based on the preceding information, John's *DSM-5* diagnoses were as follows:

300.01 Panic disorder

300.22 Agoraphobia

305.00 Alcohol use disorder, in sustained remission

In many respects, John's symptoms and history reflected the typical clinical presentations of the diagnoses of panic disorder and agoraphobia. For instance, his symptoms were quite consistent with the *DSM-5* definition of panic disorder (American Psychiatric Association, 2013). In *DSM-5*, the key criteria for panic disorder are (a) recurrent unexpected panic attacks with (b) at least one of the attacks followed by 1 month (or more) of one or both of the following: (1) persistent concern or worry about additional panic attacks or their consequences (e.g., losing control) or (2) a significant maladaptive change in behavior related to the attacks (e.g., behaviors used to avoid having panic attacks such as avoidance of physical exercise). A panic attack is defined in *DSM-5* as an abrupt surge of intense fear or intense discomfort that reaches its peak within minutes and is accompanied by at least 4 of 13 symptoms such as accelerated heart rate, sweating, shortness of breath,

and dizziness. Panic attacks can be either *unexpected* or *expected*. Unexpected panic attacks, which are required for the *DSM-5* diagnosis of panic disorder, are panic attacks that occur when there is no obvious cue or trigger (i.e., they seem to occur "out of the blue"). In the case of expected panic attacks, there is an obvious cue or trigger for the attack such as a situation in which the panic attacks usually occur (e.g., when giving a speech as in social anxiety disorder). Expected panic attacks are commonly associated with other anxiety disorders such as social anxiety disorder and specific phobia.

John's experience was also consistent with the *DSM-5* diagnosis of agoraphobia: (a) marked fear or anxiety about 2 (or more) of 5 types of situations (using public transportation, being in open spaces, being in enclosed places, standing in line or being in a crowd, being outside of home alone); (b) fear or avoidance of these situations because of thoughts that escape might be difficult or help might not be available in the event of developing panic-like symptoms or other incapacitating or embarrassing systems (e.g., fear of falling in the elderly); (c) the agoraphobic situations almost always provoke fear or anxiety; (d) the agoraphobic situations are actively avoided, require the presence of a companion, or are endured with intense fear or anxiety; (e) the fear, anxiety, or avoidance is persistent and typically lasts for 6 months or more; and (f) the fear, anxiety, or avoidance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning. In preceding editions of the *DSM*, agoraphobia, when present, was typically assigned as accompanying feature of panic disorder but not as a separate diagnosis (e.g., "panic disorder with agoraphobia"). In *DSM-5*, agoraphobia can be diagnosed regardless of the presence of panic disorder; for instance, in cases where all the diagnostic criteria for agoraphobia are present but the situational fear and avoidance is in response to symptoms other than panic attacks (e.g., fear of incontinence). As in the case of John, if the *DSM-5* criteria for panic disorder and agoraphobia are met, both diagnoses should be assigned.

Finally, John's past diagnosis of alcohol use disorder was recorded with the specifier "in sustained remission." This specifier is appropriate when the person who previously met full criteria for alcohol use disorder has not displayed any symptoms of the disorder for a period of 12 months or longer (with the exception that the feature of craving or a strong desire or urge to use alcohol may still be present). This specifier was appropriate because John had displayed no symptoms of problematic alcohol use for over 6 years (despite the fact that his panic attacks continued). A full discussion of alcohol use disorder is provided in Case 14.

CASE FORMULATION USING THE INTEGRATIVE MODEL

John's therapist attempted to do much of the case formulation and treatment planning during the initial assessment session. In addition to obtaining the information necessary for making a *DSM-5* diagnosis, the therapist collected as much information as possible on what he believed to be the maintaining factors of John's panic disorder and agoraphobia. Such information included panic attack symptoms, agoraphobic situations, cognitions associated with panic attacks and anticipatory anxiety, and safety behaviors and safety signals. The importance of obtaining this

type of information is based on the integrative model on the causes and maintenance of panic disorder (Barlow, 2002; Barlow & Durand, 2015). This model acknowledges the evidence that we all inherit some vulnerability to experiencing stress (Eysenck, 1967; Tellegen et al., 1988). Specifically, this vulnerability is the tendency to be neurobiologically overreactive to the stress of common life events. Based on a number of factors, such as genetics, some individuals are more likely than others to experience an emergency alarm reaction (unexpected panic attack or false alarm). Thus, according to the integrative model, panic attacks are the normal emotion of *fear* (i.e., the fight-or-flight response) experienced at inappropriate or unexpected times. John's background would be highly consistent with this aspect of the model and research evidence indicating that genetic factors are influential in the transmission of vulnerability to panic attacks and panic disorder (Hettema, Neale, & Kendler, 2001; Kendler, Neale, Kessler, Heath, & Eaves, 1992a). Given the extensive history of panic disorder and alcoholism in his biological relatives, it would be quite reasonable to assume that compared to others who do not have this familial background, John inherited a higher level of vulnerability to experience a false alarm. Moreover, he experienced his first panic attack (false alarm) during a period of time that many would regard as stressful (i.e., birth of first child, hectic work schedule). This occurrence would also be consistent with the model asserting that the first panic attack usually arises in the context of life stress because the stress activates or *triggers* the preexisting vulnerability (the diathesis-stress model). Indeed, many researchers have found that the majority of patients with panic disorder report that their first attack occurred during a stressful period of their lives (Craske & Barlow, 2014).

