INTRODUCTION TO ADDICTIVE BEHAVIORS
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Preface

This book was written for practicing health and human services professionals with no formal training in substance abuse prevention and treatment, and for undergraduate and graduate courses on addictive behavior. The book has two primary goals. The first is to challenge and strengthen the reader’s understanding of addiction by exploring how others in the field have come to know it. We hope that this will enable the reader to create a clear and logically consistent perspective on addiction. The second goal is to show the reader how theory and research are important to both the prevention and the treatment of substance abuse. This information should provide the reader with an array of strategies for addressing substance abuse problems and help make him or her an effective practitioner.

There are a number of good books currently available on substance abuse and dependence. For the most part, however, these books either are written at an advanced level for the sophisticated practitioner or researcher or focus on a limited set of theoretical orientations. The present text is unique in that it attempts to present a comprehensive and thoughtful review of theory and research with the front-line practitioner and student in mind. Exposure to complex and divergent theories of addictive behavior has often been neglected in the preparation and training of health and human services professionals, including substance abuse counselors, public health practitioners, prevention specialists, social workers, psychologists, and nurses. Some of these practitioners are familiar with one or more of the disease models, but even here they often have not had the opportunity to examine propositions critically. This book assumes virtually no preexisting knowledge in the biological and behavioral sciences, medicine, or public health. In each chapter, a careful attempt is made to explain the conceptual underpinnings of the theories and approaches described herein, as well as the research supporting these frameworks.
The fourth edition of *Introduction to Addictive Behaviors* has been revised to appeal to a broad audience of practitioners and students. The primary focus of the first two editions was to provide a multidisciplinary foundation for addiction treatment. The third edition was revised to include a theoretical and research foundation for substance abuse prevention as well. The fourth edition continues to be a foundational volume for both the prevention and treatment of substance abuse and includes three new chapters: “The Controversial Science of Behavioral Addiction,” “Promoting Motivation and Autonomy for Personal Change Process,” and “Linking Theory, Evidence, and Practice.” Each presents cutting-edge knowledge in three very different but important areas of study in addictive behavior. Other chapters from the third edition have been updated for the fourth edition, including “The Family System,” which has been extensively rewritten.

Special thanks are in order to those who helped us complete the fourth edition. We greatly appreciate the efforts of Gabrianna Saks in assisting us with updating a number of areas of research and in identifying new and emerging areas for inclusion in the fourth edition. We also are grateful to The Guilford Press, and especially to Jim Nageotte and Jane Keislar, for their encouragement and assistance in preparing the fourth edition. A number of anonymous reviewers provided feedback that also was extremely helpful in steering the direction of the book.

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CHAPTER 1

Conceptualization of Addictive Behavior and the Need for Informed Practice

Why a book on theories of addictive behavior? For at least the last 200 years in U.S. history, substance misuse (primarily alcohol) has been viewed as an immoral or sinful activity and addiction as a somewhat mysterious, or at least nonspecific, condition frequently referred to as a disease. These views remain prominent today in the legal and correctional system, as well as in the treatment community. For many years it also was believed that the sole or preferred qualification to work as a substance abuse practitioner was to be a recovering addict. Knowledge of addiction thus was based mostly on one’s personal recovery experiences, and invariably addiction was understood as a primary and involuntary disease and nothing else. Many still endorse this belief. Indeed, disease models remain the foundation of addiction treatment in the United States today.

Disease models clearly have facilitated the adoption of more humane public policies, such as medical insurance provisions, and have helped a large number of persons who have sought treatment. However, as judged by the very large number who avoid or refuse treatment, drop out of treatment, and/or relapse, it reasonably can be asserted that these particular models are not a “good fit” for many (perhaps most) individuals. It is imperative that practitioners consider a wider range of prevention and treatment models, especially for populations and individual clients who cannot work within a disease model. Doing so would likely expand the reach of prevention and treatment services, identifying a greater number of individuals who could benefit from such services but so far have purposefully stayed away for reasons such as monetary cost and/or insistence on abstinence.
There is not one way to explain addiction. Results of scientific investigations; social, cultural, and political events throughout U.S. history; and firsthand accounts of people who have experienced and been affected by addiction support this contention. Addiction is an extremely complex condition arising from multiple pathways and manifesting in innumerable ways. It thus defies a simple and absolute definition. It may be convenient to reduce the problem to a “brain disease,” but this term is insufficient and possibly misleading. Addiction also is not just a bad habit that can be stopped through willpower. Further, it is not only (or even) a character or spiritual defect, although many fiercely defend these descriptors. Addiction is more than any one of these characterizations. In many ways it remains a puzzle, a mystery, a conundrum. Those who insist on a singular, absolute, and all-encompassing explanation of addiction are either ill-informed or championing a specific (social, political) cause, or both. For students of addiction etiology, understanding its complexity requires reliance on multilevel analyses and the capacity to examine the problem through different lenses.

Credentialing requirements for drug and alcohol counselors, prevention specialists, and other professional practitioners now include education in a range of theories of addiction, including science-based theories that describe addiction as a learned and adaptive behavior. Unfortunately, training in theories of addictive behavior does not translate automatically—if at all—to theoretically informed practice. All too often practitioners rigidly cling to a favorite theory, in many cases without fully understanding all its concepts and implications. At the same time, other theories may be callously disregarded. As noted by Webb, Sniehotta, and Michie (2010), many practitioners use interventions that are not informed by, or linked to, a specific theory—or, when they are, the connection is not clear. There is a similar disconnect with respect to research and practice, which we discuss later in this chapter and throughout the remaining chapters. As professionals, we should possess the flexibility to work with different communities and clients, and tailor our approaches to their needs. This is what is meant by individualized or customized care.

The threefold purpose of this book is to expose students and practitioners to a range of theories of addictive behavior, to review longstanding and current scientific research that has tested these theories, and to help make theories of addictive behaviors and their research relevant for contemporary prevention and treatment services. Although idealistic, we hope that in a small way the book helps to bridge the gap that exists between theory and research on one side and practice on the other. We also hope that students and inservice professionals will find the review of theory and research to be provocative enough to cause them to reconsider their conceptions of addiction.
WHAT EXACTLY IS A THEORY?

The popular understanding of the term *theory* is that it is a belief or set of beliefs distinguished from and in opposition to practice, science, and certainty or fact. Many of us have heard someone retort, “Oh, that’s just a theory.” This statement suggests that something is invented and thus cannot be trusted. It also implies that theory is mere speculation, lacking substantiation or verification. Although there is a tendency to equate theory with things that are impractical or devoid of common sense, all of us rely on theory to function in our relationships with family members, friends, professional colleagues, and others. In most cases, these theories are crude and not explicit; nonetheless, they exist, if only in our minds. Thus, to dismiss theory as useless is to fail to recognize its universal application, both in science and in everyday life.

In the behavioral sciences, the term *model* is often used in place of *theory*. According to West (2006), a model describes or represents something, such as an object, a set of events, or a narrow aspect of some behavior. Unlike a theory, however, a model is not well developed and does not necessarily explain anything. In this book, both terms are used and attempts to distinguish between them are not made.

The word *theory* is derived from Greek for viewing or serving as a spectator. Theory thus can be thought of as an observation, a speculation. This means that theories should offer new perspectives for understanding a certain body of knowledge, predict new possibilities, and, at the very least, provide a means for experimentation (Cottone, 1992). Although theory is distinguished from *truth* or *fact*, Cottone argues that theory implies a scientific ideal or a rational construction representing some form of reality. Theories are not predetermined by nature or data, or any other orderly process, and therefore they rest largely on the theorist’s prior knowledge and creativity. Theory can be understood further as a cohesive and consistent body of knowledge (Prochaska & Norcross, 2010) that, when applied to addiction, helps explain human behavior and change mechanisms. The function of theory is thus to organize and impose order and meaning on a collection of isolated observations or data (Monette, Sullivan, & DeJong, 1990). In this respect, theories attempt to make sense of dissimilar findings and to explain relationships among variables of interest. In the study of addictive behavior, theory helps us understand its etiology and points to possible intervention strategies.

Because a theory is a tentative approximation of “truth” (Prochaska & Norcross, 2010) or provisional (i.e., it does not explain a phenomenon in absolute or final terms), it is inappropriate to characterize it as *true* or *false* (Feist & Feist, 2009). Instead, it is best to describe a theory as *useful* or *not useful* (Hall, Lindzey, & Campbell, 1998), as well as relevant
or irrelevant. A theory’s utility and relevance thus can be assessed by its ability to (1) explain certain events in a logical and cohesive manner, and (2) generate ideas and concepts that enhance understanding. These two functions go hand in hand. A useful and relevant theory not only helps to explain what has been observed; it also generates alternative explanations for new observations. This also means that a useful and relevant theory is never permanent or impervious to change. Quite the contrary: It remains tentative and subject to revision; it is constantly in flux, depending on how it is tested. And by *tested* we mean its application over time to explain new developments, such as results of scientific investigations.