However, vulnerability alone does not determine whether a person will develop a panic disorder. Instead, vulnerability may set the stage for the development of a panic disorder if the right psychological and social factors line up. A central factor of this nature in panic disorder is the emergence of *anxiety* over the possibility of additional attacks (Barlow, 2002). This anxiety, which is also focused on the specific physical sensations that might signal the next attack, is characterized by a strong sense of uncontrollability and cognitive distortions regarding the consequences or meaning of the attack and its associated symptoms. These cognition distortions are usually related to unrealistic inferences that the panic attack may be a sign of, or result in, physical harm (e.g., heart attack, stroke) or to fears of going crazy or losing control (e.g., a sign of schizophrenia or nervous breakdown; extreme embarrassment due to screaming, fleeing, and the like). The tendency to think that the worst is going to happen when panic attack symptoms are encountered was clearly evident in John. As discussed earlier, during the initial stages of his panic disorder, John feared that his panic attacks were a sign of serious physical illness (e.g., heart disease). In later stages of his disorder, his primary fears related to his belief that a panic attack would cause him to pass out or lose control of his arms and legs. Clinical experience has shown that the content of patients' thoughts regarding the feared consequences of their panic attacks may change over the course of their disorder. What would cause John to interpret these sensations in such a catastrophic manner? One reason specified by the integrative model as to why persons acquire the tendency to interpret normal physical sensations as threatening is through learning experiences early in life. For example, John may have

learned in childhood to regard physical sensations as potentially dangerous by watching his mother respond to symptoms in this manner (modeling).

As noted by the integrative model, false alarms quickly become associated in the person's mind with some external and internal cues that were present during the panic attack. In the instance of external cues, if a person has a panic attack in a certain situation, he or she may be apprehensive of or avoid this situation in the future because the situation becomes a cue for future panic attacks. For instance, John quickly began to fear and avoid driving after he experienced a few bad panic attacks behind the wheel of the car. This is consistent with a large amount of research evidence indicating that agoraphobia (situational avoidance) is an associated feature of unexpected panic attacks; it always arises *after* the attacks (only a small proportion of patients with panic disorder never develop any symptoms of agoraphobia; Barlow, 2002). In the instance of internal cues, people who experience unexpected panic attacks may quickly begin to associate the physical sensations that occur during their attacks with the panic attack itself. The specific term for this process is *interoceptive conditioning*, which means that if certain physical sensations (e.g., rapid heart rate) are repeatedly associated with fear (as would occur in a panic attack), then the sensation itself may acquire the ability to produce anxiety or fear (e.g., vigorous exercise produces an increase in heart rate, which, in turn, produces anxiety or panic due to interoceptive conditioning). In a later treatment session, John reported that since his panic disorder had begun, he had avoided consumption of caffeinated beverages and vigorous exercise out of fear that these activities might provoke a panic attack. Because these initial false alarms become associated with a variety of external and internal cues through a learning process (conditioning), they are referred to in the integrative model as "learned alarms" (i.e., learned, phobic alarm responses to physical sensations).

Treatment Goals and Planning

John's therapist was a licensed clinical psychologist who specialized in the treatment of anxiety disorders from a cognitive-behavioral perspective. A central goal in the cognitive-behavioral treatment of panic disorder is to assist patients in gaining a sense of control over their panic attacks and to teach them to be nonfearful over the possibility of having additional panic attacks. To a large degree, treatment is not focused on the panic attack itself. Rather, treatment addresses the patient's anxiety over experiencing additional panics, which is conceptualized in the integrative model to be the primary reason the panic attacks continue over time (i.e., anxiety about future panic attacks is a *maintaining factor*). Adhering to this model, John's therapist found it important to obtain information regarding John's feared consequences of panic (e.g., passing out, falling over) and the types of situations he avoided. This information would be important for two aspects of John's treatment: (a) cognitive therapy and (b) situational exposure. Using principles and techniques developed by Aaron Beck (D.A. Clark & Beck, 2009) and David Clark (Clark, 1986, 1994), the therapist would use cognitive therapy to help John identify and modify his thoughts and attitudes concerning the danger of the sensations and situations associated with his panic attacks.

Because John had a panic disorder that was accompanied with agoraphobia (as is true for most patients with panic disorder), his therapist planned to incorporate situational exposure in John's treatment to reduce his avoidance of situations such as driving, attending church, and going to movie theaters. Situational exposure would entail (a) preparing a list of the situations John feared and avoided; (b) arranging John's list in a hierarchical fashion, starting with the least difficult situations and ending with the most difficult situations (referred to as a fear and avoidance hierarchy); and (c) beginning with the least difficult situations (i.e., the situations that John feared the least), assigning John to enter these situations at predetermined times and durations. Situational exposure (sometimes called *in vivo* exposure) can be delivered in many formats, such as *graduated* (which John's therapist elected to use) and *massed* (also referred to as *flooding*, whereby the therapist arranges for the patient to immediately encounter her or his most feared and avoided situations, usually for long durations).

Although John's therapist was planning to employ situational exposure in a *self-assisted* format (whereby the patient performs most of the exposure practices alone), this technique can also be (a) *therapist-assisted*, meaning that the therapist accompanies patients in their exposure practices, or (b) *spouse-assisted*, meaning that the spouse (or a close friend) of the patient serves as a coach or aide for the exposure practices. One advantage of the therapist-assisted format is the assurance that the patient is being exposed to feared situations in the most beneficial manner possible. A patient assigned to perform exposure tasks on his or her own may not always complete the practices in a therapeutic way. For example, one principle of situational exposure is that for the exposure to be of therapeutic value, the patient must remain in the feared situation long enough to see a decrease in anxiety. Occasionally, patients who are assigned to independently carry out exposure practices flee the situation as soon as they experience a high level of anxiety. Besides preventing them from becoming less fearful of the situation, fleeing may make confronting the situation even more difficult in the future because patients had previously fled the situation with extreme anxiety.

In addition to increasing the likelihood that the patient's exposures are completed in a therapeutic fashion, exposure assisted by the spouse may have certain advantages. Using this format, the spouse learns all about the nature of panic disorder and the methods that are useful in its treatment. In addition to the potential for positive interpersonal change (e.g., less conflict resulting from increased understanding of the disorder), having the spouse learn to be a coach in the patient's treatment may increase the number of exposures completed between therapy sessions (because some patients put off exposure assignments because of their fear of encountering the situation). Moreover, this approach can eliminate things the spouse may normally do in response to the patient's symptoms that actually help to *maintain* the disorder. Examples of spouse behaviors that might contribute to the maintenance of the patient's panic disorder include (a) validating the patient's cognitions associated with the panic attacks (e.g., "You're right, honey. These doctors don't know what they're doing if they can't give you a straight answer about what's wrong with your heart") and (b) reinforcing the patient's tendency to escape or avoid situations (e.g., "Pull over before you crash and kill all of us!"). Both the spouse- and therapist-assisted formats have the potential disadvantage that the person will

develop a sense of dependency on the spouse or therapist in order to confront feared situations successfully; this problem, which occurs rarely, can usually be prevented by requiring the patient to perform a certain number of the exposure practices independently.