The application of theory to science does not mean that data from research studies can *prove* or *disprove* a theory, or can render it “true” or “false” (Feist & Feist, 2009). This kind of thinking confuses the separate, although related, constructs of theory (i.e., abstraction) and empiricism (i.e., observation). Theory guides and explains observation, and observation guides theory development. Both are needed to enhance understanding of addictive behavior; they are complementary and therefore one cannot dismiss the other. Although the “the link between theory and data is extremely tenuous” (West, 2006, p. 21), it is important that people devoted to understanding and changing addictive behavior (practitioners, family members, researchers, politicians, and community leaders) consult both sources of information: theories of addiction and empirical research. This book showcases both.

**Attributes and Functions of Good Theory**

Given the importance of a theory’s relevance and utility, it is worth considering what makes a good theory. That is, what is it about a theory that makes it relevant and useful in practice? On the basis of what criteria should a practitioner select a theory to help guide his or her decisions in planning interventions?

There are at least eight attributes of a good theory that have been proposed by theorists and researchers in the behavioral sciences, including the addictions (e.g., West, 2006). These eight are listed below. Each describes the function of a good theory, which is to be useful in practice.

1. **Explains a related set of observations.** The explanatory function of a theory is crucial. More than simply describing a collection of observations (as a model does), a good theory explains the meaning or the purpose of those observations by seeing beyond the visible to underlying connections. A good theory not only answers the question “What is happening?”, it goes further by attempting to answer the question “Why is this happening?” A good theory, therefore, speculates about how and why a set of observations...
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is related. It helps to make sense of what can be observed by proposing connections that are not obvious. This function renders meaning and a sense of order to the set of observations.

2. Coherent and cohesive. The connections that comprise a theory should logically “stick together”; this also means that a good theory is internally consistent. The explanation of what is happening should be solid rather than shaky, and tight rather than loose.

3. Comprehensible. The propositions of a good theory should be clearly described and easily communicated. Ideally, theory will lift a cloud of confusion and replace it with clarity. According to Stefflre and Burks (1979), a good theory should serve as “an easily read map” (p. 9). Questions about how the propositions of a theory coalesce or fit together no longer need to be raised.

4. Explicit. Precision is a chief characteristic of a good theory. Important theoretical concepts must be defined operationally. That is, concepts must be measurable with a high degree of reliability. Theories relying on vague, ill-defined, or difficult-to-measure concepts cannot be checked against clear referents in the real world (Stefflre & Burks, 1979).

5. Involves no more concepts or elements than are necessary. A good theory explains phenomena in a relatively simple and straightforward manner. It is concise and to the point; it is parsimonious. This means that a good theory encompasses only essential ingredients; extraneous material is discarded as unnecessary. A theory that can explain behavioral events in innumerable ways is suspect. A theory that “overexplains” something may be creative, but it may also be fiction; it may not accurately reflect reality.

6. Comprehensive. Although a good theory does not attempt to explain everything, it can be applied to many individuals in many different situations. Its ability to explain events should extend across a variety of time periods, geographic areas, sociocultural contexts, and sociodemographic variables (e.g., gender, race/ethnicity, religion). This function also speaks to a theory’s relevance.

7. Generates predictions that can be tested. For a theory to remain relevant over time, it must be able to generate questions and offer predictions that can be tested. Theories are always “under construction.” A good theory has a history of generating research findings (i.e., data) that support its concepts and further its enhancement. Theories that have little or no empirical support are less useful than those that have considerable data driving further investigation of their propositions.

8. Not contradicted by empirical evidence. West (2006) maintains that for a theory to develop, mature, and endure, it must not be “overruled” by a competing theory; it must be able to stand alone. This is a tall
order. And yet this attribute and function of a theory is necessary so as to “weed out” nonuseful, opportunistic, and ephemeral theories. Subject to ongoing testing, a good theory must be able to explain “big observations” so as to exert its utility over time and across populations. Theories that persist despite overwhelming evidence to the contrary (i.e., existence of strong counterexplanations) may continue to serve as an important historical foundation of the study of addictive behavior, but they should be challenged and in most cases discarded as conceptual frameworks for contemporary practice.

**Theory as a Road Map**

Some time ago, Stefflre and Burks (1979) aptly summarized the attributes and functions of a good theory by likening it to a road map. Just as maps necessarily change to reflect alterations of the terrain, so too must theories change to account for new discoveries. In this way, a good theory not only explains what is known; it is revised based on new data and ideas. A good theory thus is sturdy and fluid, solid and malleable. It remains relevant by harnessing its dialectical functions of explanation and proposition. In a sense, a good theory is perpetually reinventing itself. And as it does, it serves to point practitioners and researchers in a direction that is clear and helpful. As Stefflre and Burks stated, “A theory is always a map that is in the process of being filled in with greater detail. We do not so much ask whether it is true, but whether it is helpful” (p. 9).

**Conceptions of Addiction in U.S. History**

Notable events in U.S. history have shaped today’s conceptions of substance use and addiction. A review of these conceptions provides insight into how we have come to understand addiction in three distinct ways: as (1) immoral conduct, (2) as disease, or (3) as maladaptive behavior. In this section, you are encouraged to critically evaluate the historical conceptions of addiction by applying the eight attributes and functions of a good theory presented earlier. For example, for each perspective of addictive behavior mentioned in U.S. history, how clear, comprehensible, and parsimonious is it? Has the concept been contradicted by subsequent empirical evidence?

**The Incongruent Views of Addiction**

For most of American history, habitual drunkenness and drug use have been viewed as both sinful conduct and as disease. In recent decades, they also have been considered maladaptive behavior (i.e., debilitative behavior
that is “overlearned”). Today, some insist that addiction evolves from all three sources: that is, it is a disease in which people learn to act in immoral ways.

This incongruent view of addiction is known to have a long history, and only in recent years has this history been studied in a systematic way (White, 2002). The use of drugs other than alcohol (e.g., morphine and other opiates, cocaine and other stimulants) also has a lengthy history in the United States. Nevertheless, historical analysis of alcohol problems has garnered more attention in recent years due in part to the emergence of interest in the era of National Prohibition and the lessons it may provide in today’s debate about the size and scope of government intervention in this area. This historical review therefore emphasizes conceptions of alcoholism more so than other drug addictions.

**Colonial Period and Reformation**

In the United States, the conception of addiction to alcohol has been evolving since the colonial period (roughly 1607–1776). During that time, alcohol consumption in the populace was high (by today’s standards) and inebriety was quite common (Burns, 2004). There was little concern about excessive drinking and drunkenness, and those who engaged in these behaviors were regarded simply as “distractions” from more important events (Weinberg, 2005). Even after the Revolutionary War and into the 19th century, Americans generally had a high tolerance for social deviance—having only recently gained their freedom from British rule—and thus they were mostly indifferent to the problems caused by heavy drinking. Alcohol was used as a beverage, as medicine, as barter, and as a social lubricant. The town tavern was at the center of social and political life. Workers often drank throughout the day, and some employers actually supplied them with free liquor. Okrent (2010) reports that by 1830 each adult, on average, was consuming the equivalent of 1.7 bottles of 80 proof liquor per week, or roughly seven gallons of pure ethanol per year!

During the 17th century and for most of the 18th century, alcohol was not seen as an addictive substance, and habitual drunkenness was not viewed as a disease or a medical condition (Edwards, 2010). Moreover, frequent, heavy drinking was not understood to be a compulsion involving a so-called “loss of control,” nor was it considered a progressive, deteriorative disorder. Although most Americans considered excessive drinking to be of little importance, some prominent figures did warn about and chastise drunkenness. In these instances, it often was defined as a vice, as immoral behavior. In sermons, Puritan ministers warned that drunkards faced eternal suffering in hell, and although Cotton Mather referred to alcohol as the “good creature of God,” he also described drunkenness as “this engine of the Devil” (Mather, 1708). In the 1760s, John Adams proposed restrictions
on taverns, Benjamin Franklin described these establishments as “pests to society,” and President George Washington labeled as traitors the “Whiskey Boys,” who rebelled against the 1791 Congressional tax on whiskey and other liquors (Gately, 2008; Rorabaugh, 1976).