As is commonly done in cognitive-behavioral treatment, John's therapist planned to integrate situational exposure with the techniques of cognitive therapy. Relating to this issue, John's therapist inquired about the things John did to try to prevent or cope with a panic attack (i.e., his safety behaviors and signals, such as having constant access to medication and remaining close to walls or stationary objects while walking to prevent him from falling in the event of a panic attack). As with situational avoidance, the reliance on these safety behaviors, which the patient does to reduce anxiety, may actually *increase or at least maintain* anxiety and panic in the long run because these actions prevent him from invalidating his feared predictions regarding the consequences of panic.

For example, each time John experienced a bad panic attack while alone, he would fall to the ground, which he felt was a *consequence* of the panic attack. However, his therapist observed that this never occurred outside a situation in which falling to the ground would be acceptable to John; that is, even though he had experienced many severe panic attacks in public places, he was able to prevent himself from falling to the ground or from moving his arms and legs in an uncontrollable fashion (although if he could not escape the situation, he often found somewhere to sit down or something to lean against). Almost every panic attack that had been associated with falling had occurred at home! Therefore, John's therapist viewed these actions (falling to the ground, sitting down, leaning against something) as safety behaviors that were John's attempts to cope with the attack by preventing the feared consequence of passing out or collapsing physically. Although John used them to reduce his anxiety, these behaviors were causing his anxiety to persist over time because they prevented him from disproving his prediction that he would faint. That is, because John had never remained standing throughout a really bad panic attack, he had not learned that falling or fainting was a highly improbable consequence of his panic attacks. In fact, because he felt that his panic attacks were causing him to fall to the floor, his safety behaviors supported his belief that a panic attack could result in fainting or falling.

A central component of panic control treatment is interoceptive exposure (Barlow & Craske, 2007; Craske & Barlow, 2014). As noted earlier, after experiencing unexpected panic attacks, a person quickly begins to associate the physical sensations that occur during attacks with the panic attack itself (interoceptive conditioning). Consequently, the person begins to fear and avoid activities that produce these sensations (e.g., exercise, drinking caffeine or alcoholic beverages, saunas) because these sensations have developed into internal cues for a panic attack. This phenomenon can be addressed in treatment with interoceptive exposure. Much like situational exposure, this procedure entails repeated, systematic exposure to the physical sensations that the patient is known to fear (e.g., dizziness, rapid heart rate). As discussed later, John's therapist often found it very useful to combine the technique of interoceptive exposure with cognitive therapy, especially when the interoceptive exposures were successful at producing high levels of anxiety or panic.

COURSE OF TREATMENT AND TREATMENT OUTCOME

After the initial assessment session, John and his therapist scheduled the first treatment session. During this session, the therapist obtained more information about John's symptoms, such as the types of activities he avoided as the result of interoceptive conditioning (e.g., caffeine, vigorous exercise). The therapist spent a good portion of the first treatment session providing John with information on the nature of anxiety and panic, including a discussion of the integrative model of panic disorder and an overview and rationale of the treatment program, which would involve cognitive restructuring, situational exposure, and interoceptive exposure. At the end of the first session, John was given self-monitoring forms to record his daily levels of anxiety, depression, and fear of panic, as well as his panic attacks.

In the next session, John and the therapist developed two fear and avoidance hierarchies (FAHs): one for agoraphobic situations and a preliminary one for interoceptive activities (more activities were added when this component of the treatment program was reached). Each item on these FAHs was very specific with regard to the situation or activity, the duration, and other relevant information (e.g., alone versus accompanied, time of day). For example, one item on John's situational FAH was "Drive up the interstate to Exit 10, alone, after dark." As noted in Treatment Goals and Planning, the items on both FAHs were arranged in a hierarchical fashion (from least to most difficult) based on John's fear and avoidance ratings for each item. To measure his progress, the therapist asked John to provide new fear and avoidance ratings on both FAHs at the beginning of all of their subsequent sessions. At the end of this session, John selected one item toward the bottom of his situational FAH to practice two or three times before the next meeting.

In the third session, the therapist discussed the principles and techniques of situational exposure and informed John that, at the end of each session from here on, they would select an item from his FAH for him to perform a few times as between-session practice. Also starting in this session, the therapist began to focus on the cognitive therapy component of the treatment program. After discussing the nature of automatic thoughts, John and his therapist talked about the best way to identify cognitions that contributed to anxiety and panic. The therapist told John that patients often have difficulty identifying the feared predictions that are *most responsible* for their anxiety in a particular situation, partly because these thoughts can occur outside the person's awareness. Also, the therapist told John that patients may focus on cognitions that are too general because of either insufficient self-questioning or the tendency to avoid thinking about their feared predictions (because focusing on these thoughts may increase anxiety). For instance, a patient may identify and attempt to counter the prediction that "if I panic in a situation that is unsafe, the panic attack will persist for hours or maybe days" rather than go a step or two further by asking, "What do I fear will occur if I experience a panic attack that does not subside in this situation?" As a guideline in this process, John was told that he could be sure he had identified an important cognition if another person would experience a similar level of anxiety if he or she were to have this same thought about a given situation or sensation.

After rehearsing methods of identifying automatic thoughts, the therapist described two basic forms of anxiety-producing cognitions: *probability overestimation*,

or overestimating the likelihood of a negative outcome of panic (e.g., John's prediction that a panic attack might result in his losing control of the car and crashing), and *catastrophic thinking*, the perception that a negative outcome would be catastrophic or beyond the person's ability to cope (e.g., if he were to collapse due to a panic attack in church, John perceived the social consequences to be insufferable because of others' harsh judgments of him as weak or sick).

In this and subsequent sessions, the therapist guided John on the most effective manner of challenging his feared predictions. Like many other patients, John tended to be too global in countering his anxiety cognitions; for example, he would counter his fear of passing out by simply telling himself, "I have never passed out before." In challenging feared predictions, John was told that it was important to gather as much factual evidence as possible that would disprove the thought; for example, "A panic attack is physically the same thing as a fight-or-flight response. I wouldn't be concerned about fainting if I had this response after almost getting in a car crash—why should I be concerned about fainting due to a false alarm?" In addition, John was instructed to cite all evidence he could think of that *supported* the accuracy of his feared prediction. Thus, as part of cognitive therapy, John's therapist found it important not only to assist him in countering the cognition but also to assist him in challenging the evidence that John believed supported his feared prediction. This procedure afforded a very thorough processing of John's feared predictions and also reduced his tendency to "counter his counterarguments"—for example, "Well, it's true that I never passed out behind the wheel of my car. However, I might have fainted if I hadn't pulled over and gotten some fresh air in time!" As part of the cognitive therapy component of the program, John used self-monitoring forms to record his anxiety-producing cognitions and his attempts at challenging these beliefs as they occurred between sessions. In addition to a routine check of his other self-monitoring forms, the review of these materials became an indispensable part of each session (usually right at the beginning of each meeting). The review guided the discussion of what had occurred in the preceding week and the ways in which John could "fine-tune" his skills to become increasingly effective.

After introducing prediction testing as part of cognitive therapy (discussed later), John's therapist initiated the interoceptive exposure component of the program. After explaining the rationale of this component, the therapist asked John to do a number of sensation-producing activities during the session as a way of identifying potential exercises. These activities included things like breathing through a small straw for 2 minutes, running in place for a minute, and hyperventilating for a minute. As they went through 10 or 12 activities, John and his therapist identified several that would be useful as future interoceptive exposures (based on John's report of moderate to high anxiety and their similarity to natural panic).

Particularly similar for John was the exercise of spinning in a chair for 1 minute. Indeed, roughly 20 seconds into the exercise, he stopped abruptly in a full-blown panic attack. Though noting that John was too shaken to speak, the therapist could see that he was about to fall from his chair to the floor. The therapist viewed this as an important opportunity in treatment, so in a firm voice, he instructed John to stand up quickly. John seemed to respond without thinking but the next thing he knew, he was standing in front of his therapist, with blinking eyes and a face beaded in sweat.

Because the therapist noticed that John had spread his feet far apart (to stabilize himself), he instructed John to place his feet together. Much to John's amazement, he informed his therapist that the panic attack had subsided.

Ultimately, this turned out to be one of the most important moments in John's treatment for the following reasons: (a) it provided him with strong disconfirming evidence that a panic attack would cause him to fall to the floor; (b) it suggested to him that when he had fallen to the floor during panic, he had basically *chosen* to fall as a way of coping with the panic, that is, he had "beaten the panic to the punch" by falling to the floor in a more controlled way before the panic caused him to fall in a way that could be harmful, such as hitting his head on the floor; and (c) it demonstrated how the use of safety behaviors, which John used to cope with or reduce anxiety, may actually increase or prolong his anxiety. In the case of falling to the floor, this behavior prevented him from learning that a panic attack would never result in his passing out or falling over; in fact, this behavior usually increased his anxiety because he misinterpreted his voluntary drop to the floor as a consequence of some of his panic attacks.

Because several of the interoceptive activities produced high levels of anxiety, the therapist incorporated *prediction testing* into John's in- and between-session exposure exercises. Prediction testing is a technique of cognitive therapy in which the therapist and patient design a behavioral experiment to test the validity of the patient's predictions concerning the consequences of panic or the elimination of a safety behavior or the patient's predictions about what might occur during exposure to a difficult situation. For example, in a later session, John and the therapist planned to do several exposure trials of chair spinning in order to decrease John's anxiety over the sensation of dizziness, which was a frequent symptom of John's panic attacks and the sensation he feared the most because he thought it could lead to fainting or falling.

Prior to the first trial, the therapist obtained John's predictions regarding the consequences of spinning as well as his rating of the accuracy of his prediction. John predicted a 50% chance that the first trial of chair spinning would cause him to fall to the floor and cause his limbs to jerk uncontrollably. The therapist recorded these predictions and instructed John to begin the first trial. Once again, John stopped the trial prematurely because the spinning elicited a panic attack, of stronger intensity than the first one. As before, the therapist noticed that John was beginning to head for the floor, so he instructed John to do what he had been told to do several weeks back when they had first begun interoceptive exposure (chair spinning was at the top of John's hierarchy of interoceptive activities, so it had taken them several sessions to arrive at this exercise). Again, John complied with his therapist by standing with his feet close together. Like the first time, his panic attack subsided quickly. The therapist compared John's predictions about the first trial to the actual consequences of the trial. After providing his predictions of the outcome of the second trial (his perceived chance of falling had dropped to 15%), John spun himself in the chair again.

Because the next several trials also produced high levels of anxiety, the therapist continued to have John test his concern about falling by performing actions that would seriously challenge this prediction. Set up as a prediction test, the therapist asked John to do things after each chair-spinning trial that John predicted

would *increase* the likelihood of falling (e.g., standing with feet together and arms spread apart, standing on one leg, standing while bending forward). Each time, John's feared prediction was disconfirmed by the outcome of the trial. By the end of this session, his anxiety had dropped from an 8 on the first trial (using a 0 to 8 scale) to a 2. As with other interoceptive exercises, John was assigned chair spinning as between-session practice, to be performed in a graduated manner (with regard to duration, alone versus having wife in house). In the later stages of interoceptive exposure, John completed practices involving more "naturalistic" activities (such as drinking caffeinated beverages). These types of exercises were also helpful in his treatment because they exposed him to sensations that were less predictable in their intensity and duration, and hence these sensations were more similar to naturally occurring anxiety.