With the dawn of the Enlightenment period and the Age of Reason in the United States (roughly the mid- to late-18th century), habitual drunkenness became a focus of concern and systematic inquiry. This was also true during the Georgian period in Britain, when England was ruled by four successive King Georges (1714–1830). The introduction of cheap distilled spirits to the working class and poor in England in the early 1700s led to an increase in public intoxication and diseases, a time in British history known as the “gin craze” (Warner, 2003). Although it was deemed immoral, the habit of drunkenness also came to be viewed as a type of disease state. It would be erroneous, however, to equate the very early understanding of disease with how it is often understood today—as a distinct pathology (Edwards, 2010). According to Porter (1985), disease in 18th-century Britain was understood as dis-ease—a state of discomfort or an imbalance in the human constitution (and relating primarily to bodily fluids) attributable to a lack of wholesome diet and proper exercise. In the late 1700s and early 1800s, the disease state of habitual drunkenness referred to the behavior itself, to the act of drinking in excess, and this behavior was only a concern because of the medical complications it caused, such as gout, jaundice, and depression. Habitual drunkenness 200 years ago, therefore, was not considered a medical condition or a disease in its own right. It was a disease by association only—that is, by the dysfunctions, disabilities, or diseases that it caused.

The first American to write extensively about habitual drunkenness as a type of disease state was Dr. Benjamin Rush, considered the father of American psychiatry (Brodsky, 2004). He was a Philadelphia physician, a signer of the Declaration of Independence, a Christian reformer, and surgeon general of the Continental Army who, in 1784, authored a pamphlet titled An Inquiry into the Effects of Ardent Spirits on the Human Mind and Body. In this work, Rush challenged the conventional view that habitual drunkenness was an innocuous activity. He did not condemn alcohol use per se, but rather its excessive consumption and drunkenness. He also confined his commentary to the excessive use of distilled spirits or hard liquor (specifically “grog” or rum, and “toddy”), not fermented alcohol (i.e., beer and wine) that he viewed as “generally innocent” and even having a “friendly influence upon life and health” when consumed in moderation (Rush, 1790/1814/1943, p. 325). Rush acknowledged that “drunkenness resembles certain hereditary, family and contagious diseases” (p. 327), but he also inferred that the condition is actively acquired (i.e., becomes customary practice) and is not beyond the individual’s control. For example, he described a gradual process of “contracting a love for distilled liquors by
accustoming the stomach to their stimulus” (p. 333). He also categorized the death that results from habitual drunkenness as suicide, implying that intoxicated “self-murderers” (p. 329) were able to exert some measure of control over their circumstances. Furthermore, he believed that the “condemnation” received “at the day of judgment” (p. 329) would be far greater for those who died from habitual drunkenness than those who died from using opium (a substance he deemed to be “less injurious to the body and mind” than distilled alcohol).

Levine (1978, p. 152) contended that Benjamin Rush contributed to a new understanding of habitual drunkenness that included the contemporary understanding of alcoholism as a “loss of control” over drinking behavior whose only “cure” is complete abstinence. A close review of Rush’s writings, however, does not reveal a clear articulation of the involuntary nature of habitual drunkenness, and abstinence from all hard liquor is only one of 12 “remedies” listed to prevent further drunkenness. These remedies can be categorized as “religious, metaphysical, and medical” (p. 338), and included obeying Christian doctrine, feeling guilt and shame, eating vegetables, temporarily substituting beer or wine when abstaining from hard liquor (to assuage craving and withdrawal), and engaging in alternative behaviors on the days and times when one would customarily drink.

Although it may be tempting to locate incontrovertible evidence that Rush was the creator of the disease concept of addiction, this is not found in his writings. Rather, as Levine (1978) rightly stated, Benjamin Rush is to be credited first and foremost with alerting Americans to the dangers of unrestrained drinking, or to what Rush referred to as the “evils produced by ardent spirits” (p. 329). He emphasized that alcohol misuse contributed to an array of social problems: disease, poverty, crime, insanity, and broken homes. In this regard, habitual drunkenness was a public health issue necessitating a comprehensive and multifaceted approach extending beyond the purview of medicine.

At about the same time as Benjamin Rush, the recently retired British physician to the Royal Navy, Thomas Trotter, proposed that “the habit of drunkenness” was a “disease of the mind,” similar to delirium and mania. His 1804 An Essay, Medical, Philosophical and Chemical, on Drunkenness and its Effects on the Human Body was “a pioneering text and the first book-length treatise on what is today referred to as ‘alcoholism’ to appear in any language” (Vale & Edwards, 2011, p. 156). It earned him recognition as “the first scientific investigator of drunkenness” (Harrison, 1971, p. 92). Although Trotter may not have been the first British physician to refer to excessive alcohol consumption as a “disease” (according to Porter’s historical review), his treatise appeared at a time when psychiatry was a nascent profession. He may be credited, therefore, with prioritizing medical and specifically psychiatric interventions for habitual drunkenness, more so than moral reform. According to Edwards (2010), Trotter challenged the
medical community to assume ownership for the issue of habitual drunkenness, whereas Benjamin Rush appealed to Christian clergy to champion its fight. Over the course of history, however—in the United States and in Britain—both the medical and religious communities have been instrumental in defining alcohol misuse and its remedies, and this included their involvement in temperance societies.

The writings of Benjamin Rush and Thomas Trotter (and those before them; see Porter, 1985) thus contributed to the process of redefining “habitual drunkenness” from an exclusively immoral condition to one also influenced by physiological and mental dysfunctions and reflecting a medical disorder. This paradigm shift, however, took place over almost 150 years, and it was not until the late 1800s that excessive drinking was specifically referred to as a treatable disease. According to Tracy (2005, 2007), the shift in understanding habitual drunkenness is evident in the different terminology used in the American medical community from 1870 to 1920: from intemperance (primarily an immoral condition) to dypsomania (a heritable medical condition similar to insanity that primarily affected the middle and upper classes) to inebriety (an involuntary yet habituated condition, reflecting both medical and moral characteristics) and finally to alcoholism (a condition attributed more to the substance, alcohol, than to the behavior of the drinker). These diverse terms “actually reflected a sophisticated understanding of alcoholism’s etiology—one that acknowledged heredity, environmental circumstance, and individual temperament” (Tracy, 2007, p. 88).

It is important to note that the different views of substance use throughout U.S. and British history are the direct result of changes in economic, political, religious, and other social conditions. Addictive behavior—then and now—cannot be studied and understood apart from these factors; it is not an isolated phenomenon. Substance use was therefore not the sole focus of reform efforts during the 18th, 19th, and into the 20th centuries in America and Britain. Economic development, governmental structure and political party formation, religious freedom, the institution of formal education, and public health and safety were all the essential ingredients of nation building. Although Benjamin Rush addressed the issue of habitual drunkenness, his work also focused on education, abolition, the humane treatment of criminals and the insane, and an extensive array of physical illnesses. As a Christian reformer, physician, and politician, his work and writings were instrumental to the Temperance movement in the United States, the largest campaign of the 19th century for moral and social reform.

**Temperance Movement and Prohibition Period**

The first temperance society was formed in 1808. Three years later a number of independent groups united, and in 1826 the American Society for
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the Promotion of Temperance (later renamed the American Temperance Society) was founded. Consistent with the views of Dr. Rush, the initial objective of the society was to promote moderation, not prohibition. To accomplish this, the society organized itself into local units that sent lecturers out into the field, distributed information, and served as a clearinghouse for movement information.

By the mid-1830s, over 500,000 Americans had joined the Temperance movement and made a pledge to abstain from all alcoholic beverages (Levine, 1978). In the 5 years after the 1840 founding of the non-Christian temperance fraternity, the Washingtonians, approximately 600,000 had pledged to refrain from any alcoholic beverages, including wine and cider (Tracy, 2005). The emphasis on moderation gave way to the necessity of abstinence for all citizens. Thus, the temperance movement became a prohibitionist movement, and increasingly habitual drunkenness or intemperance was seen as immoral conduct. The famous American huckster P. T. Barnum, who later founded the Barnum and Bailey Circus, was one of the most popular and outspoken campaigners for prohibition at this time. He drew crowds to his American Museum in New York City that included “moral plays in a moral manner,” with one act featuring an extreme case of alcohol-induced delirium and seizures (delirium tremens, or DTs) intended to scare the public into abstaining from all alcohol (Okrent, 2010). After the Civil War (1861–1865), this view was applied to opium and morphine, as well as cocaine, which were all subsequently viewed as inherently addicting poisons.