Although the therapist regarded cognitive countering as an important part of John's treatment, he relied heavily on prediction testing as a method of challenging his anxiety-producing cognitions. This was done not only in tandem with interoceptive exposure but as a way to challenge thoughts associated with anxiety due to the anticipation of scheduled situational exposure practices and events that came up naturally (e.g., attending his wife's office party). This technique was also a helpful adjunct in the later stages of situational exposure when John was asked to enter these difficult situations without access to his safety behaviors (e.g., take elevator 20 floors while standing in the center of the elevator; drive up 10 exits of the interstate, alone, while leaving the Xanax bottle at home). In addition, the therapist incorporated prediction testing in John's practices where situational and interoceptive exposure were combined (e.g., drink two cans of Mountain Dew before interstate driving).

When John was engaging in these combined exposures regularly without difficulty and with negligible anticipatory anxiety, his therapist was confident that John could independently apply the techniques of treatment to eliminate or reduce the symptoms that remained (e.g., John continued to fear air travel moderately, as he did not have the opportunity to practice this item). After the 15th session, John met with his therapist on a monthly basis for five more sessions. By the final session, the therapist felt that John's panic disorder was "in partial remission"; at this point, John had some lingering apprehension about one or two activities, and, on an infrequent basis, he experienced a limited symptom attack that was usually associated with life stress. Of note, during the course of the monthly sessions, John had decreased his Xanax use to 1 mg per day, with the assistance of his prescribing physician. Six months after the final session, John telephoned his therapist to inform him that he was both panic-free and Xanax-free.

DISCUSSION

Estimates from the National Comorbidity Survey Replication indicate that 4.7% of the population develop panic disorder or agoraphobia during their lives; the condition most often emerges in early adulthood, with a median age of onset of 24 (Kessler, Berglund, et al., 2005). Like most individuals who have panic disorder, John developed the complication of agoraphobia. In fact, John's agoraphobia was fairly substantial (i.e., he avoided a variety of situations), which was somewhat at

odds with the average case because most patients who suffer from extensive agoraphobia are women (Barlow, 2002). Whereas women outnumber men in the prevalence of agoraphobia, research has found that men are much more likely than women to develop substance abuse or dependence (usually alcohol; Kushner, Abrams, & Borchardt, 2000). Although John drank a lot prior to the onset of his panic disorder, his drinking increased substantially when he began to have panic attacks regularly. This "self-medicating" only complicated his condition. As with most patients who successfully overcome their alcohol use disorder, John's anxiety disorder was just as or even more severe than it was before he began drinking excessively (Chambless, Cherney, Caputo, & Rheinstein, 1987).

Despite his history of an alcohol use disorder, John was fortunate not to have any additional disorders at the time of his treatment. His lack of comorbidity (presence of more than one diagnosis in the same person) is of note because most research studies have found that anxiety disorders rarely present in isolation. For example, a study (Brown, Campbell, Lehman, Grisham, & Mancill, 2001) examining the rates and patterns of comorbidity among the anxiety and mood disorders found that of patients with a principal *DSM-IV* diagnosis of panic disorder with agoraphobia, 62% received at least one additional diagnosis at the time of the assessment. In this study, the most common additional diagnoses in patients with panic disorder with agoraphobia were mood disorders (major depression or dysthymia) and generalized anxiety disorder. In addition, several studies have found that 27% to 65% of patients with panic disorder and agoraphobia have a co-existing personality disorder. However, these figures are likely to be overestimates because most of these studies evaluated personality disorders with questionnaires rather than structured diagnostic interviews (Brown & Barlow, 1992a).

John had suffered from panic disorder for more than 15 years before he obtained specialized treatment for the condition. Unfortunately, this is also consistent with most patients' experience. Although panic disorder is one of the most prevalent psychological disorders, most patients have the problem for many years before securing appropriate treatment. This is partly because panic disorder was not recognized by the *DSM* system as a specific anxiety disorder until 1980 (before then, panic attacks were viewed as a form of free-floating, generalized anxiety). Consequently, effective treatments for panic disorder have not been in existence for very long. Despite the current availability of both psychological and pharmacological treatments, many people who suffer from panic disorder still have difficulty finding appropriate treatment (or appropriate assessment) (Kessler, Chiu, Jin, Shear, & Walters, 2006). The major (yet very recent) strides in understanding the nature and treatment of panic disorder have yet to be disseminated adequately to all health care professionals. Recognizing this problem, the government's National Institute of Mental Health sponsored a nationwide program to increase public and professional awareness of panic disorder (e.g., methods to enhance early detection) and the services available for the assessment and treatment of the condition.

Although psychological treatments that target panic attacks directly are relatively new, many research studies now attest to their effectiveness (Mitte, 2005b). These studies indicate that psychological treatments, such as the one described in this case, may even be more effective than the most common drug treatments, such as use of alprazolam (Xanax). The potential advantage of psychological

treatments over drug treatments is most evident in long-term outcome (i.e., the level of patient functioning several months after treatment has ended) because drug treatments are often associated with relapse when the medication is discontinued (cf. Brown & Barlow, 1992b). In contrast, patients treated with cognitive-behavioral approaches may enjoy more durable treatment gains because they have *learned* a variety of skills with which to respond to physical sensations or difficult situations in a nonanxious manner.

For example, in a major outcome study comparing the effectiveness of cognitive therapy, imipramine, and applied relaxation, Clark et al. (1994) found that a significantly greater percentage of patients who received cognitive therapy were classified as panic-free (85%) at the 15-month follow-up than patients in the other two treatment conditions (60% and 47% for imipramine and applied relaxation, respectively). Similarly, the percentage of patients who met "high endstate functioning criteria" at 15-month follow-up was significantly higher in the cognitive therapy condition (70%) than for imipramine (45%) and applied relaxation (32%) (*high endstate* was defined as no panic attacks in the month before the assessment plus a clinical severity rating of 2 or less on a 0 to 8 scale of distress and impairment). A subsequent large-scale outcome study conducted by Barlow, Gorman, Shear, and Woods (2000) found that cognitive-behavioral treatment for panic disorder was more effective in the long term than medication treatment (imipramine) or combined treatment (cognitive-behavioral treatment plus imipramine).