Those in the Temperance Society worked hard to proselytize others, and to an extent they were successful. Employers stopped supplying alcohol to their employees on the job. Politicians were more restrained in their relations with alcohol producers and distributors. In many areas, local legislation was passed to regulate taverns—an outcome of lobbying by the society. Goode (1993) reported that between 1830 and 1840, annual alcohol use dropped from 7.1 gallons per person (age 15 and older) to 3.1 gallons. Support for temperance waned, however, during and after the Civil War (Tracy, 2005): The United States Brewers’ Association was established 1 year after the war began, and the amount of alcohol consumed increased by 300% from 1850 to 1870.

It was not until the late 1800s that the Temperance movement experienced resurgence, most notably under the leadership of women, many of whom had experienced the debilitating effects (e.g., loss of family income, home; domestic violence) of the excessive drinking of their husbands and other male family members. The Women’s Christian Temperance Union (WCTU) was founded in Cleveland, Ohio, in 1874 on the platform of “protection of the home” against the “ravages of alcohol.” Although their efforts may have been to help reform the “habitual drunkard” through the Christian gospel and “moral suasion,” members of the WCTU launched a
strident “do everything possible” national campaign that included shutting down drinking establishments, supporting newly developed “cures” for inebriety, advocating against the use of alcohol in medical interventions, and changing workforce policies and practices.

For Frances Willard, the second and most famous president of the WCTU, habitual drunkenness was both a moral and a medical condition—the former, however, remained more important for her and her followers. The priorities or values of the WCTU are evident in the ordering of the words that comprise its name: It was, first and foremost, a women’s organization “born of Christ’s Gospel and cradled at His altars,” whose purpose was “to help forward the coming of Christ” by prohibiting the traffic of “intoxicating drinks” (despite its use of the word temperance) and mobilizing “the total abstinence agenda” (excerpts from Frances Willard’s speeches, cited in Gordon, 1898, pp. 131, 133, 139). The WCTU regarded “the drunkard as one who commits a crime against society” and therefore favored legal intervention and custody so as to imprint upon “the drunkard . . . the displeasure of the community in which he moves about as a perpetual danger” (see Gordon, 1898, p. 175). Given the WCTU’s vehemently moralistic approach to habitual drunkenness, it is no wonder that Tracy (2007) declared the WCTU as “one of the most visible and powerful critics of the disease concept” (p. 88).

John B. Gough (1881), another prominent temperance lecturer, said that he considered “drunkenness as sin, but I consider it also disease. It is a physical as well as moral evil” (p. 443). These mixed medical—moral conceptualizations of inebriety were actually consistent with those expressed by physicians at the time. In her review of the history of alcoholism in America during the late 1800s and early 1900s, Tracy (2005) reported that upon the recommendation of Dr. B. N. Comings, a Civil War surgeon, the American Medical Association (AMA) adopted a resolution in June 1876 that inebriety was both a vice and a disease, even though one member contended that the moral failing was actually the disease. Thus, it can be seen that the muddled conceptions of alcoholism that exist today have a long history.

In 1870, the American Association for the Cure of Inebriates (AACI) was founded in the United States. AACI members identified themselves more as scientists than as temperance leaders. Their focus was to “reveal that [inebriates] were victims of a curable condition, worthy of public sympathy and medical care rather than punishment” (Tracy, 2005, p. 3). Four of their eight principles were:

1. Intemperance is a disease.
2. It is curable in the same sense that other diseases are.
3. Its primary cause is a constitutional susceptibility to the alcoholic impression.
4. This constitutional tendency may be either inherited or acquired.
These principles may have inspired Dr. Leslie E. Keeley, a surgeon for the Union Army during the Civil War, to boastfully proclaim in 1879 that “drunkenness is a disease and I can cure it.” He proceeded to market a tonic to treat inebriety and also to open up over 100 institutions for its treatment, settings wherein male residents could experience camaraderie (similar to that experienced in taverns, minus the alcohol) to restore their dignity. Although Keeley was regarded as a charlatan by many in the medical community, he is credited with convincing the public that inebriety was a treatable condition. The opening of various state inebriate asylums in Massachusetts, Connecticut, Minnesota, and Iowa, in the mid- to late 1800s also served to medicalize intemperance and spawn a new medical specialty.

It was also at this time that problems associated with the use of narcotics (e.g., morphine and other opiates) were more noticeable. Musto (1999) cites a committee report of the American Pharmaceutical Association that from 1898 to 1902 importation of cocaine and opiates (opium and morphine) had risen 40% to almost 600%, respectively, even though the American population had increased by only 10%. The invention of the hypodermic needle led to an increase in morphine addiction in the late 1800s, and it was generally believed that physicians were the primary cause of their patients’ drug addiction (known as iatrogenic addiction) in their efforts to treat such maladies as cholera and dysentery, and also obstetrical and gynecological problems. The dangers of morphine and other opiates were balanced by their effective treatment of physical ailments, most notably in reducing pain and calming nervous conditions. The iatrogenic explanation for drug addiction, however, applied only to the wealthy and upper-middle classes—to those who had access to and could afford medical services and whose “innocent” or “accidental” addiction could therefore be excused because of negligent physicians or “dope doctors.” A “social contagion” explanation for drug addiction applied to the poor and the working class because of their involvement in prostitution, gambling, and other deviant and illegal behaviors. To address the concerns of drug addiction, Campbell (2010) reports that state and local government bodies and private philanthropic foundations funded research initiatives and established treatment facilities in the late 1800s (e.g., the New York City Narcotic Clinic).

Despite these attempts to define and treat addiction as a medical condition in the 1800s and early 1900s, the moral campaign gained the upper hand. Physicians were not united in their belief that drug addiction (including its withdrawal syndrome) was an organic disease (Musto, 1999), and many believed that addicts who frequented their medical offices were troublesome and could not be trusted. The Harrison Narcotic Act passed by Congress in 1914 and implemented in 1915 gave authority to the Internal Revenue Service to tax—and therefore to regulate—opiates, derivatives of the coca plant, and other drugs. Specifically, it forbade the purchase
of narcotics by unlicensed persons and prevented the refilling of prescriptions containing narcotics (Kolb, 1928). This piece of legislation may have provided further momentum to the cause of alcohol prohibitionists even though alcohol and drugs such as narcotics were not viewed by many at the time as equal vices. The increased consumption of alcohol at the turn of the century may have been reason enough for alcohol reformers to forge ahead. According to Okrent (2010), consumption of alcoholic beverages “exploded” in the late 1800s: from 36 million gallons in 1850 to 855 million gallons in 1890. And from 1900 to 1913, per capita consumption of both beer and liquor increased by one-third (Blocker, 2006). Although the U.S. Brewers’ Association, in 1866, attributed domestic troubles, poverty, crime, and disease to use of hard liquor, it referred to its own product—beer—as “liquid bread.” Temperance and prohibition leaders thus had reason to be concerned.

The Anti-Saloon League (ASL), established in 1893 in Oberlin, Ohio, assumed the reins of the Temperance and Prohibition movements by maintaining an anti-alcohol focus. The ASL appealed to clergy (including popular evangelist and former professional baseball player Billy Sunday), engaged in inventive political maneuvering, and published and distributed mass propaganda (with messages conveying its moral authority). References to people and localities as either “wet” or “dry” signaled the transition from a goal of moderate and nonproblematic alcohol use to one of zero tolerance. This dichotomous thinking also promoted further divides—between poor and rich, black and white, native and immigrant. Although the inebriety of European immigrants (e.g., Irish) had been a concern for some time, World War I heightened specifically anti-German sentiment in the United States. This sentiment extended to those whose names were Pabst, Anheuser, and Busch, even though their brewery businesses were already well established. An ASL argument was that breweries were using grain that should be targeted for more wholesome purposes, such as food for U.S. soldiers. Interestingly, the ASL’s efforts did not appear to blame men for the alcohol problem in as pronounced a manner as other reform groups. Perhaps it was because the prohibitionist and the suffrage movements joined forces at this time to achieve their respective goals in 1920: National Prohibition became law (the Eighteenth Amendment to the U.S. Constitution) and women gained the right to vote (the Nineteenth Amendment to the U.S. Constitution).

The federal ban on all production, transportation, and sale of “intoxicating liquors” had a profound effect on how addiction was—and still is—understood and treated. Even though prohibitionists located the culprit of alcohol addiction in its “poisonous” beverage, the person who “allowed” him- or herself to become victim to excessive alcohol consumption (whether it was beer, wine, or distilled alcohol) was still viewed by the majority of the populace as morally depraved and deserving of punishment. This was
particularly true during a time when alcohol was not supposed to be readily available, a time that Blocker (2006) notes essentially “wiped out” a collective and successful industry (breweries and distilleries, in particular; wineries, less so). Granted, the habitual drunkard could still find alcohol. What he or she could not find was help when needed because most of the inebriate asylums had closed and mutual aid societies had dissolved. The moral victory during Prohibition therefore essentially “extinguished America’s collective memory of the early movement to medicalize alcoholism” (Tracy, 2005, p. 275).

This included the memory of physicians. In 1917, the AMA adopted a resolution stating that medicinal alcohol lacked any scientific value. Only 5 years later (and only 2 years into Prohibition), the AMA essentially reversed itself by declaring that any restriction on the medicinal use of alcohol represented an interference with medical practice. Okrent (2010) reports that during Prohibition, physicians increasingly prescribed alcohol for various ailments, including asthma, cancer, diabetes, and even old age. Add to that the increased acquisition of sacramental wine (its production exempted in the Eighteenth Amendment) by rabbis and priests during Prohibition. Prohibition thus served to showcase, more than ever before, Americans’ conflicted attitudes toward alcohol and addiction.

Post-Prohibition and the Medicalization of Addiction

Blocker (2006) contends that the Great Depression of the 1930s is largely responsible for the repeal of Eighteenth Amendment in 1933. Widespread economic hardship—due in small part to the loss of tax revenue on beer and liquor manufacturing and sale—replaced alcohol as the explanation for human travails. Furthermore, Prohibition had been unsuccessful in eliminating alcohol consumption, and it was only moderately successful in reducing drinking: According to Okrent (2010, p. 148) the best estimates of authoritative scholars are that use decreased by 30% in the first decade of Prohibition. Blocker (2006) argues, however, that Prohibition did succeed in keeping drinking rates below pre-Prohibition levels until the 1970s. Even during World War II, when the federal government did not enforce stringent restrictions on the alcohol industry, drinking rates remained relatively low. Kolb (1928) claimed that drug addiction “decreased rapidly” during Prohibition. It could be said, therefore, that Prohibition was “partly successful as a public health innovation” (p. 241). But credit for decreased alcohol consumption also must be extended to the economic strain of the Great Depression, state (rather than local or federal) liquor control policies, ongoing labor reform, founding of the Research Council on Problems of Alcohol in 1937 (financed by the alcohol beverage industry), and the founding in 1935 of what now is considered the largest and most successful self-help group in the world: Alcoholics Anonymous (AA). That a physician
(Dr. Bob Smith) and an unemployed stock broker (Bill Wilson) would join forces, after a chance meeting in Akron, Ohio, to establish a fellowship based on Christian principles that would embrace and become synonymous with the disease concept of addiction symbolizes, quite profoundly, the enigmatic tapestry of addiction.

Although prohibitionists and members of AA were united in their efforts to prevent the destructive effects of alcohol, this was their only similarity. Prohibitionists believed that anyone could become an alcoholic, whereas AA members identified themselves as compulsive drinkers who had a unique constitution that prevented them from drinking “normally.” Their problems stemmed from a yet undefined condition within themselves (e.g., an “allergy” that induced excessive drinking, a theory proposed by New York physician Dr. William Silkworth and adopted by AA) rather than from the pharmacological properties of ethanol. In the view of AA, this condition set alcoholics apart from other drinkers. Furthermore, AA was established primarily to rehabilitate “drunkards” by welcoming them into a morally supportive fellowship of other—and recovering—drunkards, not by humiliating them or subjecting them to punitive measures. Such a welcoming community that offered a message of hope through personal testimonies was just the balm many habitual drunkards needed at the time, particularly those still scarred by their treatment as immoral outcasts during the self-righteous Prohibition movement. Publication in 1939 of AA’s “Big Book” that outlined its founders’ views on alcoholism brought further attention to AA, but it was the Saturday Evening Post cover story of AA in March 1941 that is widely considered as the primary reason that AA membership quadrupled from 2,000 to 8,000 that year (Weinberg, 2005).

Scientific interest in chronic inebriety also increased after Prohibition, supported financially by the liquor industry (interested in diverting causation of alcoholism away from alcoholic beverages to the drinker) and by notable industrialists (e.g., John D. Rockefeller, Jr., Andrew Carnegie) who favored alcohol taxation for their own financial gain. The Research Council on Problems of Alcohol was established in 1937, and the Yale Center of Alcohol Studies soon followed in 1941. Although these early and private research institutes did not support AA’s adoption of the allergy theory of alcoholism, and AA was “quite cavalier about the relevance of science to their own work” (Weinberg, 2005, p. 58), these separate movements needed each other to promote their own interests. As Weinberg notes, the scientific community benefited from the popularity of AA because more research dollars were solicited from private foundations to study a condition that afflicted the middle class (not just “Skid Row bums”) and was potentially curable (i.e., worth the investment). In turn, AA benefited from the scientific community’s legitimization of alcoholism as a disease, albeit a heretofore nonspecific and elusive medical disorder that included certain characteristics within the drinker, chiefly “loss of control.”
Due to the effects of the 1915 Harrison Narcotic Act, and America’s involvement in World War II and the Vietnam War, drug addiction remained a focus of scientific inquiry. Prisons had become overcrowded with convicted narcotic users in the 1920s, and two “narcotic farms” (in Lexington, Kentucky, and Fort Worth, Texas) were established in the 1930s to relieve this burden. Placed under the jurisdiction of the Public Health Service, these facilities laid the groundwork for medicalizing drug addiction (Musto, 1999). Dr. Lawrence Kolb was the first medical director of the Lexington facility and later worked for what would become the National Institutes of Health in Washington, DC. He proposed that drug addiction resulted primarily from preexisting psychopathology (e.g., “abnormal nervous make-up,” neurosis, psychopathy; Kolb, 1928), whether or not addicts began their use “accidentally” to satisfy pleasure (classified as “pure dissipators”) or because of a medical condition for which narcotics were prescribed. Although Kolb was criticized for what Weinberg (2005) described as “the veiled moralism of his own theories” (p. 67), he advocated for a medical approach to the treatment of drug addiction rather than punishment. Such a focus was challenged from 1935 to 1960 when anti-Communist sentiment and fear of any efforts to undermine nationalistic fervor or patriotism contributed to an escalation in criminalization for drug use and related behaviors. It was during this time, in 1953, that Narcotics Anonymous was founded in Southern California.

The civil rights movement in the United States and the counterculture of the 1960s represented a slight shift in tide toward drug addiction and also showcased a greater variety of addictive substances, namely hallucinogens and marijuana, and in the 1980s, cocaine. This variety generated expanded considerations about the nature and causes of addiction. Although federally funded research on drug and alcohol dependence had been under the purview of the National Institute of Mental Health (NIMH) since its inception in 1948, it was only with the founding in the early 1970s of federal agencies devoted specifically to substance use issues that addiction research, treatment, and prevention gained prominence. Harold Hughes, a self-described recovering alcoholic and a member of AA in Iowa, was elected to the U.S. Senate in 1968 and was instrumental in passing through Congress the act that established the National Institute on Alcohol Abuse and Alcoholism (NIAAA) in 1970. According to Weinberg (2005), this achievement effectively “institutionalized the disease concept of alcoholism” (p. 62). The National Institute on Drug Abuse (NIDA) was established in 1973 and, in partial contrast to NIAAA, promoted the concept of drug addiction as a form of deviant behavior (Campbell, 2010). This sociological emphasis allowed researchers and policymakers to consider environmental factors (e.g., poverty, urban decline) more so than biological factors when explaining addiction. There is logic to a predominant focus on biological mechanisms (including genetic predisposition) to explain addiction when only
one substance—alcohol—is considered. When a wide variety of substances classified under the nebulous heading drugs is the focus, explanations for addiction beyond “disease” are necessarily entertained. The difficulty is that addiction as “disease” is not, and never was, confined to a biological or medical explanation. Psychoanalytic explanations of addiction in the 1940s and 1950s included references to character malformation and deficits, such as having an infantile or immature and narcissistic ego incapable of accurate self-assessment. Alcoholics and addicts thus were branded as “liars” who were “in denial” about their addiction, and treatment approaches necessarily included confrontation to “break through” their strong defense mechanisms. These characterizations persisted into the counterculture movement of the 1960s and 1970s, a time of great societal change in the United States. It also was during this time that prominent psychotherapies (e.g., Gestalt therapy, reality therapy, rational-emotive behavior therapy) endorsed direct and confrontational approaches (e.g., disputing irrational thinking) in order to promote client catharsis. It was believed that recovery from addiction could occur only by first uncovering “deeply rooted” and repressed beliefs and feelings and then encouraging clients to vent in dramatic fashion. Synanon, the first self-supporting and peer-based recovery community, was founded in the 1970s in Ocean Park, California, and used aggressive confrontational strategies (see White & Miller, 2007). Few viable treatment alternatives were available at this time, and science-based evidence was in its infancy.