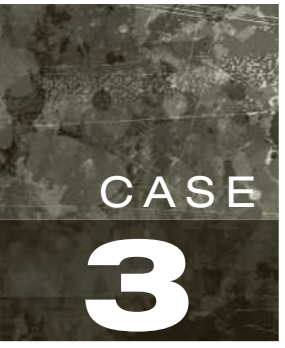
These findings are quite similar to those obtained by Craske, Brown, and Barlow (1991), who examined the long-term efficacy of a cognitive-behavioral treatment similar to that used by Clark et al. (1994). Specifically, 86.7% of patients completing treatment were classified as panic-free at the 24-month follow-up; 53.3% met criteria for high endstate functioning. In the study by Craske et al. (1991), the discrepancy in the rates of panic-free status and high endstate status seemed to be due in part to several patients who were panic-free but still had other significant symptoms such as agoraphobic avoidance. It is interesting that for research purposes, both the Clark et al. (1994) and Craske et al. (1991) studies used versions of cognitive-behavioral therapy that did not contain situational exposure. The findings from Craske et al. (1991) support the long-held clinical belief that when agoraphobia accompanies panic disorder, situational exposure should almost always be part of the treatment program. These results suggest that the elimination of panic attacks via cognitive therapy and interoceptive exposure does not ensure the elimination of agoraphobia.

THINKING CRITICALLY

1. Many people with panic disorder state that they had never heard of "panic attacks" at the time they experienced their first attack. Some researchers believe that the general public's unfamiliarity with the nature and causes of panic attacks makes people more prone to develop panic attack after an initial "out of the blue" attack; this lack of knowledge makes people more apt to misinterpret the first attack and become highly fearful of having additional attacks. Do you think this is true, and if so, why? If you did not know what a panic attack was and you experienced one, how do you think you would

interpret and react to the unexpected, intense rush of fear and physical symptoms? Do you think you would be apprehensive of going back to the place where the panic attack occurred? Why? Do you believe that panic disorder could often be prevented if people were provided factual information about panic attacks before they ever experienced them? Why or why not?

2. As in the case of John, men are more likely than women to cope with their panic attacks by using alcohol or other drugs; women are more likely than men to develop extensive agoraphobic avoidance in response to panic attacks. Why do you think this is the case?
3. As noted in this case, panic disorder is quite prevalent in the general population. If you had a friend or family member who had begun to experience occasional panic attacks, how would you respond to him or her? Consider how the social and familial environment of a person with panic disorder and agoraphobia might foster or maintain that person's apprehension or avoidance of daily activities (e.g., going to the store, driving, running errands).
4. Although not really an issue in John's treatment, some research has shown that people who are taking medications (e.g., Xanax, an antidepressant) do not respond as well to cognitive-behavioral treatment as do those who are not taking medications during therapy. What factors might contribute to this finding?



Adolescent Social Anxiety Disorder

Bonnie Emerson's parents heard about a treatment program for adolescents with social anxiety from the parents of a boy who had recently completed the program successfully. The information about the program was very timely because Bonnie had lately been asking her parents for help with her fear and anxiety. Accordingly, after hearing about the program, Mrs. Emerson contacted the clinic and arranged an initial evaluation appointment for the family.

At the time of her first appointment, Bonnie was a 15-year-old Caucasian girl in the 9th grade. As part of the evaluation, Bonnie and her parents were interviewed separately by a clinical psychologist who specialized in the treatment of childhood anxiety disorders. At the outset of the interview, Bonnie stated that her problem was that she would get nervous about everything, particularly things at school and doing anything new. When asked to give an example, Bonnie told the interviewer that her father wanted her to go to camp this summer, but that she did not want to because of her "nerves." During the course of the interview, it became clear that Bonnie's anxiety stemmed from a persistent fear of social situations where she might be the focus of other people's attention. For example, Bonnie reported that she felt very self-conscious in the mall and constantly worried about what others might think of her.

The interviewer asked Bonnie about a variety of situations that are frequently feared or avoided by teenagers with social anxiety. For almost every situation, Bonnie reported at least some level of fear and avoidance. Bonnie stated that she was very fearful of such situations as eating in public, using public restrooms, being in crowded places, and meeting new people. She claimed that she would almost always try to avoid these situations. At school, Bonnie reported fear and avoidance of such activities as speaking up in class, writing on the blackboard, and talking to her teachers or school principal. Although she was very good at playing the flute, Bonnie said that she had dropped out of the school band because of her anxiety over participating in band performances. In addition to anxiety about

talking to teachers, she reported that she feared talking to unfamiliar adults (such as store clerks). In fact, Bonnie stated that she would never answer the telephone in her home. She claimed that she was also very hesitant to use the phone when she would have to interact with strangers to do such things as ask for information or order pizza.

In most of these situations, Bonnie said that her fear and avoidance related to her worry about possibly saying the wrong thing or not knowing what to say or do, which would lead others to think badly of her. Quite often, her fear of these situations would be so intense that she would experience a full-blown panic attack. When Bonnie had a panic attack, her intense fear would usually be accompanied by these symptoms: accelerated heart rate, chest discomfort, shortness of breath, hot flashes, sweating, trembling, dizziness, and difficulty swallowing. Bonnie also reported that she would often get headaches and stomachaches when she was anticipating a situation that she found difficult. Although Bonnie often had panic attacks, the interviewer determined that her attacks always occurred during, or in anticipation of, difficult social situations.

To gain a thorough picture of the nature of Bonnie's difficulties, the psychologist conducted a separate interview with Bonnie's parents. While confirming what Bonnie had said, Mr. and Mrs. Emerson conveyed that their child's social anxiety was even more severe than what she had indicated. They stated that even though it was May, Bonnie was already worried and had stomachaches about beginning the 10th grade in the fall. Her parents related that Bonnie was "terrified" in public. In fast-food restaurants she would not order or pay the cashier but, instead, would have her younger sister do everything for her. Although Bonnie had stated that she was not hesitant to go to parties and her parents noted that she had gone to parties during junior high school, they said Bonnie had not gone to any high school parties because of anxiety about dressing up and how she might appear to others. Although Bonnie was good-looking, her parents noted that she was usually quite concerned about her physical appearance. Moreover, they said that when she went to parties, Bonnie would insist on going with a "safe" person—one of her best friends. Her parents reported that Bonnie would never initiate any activities, join clubs, invite friends over, or even call friends on the telephone. They said that the "last straw" had occurred 2 weeks before when they had a family gathering at their home with a number of relatives and friends attending. Because of the large number of people in the house, Bonnie had experienced a panic attack and locked herself in her bedroom for the entire day until the last guests had left.