**Current Views of Addiction**

It should be evident from this review of conceptions of addiction in U.S. history that addiction to alcohol or other drugs has consistently been viewed as a “hybrid medico-moral affliction” (see Tracy, 2005, p. 26). This remains true today. Despite the American Psychiatric Association’s recognition of addiction as a mental disorder, advances in neurobiology and biochemistry, and findings from sophisticated behavioral and social science research (e.g., behavioral economics) that implicate conditioning and environmental factors (e.g., poverty) in the initiation and maintenance of addiction, the person who has become addicted to a substance is still often regarded as the sole culprit and consequently treated as a criminal in modern society.

Federal policies and practices have promoted this form of public excoriation of alcoholics and drug addicts. For example, the 1986 Anti-Drug Abuse Act signed into law by President Reagan drastically cut funding for treatment and research while dramatically increasing funding for law enforcement to “fight drugs” and implement a “zero tolerance” policy. This moralistic and punitive view of addiction still guides alcohol and
drug control policies today. For instance, drug courts “sentence” offenders to “treatment,” driving while intoxicated (DWI) offenders are required to participate in treatment and/or attend AA meetings, employers make workers’ continued employment contingent on seeking treatment, and some medical centers may not accept for liver transplantation individuals diagnosed with alcoholic liver disease. Such practices tend to impede progress toward developing widely shared social norms about acceptable and unacceptable substance use, and they spur acrimonious debates about public drug control policy. Peele’s (1996) description of the “disease law enforcement model” is reminiscent of practices more than a century old and it still applies today: “When public figures in the United States discuss drug policy, they generally veer between these two models, as if the debate is over whether we should imprison or treat drug addicts. In fact, the contemporary U.S. system has already taken this synthesis of the law enforcement approach to drug abuse and the disease approach almost as far as it can go” (p. 204).

Americans have remained conflicted about alcohol and other addictive substances (e.g., marijuana), and perhaps increasingly about specific behaviors that can become addictive (e.g., gambling, video gaming). This ambivalence is likely due to the futility—or more precisely, the impossibility—of isolating a singular and direct cause of addiction. With respect to substance addictions, Kalant (2009) offers: “Addiction is not produced by a drug, but by self-administration of a drug; the difference is of fundamental importance” (p. 781). He proposes a comprehensive, complex, and integrative approach to understanding substance addiction rather than the frequently used approach known as biological reductionism. The former approach contends that addiction can only be explained by considering multilevel factors from the molecular to the societal.

The American conception of addiction, particularly alcoholism, has long been defined by incongruous assumptions involving morality and disease. Neither perspective has supplanted the other, probably due, at least in part, to various interest groups’ perception of benefit from maintaining the incongruent medical–moral addiction model. A more sophisticated debate about the nature of addiction that takes us out of both arenas (i.e., moral philosophy and medicine) may be too controversial and uncomfortable.

There does not seem to be much interest in entertaining the more complex notion that addiction represents maladaptive behavior; that is, behavior arising from interactions between the individual and environmental conditions. Such analyses would include examination of such factors as poverty, inadequate education, lack of employment, racism, and access to services. The prospects for this position gaining traction are not bright, except perhaps in academic circles. Even within this arena, scholarly attempts to define addiction continue to stumble when challenged by the entanglements
of personal responsibility and blameworthiness, reward seeking and brain circuitry, and disease and suffering. They intersect and are entwined by myriad contemporary social conditions, including the politics of special-interest groups; relentless attempts to medicalize human behavior; growing opposition to regulating economic markets and concerns about restrictions on personal liberties; and persistent poverty coupled with growing income inequality and increasing health disparities. Thus, there remains much disagreement and confusion about the nature of addiction.

**Then and Now: Three Broad Perspectives on the Nature of Addiction**

The preceding historical review of conceptions of substance use and addiction in U.S. history highlights three broad perspectives on the nature of addiction that remain “alive and well” today. These perspectives understand addiction as (1) immoral conduct, (2) as disease, or (3) as maladaptive behavior. All three of these perspectives, to varying degrees, were evident from the early Temperance days and into Prohibition, and they continue to be prominent today in public attitudes and in professional circles.

**Addiction as Immoral Conduct**

The first set of beliefs maintains that addiction represents a refusal to abide by some ethical or moral code of conduct. Excessive drinking or drug use is considered freely chosen behavior that is at best irresponsible and at worst evil. By classifying addictive behavior as sinful, one does not necessarily ascribe the same level of “evilness” to it as one would to rape, larceny, or murder. Nevertheless, in this view it remains a transgression, a wrong.

Note that this position assumes that alcohol and drug abuse (and other non-substance-related behaviors, e.g., gambling) are freely chosen behaviors. In other words, with respect to this sphere of human conduct, people are free agents: They have decision-making capacity and are able to control their behavior. Alcoholics, addicts, and pathological gamblers, for example, are not considered “out of control”; they choose to use substances or engage in activities in such a way that they create suffering for others (e.g., family members) and for themselves. Thus, they can be blamed justifiably for their addiction.

Because addiction results from a freely chosen and morally wrong course of action, the logical way to “treat” the problem is to punish the alcoholic or addict. Thus, from this perspective, legal sanctions such as jail sentences, fines, and other punitive actions are seen as most appropriate. The addict is not thought to be deserving of care or help. Rather, punishment is relied upon to rectify past misdeeds and to prevent further chemical
use. Relapse is considered evidence of lingering evil in the addict; therefore, punishment again is needed to correct “slipping” or backsliding.

In the United States today, this perspective on alcohol and other drug abuse is typically advocated by politically conservative groups, law enforcement organizations, and some zealous religious factions. During political campaigns, candidates frequently appeal to this sentiment by proposing tougher legal penalties for possession and distribution of illicit drugs and for drunken driving. As is apparent in the historical review at the beginning of this chapter, U.S. history is marked by repeated (and failed) government efforts to eliminate addiction with such legal sanctions. The crackdown on Chinese opium smokers in the 1800s and the enactment of National Prohibition in 1920 are two noteworthy examples.

The addiction-as-sin position has several advantages as well as disadvantages. One advantage is that it is straightforward and clear. There is little ambiguity or murkiness associated with this stance. Furthermore, it is absolute; there is no need for theorizing or philosophizing about the nature of addiction. It is simply misbehavior, and as such needs to be confronted and punished. Scientific investigation of the problem is believed to be unnecessary, because that which must be done to correct it (i.e., application of sanctions) is already well understood. In this view, society’s inability to adequately address the problems of alcoholism and addiction reflects widespread moral decay. Proponents of the addiction-as-sin model typically call for a return to “traditional” or “family” values as the way to ameliorate the problem. This was the case in the campaign of the Women’s Christian Temperance Union (WCTU) in the late 1800s and early 1900s, a campaign that continues today (www.wctu.org).

There are at least three disadvantages to the addiction-as-sin model. First, science suggests that alcoholism and other forms of addiction are anything but simple phenomena. They appear to have multiple origins, stemming from pharmacological, biological, psychological, and social factors. The apparent complexity of addiction is underscored by the variety of diverse theories seeking to explain it (many of which are described in subsequent chapters of this book). Moreover, as science has begun to shed light on various aspects of addictive behavior, it is clear that much still remains to be learned. The genetic vulnerability hypothesis (see Chapter 2), expectancy theories (see Chapter 7), and the purported stabilizing effects of alcoholism on family structure (see Chapter 8) are all cases in point.

Another disadvantage with the addiction-as-sin or moral point of view is that it is not at all clear that addiction is freely chosen. The disease models (see Chapter 2) maintain that exactly the opposite is the case. That is, excessive drinking or drug use represents being “out of control,” or a loss of control exists; in either case, the individual does not freely choose substance abuse. A further point of departure is offered by the social and behavioral sciences, where, at least in several theoretical perspectives, a
high rate of drug self-administration is understood to be under the control of social or environmental contingencies. These contingencies are usually external to alcoholics or addicts, and are not under their personal control. Thus, both the disease models and the social and behavioral sciences challenge the notion that addiction is willful misconduct.