Clinical History

Bonnie was the first of two children, with a sister 2 years younger. Bonnie grew up in a happy, middle-class home. Bonnie's father was a building contractor; her mother worked as a bank teller. Her parents were happily married and had always been quite supportive of her. In response to Bonnie's social anxiety, they had pushed her to socialize more, which seemed to have the opposite effect in that Bonnie would become even more avoidant. Bonnie's parents reported no history of anxiety problems among the immediate relatives of the family. Except for typical

sibling conflicts, Bonnie got along quite well with her sister. Despite her problems with social anxiety, Bonnie had two or three close friends and a number of "acquaintance" friends. Indeed, her parents told the interviewer that Bonnie could always make friends; she just would never make the first move. However, Bonnie preferred to spend time with her close friends with whom she felt safe because they were also extremely shy and had the same evaluation concerns that Bonnie did. Each day at school, the group ate lunch together and stayed together apart from the other students between classes.

Bonnie's grades at school were usually Bs and a few Cs. Her parents said that Bonnie achieved these grades with little effort. Interestingly, while Bonnie was often quite fearful of school, she had not missed many days over the past several school years (in fact, not a single day of the current school year). Her parents noted that Bonnie always had stomachaches before school, but she had never asked to stay home.

Although she had always been somewhat shy, Bonnie's social anxiety increased dramatically a year before her first contact with the clinic. This increase seemed to be related to two factors: (a) confrontation with all of the changes associated with entering high school (e.g., new environment, new classmates, dances, greater demands to speak up in class) and (b) a breakup with her boyfriend. After breaking up with her boyfriend the previous summer, Bonnie did not feel like doing anything or going anywhere. Particularly for 2 months during the past year (after learning that her ex-boyfriend was dating another girl), Bonnie felt very depressed. During this time, she did not sleep well, felt very fatigued, had problems concentrating, and felt worthless. Bonnie recalled that, during this time, she frequently thought and dreamed about her ex-boyfriend. A month or so before her initial evaluation, Bonnie's depression began to lift. Bonnie told the interviewer that she was beginning to return to her normal mood, in part because she had started dating another boy. However, her new boyfriend was just as shy as she was. Her parents expressed some concern that spending a lot of time with a shy boy would prevent Bonnie from coming out of her shell.

DSM-5 Diagnosis

On the basis of the information collected from the interviews with her and her parents, Bonnie was assigned the following *DSM-5* (*Diagnostic and Statistical Manual of Mental Disorders*, 5th ed.) diagnosis:

300.23 Social anxiety disorder, with panic attacks

296.25 Major depressive disorder, single episode, in partial remission

Bonnie's presentation before treatment met the *DSM-5* definition of social anxiety disorder (SAD; American Psychiatric Association, 2013). In *DSM-5*, the key criteria for SAD are as follows: (a) marked and persistent (usually lasting more than 6 months) fear or anxiety about one or more social situations in which the person is exposed to possible scrutiny by others (e.g., social interactions, being observed, performing in front of others); (b) the individual fears acting in a way (or showing anxiety symptoms) that will be negatively evaluated (e.g., will be

humiliating or embarrassing; will lead to rejection; or will offend others); (c) the social situations almost always provoke fear or anxiety; and (d) the social situations are avoided or endured with intense fear or anxiety.

In *DSM-5*, SAD (or any mental disorder, for that matter) can be assigned with the "with panic attacks" specifier when the criteria for panic attacks have been met. The addition of this descriptive specifier in *DSM-5* is based on the notion that panic attacks may be an important predictor of the severity, course, and treatment response of psychological disorders in general. As discussed in some detail in the next section, some people develop SAD after experiencing unexpected panic attacks in social situations (which would seem to be more characteristic of panic disorder). For example, it might be appropriate to assign a diagnosis of SAD for a teacher whose difficulty began with unexpected panic attacks in front of the classroom (prior to the panic attacks, the teacher had been quite comfortable giving lectures). The diagnostician would consider this to be SAD rather than panic disorder as long as the person's panic attacks occurred *only* in the social situation; if the person was having panic attacks in other situations (e.g., while at home alone), panic disorder would likely be the more appropriate *DSM-5* diagnosis. Often, the focus of the patient's concern can be helpful in distinguishing SAD from panic disorder. For example, the panic attacks of many people with SAD are *triggered* by an extreme concern about being negatively evaluated by others. With regard to Bonnie's case, her panic attacks are best conceptualized as features of SAD because they (a) occur only in social situations and (b) are triggered by her intense fear of negative social evaluation. However, if Bonnie had experienced panic attacks that occurred outside social situations or for no apparent reason and if anxiety stemmed mainly from her concern about having additional panic attacks (as opposed to her concern about how she would appear to others), then a diagnosis of panic disorder would likely be appropriate. Nonetheless, it is important to acknowledge the presence of panic attacks in the *DSM-5* diagnosis of SAD because these features may be an important focus of treatment (e.g., inclusion of interoceptive exposure to address the patient's fear of panic attack symptoms that arise in social situations; see Case 2 for more details on interoceptive exposure).

The *DSM-5* diagnosis of SAD can also be assigned with "performance only" specifier when the patient's fear is restricted to speaking or performing in public. In Bonnie's case, this specifier did not apply because she was fearful of a wide variety of social situations. More information on the nature and treatment of SAD is presented in the remaining sections of this chapter. For information on Bonnie's additional diagnosis—major depressive disorder—see Case 9.