A third disadvantage with the addiction-as-sin position is that history suggests that punishment is an ineffective means of reducing the prevalence of addictive problems in the population. Aside from the issue of inhumane sanctions (a real possibility if a political majority adopts the moral view of addiction), a reasonably strong case can be made, based on historical precedents, that striking back at substance abusers via governmental authority simply does not work over an extended period of time. Law enforcement crackdowns often have the unintended effects of strengthening organized crime networks, creating underground markets, bolstering disrespect for the law, clogging court dockets, and overloading prisons (at substantial cost to taxpayers).

**Addiction as Disease**

In the second view, excessive consumption of alcohol or drugs is the result of an underlying disease process (Detar, 2011). The disease process is thought to cause excessive drinking or drug use; the high rate and volume of use are merely the manifest symptoms of an existing illness. The exact nature of the illness is not fully understood at this point, but many proponents of disease models believe that it has genetic origins. For these reasons, it is hypothesized that individuals cannot drink or drug themselves into alcoholism or drug addiction. If the disease (possibly arising from a genetic vulnerability) is not present, then substance dependencies cannot develop, no matter how much of the substance is ingested.

The addiction-as-a-disease conception maintains that the alcoholic and addict are victims of an illness. The afflicted individual is not evil or irresponsible, just sick. And the illness or sickness is endogenous, which explains the reference to addiction as a dispositional disease (Miller, Forcehimes, & Zweben, 2011). Thus, substance use and behavioral addictions are not freely chosen; rather, excessive drinking, drugging, and gambling, for example, are beyond the control of the sufferer. A common feature of the disease conceptions is loss of control. This mechanism involves cravings that rob addicts of personal control. The power to resist temptation has gone (see West, 2006, pp. 76–77). Because alcoholics and addicts are seen as suffering from an illness, the logical conclusion is that they deserve compassionate care, and because the condition is considered a disease, medical treatment is appropriate. Competent treatment, then, especially on an inpatient basis, is physician-supervised. Traditionally, treatment based on the disease models emphasized the management of medical complications (e.g.,
liver disease, stomach ulcer, anemia), as well as patient education about the disease concept and about recovery.

The disease models continue to be strongly advocated by at least three groups today. One of these is the profession of medicine. Critics have indicated that physicians have a vested interest in convincing society that addiction is a disease. As long as it is considered such, they can admit patients to hospitals, bill insurance companies, and collect fees. However, regulatory restrictions in today’s health care system have greatly reduced physician authority, making such criticism seem less relevant. Another group that has strongly advocated for the disease conception is the alcohol industry (i.e., the brewers, distillers, and winemakers), which also has a vested interest in viewing alcoholism, specifically, as a disease. As long as it is a disease suffered by only 10% of all drinkers, then our society (i.e., government) will not take serious steps to restrict the manufacture, distribution, sale, and consumption of alcoholic beverages. Note that the alcohol industry wants us to believe that the problem lies in the alcoholic (i.e., consumer), and not in their alcohol products. A third group that strongly supports the disease notion, and has a vested interest in referring to addiction as a disease, is the recovery movement, comprised of individuals and families in recovery, including members of AA and other 12-step self-help groups. From this group’s perspective, calling alcoholism or addiction a disease makes it more respectable than labeling it a moral problem or a mental disorder. It also can serve to reduce possible guilt or shame about past misdeeds, thereby allowing recovering individuals to focus on the work that they need to do to establish and maintain a healthy life.

There are several advantages to the disease models. Most importantly, addiction is taken out of the moral realm, and its victims are helped rather than scorned and punished. In addition, society is more willing to allocate resources to help those who have a disease than to individuals who are merely wicked. It also is clear that the disease models have helped hundreds of thousands of alcoholics and addicts return to healthful living. Thus, its utility in assisting at least a large subset of addicts is beyond question.

There is a number of disadvantages to the disease models as well; only a few are discussed here. (Chapter 2 includes a more extensive discussion of these.) Briefly, several of the key concepts have not held up under scientific scrutiny. For example, the loss of control hypothesis, the supposedly progressive course of alcoholism, and the belief that a return to controlled drinking is impossible are all propositions that have been seriously challenged by scientific investigations. Within the scientific community, it is acknowledged that these assumptions are not well supported by empirical evidence. And many have argued that the disease models of addiction do not refer to a strictly medical condition (see Tracy, 2007). Unfortunately, a substantial segment of the prevention, treatment, and recovery communities appears to not use research as a guide for practice.
Addiction as Maladaptive Behavior

The third position holds that addiction is a form of maladaptive behavior; as such, it is shaped by the same laws that shape all human behavior. Essentially, addiction is learned. It is neither sinful (as the moral model purports) nor out of control (as the disease models purport). Instead, it is seen as an inability to adapt to unhealthy living conditions that present significant environmental, family, and social stressors. As in the disease models, individuals with an addiction are seen as victims, though not victims of a disease, but victims of the destructive living conditions in which they find themselves. For the most part, addictive behavior is not freely chosen, although some social and behavioral science theories (e.g., social-cognitive theory) do assert that addicts retain some degree of control over their problem behaviors and that addiction is a failure of self-regulation in a challenging environment.

It is important to understand the value placed on objectivity in the social and behavioral sciences. When addiction is described as a maladaptive behavior, this is very different from describing the condition as misbehavior (a moral perspective). Social and behavioral scientists avoid passing judgment on the “rightness” or “wrongness” of addiction. Maladaptive is used to convey a behavior pattern that is thought to have harmful or destructive consequences for addicts, their families, and society. It does not imply that addicts are bad or irresponsible persons.

In the social and behavioral sciences, both preventive and treatment interventions are based on learning principles and attempt to help individuals modify their lifestyle, as well as change the social conditions in which they live. This may involve the implementation of multilevel interventions that combine individual-level change strategies with those that seek to change conditions in neighborhoods, business practices, workplaces, and communities. Policy interventions also may be key components of multilevel interventions. Professionals in the social and behavioral sciences and in public health are most heavily involved in these approaches to substance abuse prevention and treatment.

Interventions attempting to influence the social environment and the behavior of individuals are labor-intensive and evaluation-focused. Thus, professional practice ideally should be theoretically informed, data-driven, and subject to frequent modification. Although these characteristics are consistent with today’s emphases on efficiency and accountability, many prevention and treatment programs are slow to adopt this kind of empirical approach (Miller, 2009). Today, facilitating adoption of evidence-informed practice is variously described as research translation, technology transfer, and diffusion of innovation. Each phrase has somewhat different meanings, but they all refer to processes by which new products and services are moved from research settings to practice settings and consumer markets.
A major problem in U.S. drug control policy today is the lack of awareness, among both the general public and political leaders, that competently-administered prevention programming and addiction treatment are effective in addressing problematic substance use; that is, prevention and treatment do “work” (Substance Abuse and Mental Health Services Administration, 2011). Nevertheless, public funding to control illegal drug use remains heavily invested in law enforcement and interdiction first, followed by treatment and then prevention (U.S. Office of National Drug Control Policy, 2012).

Why advocate for drug abuse prevention? Since 1989, a number of well-controlled preventive interventions has identified effective approaches to deterring tobacco, alcohol, and illegal drug use among youth (seminal studies include Botvin, Baker, Dusenbury, Botvin, & Diaz, 1995; Ellickson, Bell, & McGuigan, 1993; Hansen & Graham, 1991; Pentz et al., 1989; Perry et al., 1996). Some of these approaches have been school-based (e.g., Botvin et al., 1995; Ellickson et al., 1993), whereas others have been community-based with parent and school components (e.g., Pentz et al., 1989; Perry et al., 1996). Among the lessons learned from these early trials that remain true today is that positive program outcomes decay over time, and as a result, ongoing “booster sessions” are essential to maintain gains (Botvin et al., 1995; Ellickson et al., 1993). Of course, such additional services require resources, commitment, and collaboration among communities, schools, and parents. Another finding of the studies from this era that remains important today is that perceived peer norms mediate between program activities and outcomes (Hansen & Graham, 1991; Pentz et al., 1989; Perry et al., 1996). Prevention programming appears to be effective to the extent that it can instill conservative norms about substance use. Stated in another way, if youth are influenced to perceive that substance use is uncommon (not prevalent) and socially unacceptable among their peers, then they are less likely to initiate or continue substance use.