CASE FORMULATION USING THE INTEGRATIVE MODEL

Many facets of the integrative model of SAD are similar to the model of panic disorder discussed earlier in this book. As with panic disorder and other emotional disorders, the conceptualization of SAD is based on a diathesis-stress model (Barlow & Durand, 2015). One important dimension of this diathesis (or vulnerability) is biological. This biological vulnerability relates to an inherited tendency to develop anxiety (or to experience a false alarm under stress; see Case 2) or a tendency to be very socially inhibited. The research of Kagan and colleagues (e.g., Kagan, Reznick,

& Snidman, 1988; Kagan & Snidman, 1991, 1999) has demonstrated that some infants are born with a temperamental profile or trait of inhibition or shyness. While these dimensions are viewed as operating on a continuum in the general population (i.e., people vary in the amount of characteristics possessed), infants with high levels of this trait become more agitated and cry more frequently than infants low on this trait when presented with toys or other normal stimuli. Researchers have also found that SAD runs in families. These studies indicate that relatives of people with SAD have a significantly higher risk of developing the disorder than those whose relatives are without SAD (e.g., 16% versus 5% in Fyer, Mannuzza, Chapman, Liebowitz, & Klein, 1993). Although Bonnie did not have a history of anxiety disorders in her family, some evidence of biological vulnerability was present from her parents' report that she had been a shy child since birth (i.e., before she ever had a chance to learn to be shy by watching other individuals behave in this manner).

However, as with other emotional disorders, a biological vulnerability is not sufficient to produce a SAD based on the integrative model. Here is where psychological factors (or the "stress" component of the diathesis-stress model) are operative. As with panic disorder, when under stress, a biologically vulnerable person might have an unexpected panic attack (a false alarm). In the case of SAD, this alarm occurs in a social situation, and the person develops anxiety about having additional false alarms (panic attacks) in the same or similar social situations. Subsequently, the person avoids these situations because of the fear of having more false alarms. (As noted in the previous section of this chapter, although recurrent panic attacks may suggest the presence of panic disorder, SAD is indeed the correct diagnosis if the person's panic attacks are confined to certain social situations.) In addition to false alarms, some SADs begin with the person experiencing a "true alarm" in a social situation. For example, many adults and adolescents with SAD recall that their problem began after being traumatized in a social situation (e.g., ridiculed or extremely embarrassed) during childhood or early adolescence (McCabe, Antony, Summerfeldt, Liss, & Swinson, 2003). For example, one adult male with SAD recalled that his problem began after being derided and harshly criticized in front of his peers by a high school instructor during a class presentation. This taunting produced high levels of anxiety or even panic that he began to associate with the same and similar social situations.

In addition to the contribution of genetics in the development of the disorder (Fyer et al., 1993; Hettema, Neale, & Kendler, 2001), psychological aspects of the person's family may be associated with the vulnerability for SAD. For example, parents of people with SAD are significantly more socially fearful and concerned with others' evaluative opinions than the parents of persons who have panic disorder (Bruch, Heimberg, Berger, & Collins, 1989; Lieb et al., 2000; Rapee & Melville, 1997). It seems that such parents may pass these social concerns on to their children (e.g., children may learn to be apprehensive of social situations by observing their parents respond in a fearful manner).

Through one or more of these pathways, people with SAD develop a variety of distorted thoughts (cognitions) concerning what might happen in social situations ("I hope I don't make a fool of myself") and regarding their self-evaluation of how they performed in the situation ("They could see I didn't know what I was

talking about"). The cognitive aspect of SAD frequently involves fear of negative evaluation by others, selective attention to negative aspects of how one responded in a social situation (e.g., in recollecting a social interaction, remembering only the one instance of stuttering and not how well the rest of the conversation went), and very high standards for how one should behave and appear in these contexts (Clark & Wells, 1995; Hofmann & Barlow, 2002). This last characteristic was evident in Bonnie in that she was extremely concerned about her physical appearance (even though she was an attractive girl, she frequently berated her looks). As with most people with SAD, Bonnie was highly fearful of being evaluated negatively by others. In the majority of situations in which she was fearful, Bonnie worried that others would think badly of her because she would not know what to say or she would say or do the wrong thing. Consequently, she avoided these situations or had someone else (such as her younger sister) do things for her. This avoidance is viewed as a key maintaining feature of SAD. Like other anxiety disorders such as agoraphobia, the avoidance prevents the person from learning to be nonfearful of the difficult situations (e.g., confronting the situation helps the person disconfirm negative predictions of what might happen).

Treatment Goals and Planning

After the initial interview, the psychologist recommended that Bonnie participate in a treatment program at the clinic. This program involved a cognitive-behavioral treatment package that was developed specifically for SAD (Heimberg, Liebowitz, Hope, & Schneier, 1995; Heimberg & Magee, 2014; Hope, Heimberg, & Turk, 2006). The therapy was delivered in a 16-session group format (usually four to six adolescents). The program was intentionally designed to be delivered in a small-group format for several reasons, one being that this format would help with a key aspect of treatment: exposure to social situations. As in the treatment of other anxiety disorders, exposure involves arranging for the person to confront feared or avoided situations (to reduce avoidance and assist the person in learning to be nonfearful of the situation). Because a person with SAD is often apprehensive of certain types of social interaction, the members of the treatment group could be used as a part of the initial exposure exercises (e.g., have the patient deliver a speech or play a musical instrument in front of the group). In addition to therapeutic exposure, a key element of Bonnie's treatment would be cognitive therapy. Cognitive therapy would identify the types of things Bonnie said or thought to herself that contributed to her fear and avoidance of social situations. Usually, these thoughts concerned predictions of all of the terrible things that would happen. Next, she would be taught methods of challenging these fearful predictions in a very thorough way. Bonnie's therapists would also utilize the situational exposure exercises to assist her in challenging her anxious predictions (e.g., comparing what actually happened in a social interaction to what Bonnie had predicted). Finally, Bonnie's treatment would include social skills training. Partly because they are so avoidant of many situations, some persons with SAD never learn to behave in a socially effective manner. Social skills training is an educational approach of identifying skills deficits (e.g., inappropriate ways of interacting with people), introducing appropriate behaviors (often modeled by