Existing research also provides a strong rationale for greater public support of substance abuse treatment programs (Cao, Marsh, Shin, & Andrews, 2011; Carroll et al., 2011). In 1999, the National Institute on Drug Abuse established the National Drug Abuse Treatment Clinical Trials Network (CTN) to bring together clinical practitioners and researchers to identify ways to increase the relevance of research in practice and to foster the adoption and dissemination of evidence-based treatment practices (see www.nida.nih.gov/ctn). By 2011, the CTN had completed 20 trials testing pharmacological, behavioral, and integrated treatment strategies involving more than 11,000 clients. For example, Ball et al. (2007) tested a brief motivational enhancement therapy (MET) treatment against a brief counseling as usual (CAU) control condition in a multisite randomized clinical
trial. A total of 461 outpatient clients were treated in five outpatient programs by 31 treatment practitioners. There were no retention differences between the two brief intervention conditions. The results indicated that both three-session treatment conditions produced decreases in substance use during the 4-week treatment phase. However, MET produced sustained reductions over the subsequent 12-week period compared to the CAU condition, which was associated with significant increases in substance use during this follow-up period. Further examination of the findings revealed that it was among primary alcohol users (rather than primary drug users) that MET produced more sustained substance use reductions. Overall, the results indicated that brief MET is an effective strategy for helping clients with substance abuse problems.

In another CTN study, Petry et al. (2005a) examined the efficacy of an abstinence-based contingency management intervention in eight community-based outpatient treatment programs. The 415 clients were cocaine or methamphetamine users who were randomly assigned to a usual care control condition or a usual care plus abstinence-based incentives treatment condition for a 3-month period. Those assigned to the treatment condition were provided with opportunities to win prizes for submitting drug-free urine samples. The lottery was set up such that those who achieved continuous abstinence increased their chances of winning prizes. Compared to clients in the control condition, those in the treatment condition (1) stayed in treatment significantly longer, (2) were more likely submit stimulant-free and alcohol-free samples, and (3) were more likely to achieve 4 to 12 weeks of continuous abstinence (Petry et al., 2005a). The study documents the viability and efficacy of using motivational incentives in community-based treatment settings (see www.nattc.org/pami for further information).

For some time, substance abuse treatment has been found to be cost-effective. For instance, the Rand Corporation (1994) found that for every dollar spent on treatment, $7 is saved on crime-related costs and lost workplace productivity. A subsequent Rand study found that treatment is more cost-effective than either conventional law enforcement or mandatory minimum drug sentences in reducing both cocaine consumption and related violence (Caulkins, Rydell, Schwabe, & Chiesa, 1997). More recently, standard outpatient therapy supplemented by computer-assisted training in cognitive-behavioral therapy was found to be cost-effective in the outpatient treatment of substance dependence (Olmstead, Ostrow, & Carroll, 2010). Another recent study found that a one-session motivational intervention designed to assist alcohol-involved youth treated in a hospital emergency department, costing $170–$173, was found to save $8,795 per quality-adjusted life year in societal costs (Neighbors, Barnett, Rohsenow, Colby, & Monti, 2010).
The outcomes of the major prevention and treatment studies described here represent a small number of the evidence-based practices that have been validated by researchers. Table 1.1 summarizes the lessons learned and future challenges in advancing evidence-based services in the substance abuse field. Though much remains to be learned, particularly about how to efficiently transfer research findings to community practice settings on a broad scale, it is clear that the approach and methods used in behavioral and social interventions makes an important difference. Thus, a major challenge facing the substance abuse field is implementing evidence-based practices (see Chapter 12) into preservice and inservice and training programs needed to prepare highly competent practitioners for the future.

**Chapter Summary**

Advances in scientific research and technology, recent and anticipated changes to health care policy, and economic instability at the state and federal levels necessitating funding restrictions, have all helped to shape contemporary views of addiction and the design of interventions. Although the relationship between empiricism or science and theory is tenuous, as West (2006) suggests, it is clear that this relationship is symbiotic. This means that social, economic, and political conditions influence perspectives of addiction and, in turn, views or theories of addiction influence these trends and events. A prominent example in U.S. history is National Prohibition. Fueled by a Christian crusade of moral reform, the Temperance movement quickly turned into a political force that changed the U.S. Constitution and had a powerful effect on conceptions of alcoholism and the resources used to address the problem.

Because addiction is a complex condition, there are multiple explanations for its etiology, prevention, and treatment. Three broad conceptions, traced through the past 200 years of U.S. history, can help professionals frame and further develop their understanding of addiction. These perspectives see addiction as (1) immoral conduct, (2) as disease, or as (3) maladaptive behavior. In the subsequent chapters of this book we discuss various theories of addiction associated with each of these three broad perspectives. In so doing, we consult pertinent research to alert practitioners to the possible shortcomings and strengths of these theories, and we provide recommendations for prevention and treatment. We hope that the theories presented herein serve as a useful guide for implementing effective intervention strategies in the prevention and treatment arenas.
# TABLE 1.1. Lessons Learned and Future Challenges in Evidence-Based Practice

<table>
<thead>
<tr>
<th>Substance abuse prevention</th>
<th>Substance abuse treatment</th>
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<tr>
<td><strong>Lessons learned</strong></td>
<td><strong>Lessons learned</strong></td>
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<tr>
<td>• Social influence model is the conceptual framework undergirding all evidence-based prevention programs (Midford, 2009).</td>
<td>• Persons who receive treatment have 2.5 times greater risk of death than community persons in treatment indicating that persons in treatment are an especially high-risk group (Scott et al., 2011).</td>
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<td>• Effective programs are interactive and teach skills (Botvin &amp; Griffin, 2007).</td>
<td>• Comprehensive treatment matching needs to services improves physical health, mental health, and vocational outcomes (Cao et al., 2011).</td>
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<tr>
<td>• Evidence-based programs deter and reduce substance use and abuse in youth, but the size of these positive effects are small (Midford, 2009).</td>
<td>• Substance abuse counselors are not adequately trained in evidence-based practice (Olmstead et al., 2010).</td>
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<tr>
<td>• Specific features or content of evidence-based programs responsible for producing positive prevention effects is not known (Foxcroft &amp; Tsertsavdze, 2011).</td>
<td>• Successful research–clinical partnerships for technology transfer are possible (Carroll et al., 2011).</td>
</tr>
<tr>
<td>• Prevention programs should be designed to reduce harms associated with substance abuse rather than focusing only on deterring initiation and reducing use (Midford, 2009; Ritter &amp; Cameron, 2006).</td>
<td>• Evidence-based services produce positive outcomes, but the size of these positive effects are small (Carroll et al., 2011).</td>
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<td>• Identify ways to disseminate evidence-based programs widely (Botvin &amp; Griffin, 2007).</td>
<td>• For stimulant abuse, contingency management interventions produce large short-term effects (Carroll et al., 2011).</td>
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<td>• Identify ways to train an expanded number of prevention practitioners to effectively implement and deliver evidence-based programs (Botvin &amp; Griffin, 2007).</td>
<td>• Behavioral treatments do not produce elevated rates of serious adverse events (Carroll et al., 2011).</td>
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<tr>
<td>• Identify specific program features and content responsible for producing positive program effects (Foxcroft &amp; Tsertsavdze, 2011).</td>
<td>• Evidence-based services are more costly than “treatment as usual” services (Carroll et al., 2011).</td>
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<tr>
<td>• Marijuana use and nonmedical use of psychotherapeutic prescription drugs are increasing among U.S. youth (Johnston et al., 2012).</td>
<td>• Expenditures on mental health and addiction treatment services increase by only 1% under behavioral health insurance parity provisions (McConnell et al., 2012).</td>
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<th><strong>Future challenges</strong></th>
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<td>• Identify ways to improve client retention in treatment (Carroll et al., 2011).</td>
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<td>• Internet-based treatment services may be an effective way to increase client retention, but more research is needed (Gainsbury &amp; Blaszczynski, 2011).</td>
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<td>• Addiction treatment research trials should adopt common outcome measures (Carroll et al., 2011).</td>
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<td>• Studies are needed that compare different evidence-based therapies (Carroll et al., 2011).</td>
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<td>• Much remains to be learned about helping “dual-diagnosis” clients (Carroll et al., 2011).</td>
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<td>• Identify ways to train an expanded number of counselors to effectively provide evidence-based services (Carroll et al., 2011; Olmstead et al., 2010).</td>
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<td>• Identify ways to increase access to treatment and improve outreach to persons who need treatment (Carroll et al., 2011).</td>
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<td>• Studies are needed that evaluate long-term treatment effects (Carroll et al., 2011).</td>
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1. How does theory contribute to the development of knowledge?
2. What is the function or purpose of theory?
3. What are the attributes and functions of good theory?
4. What have been the incongruent views of addiction in American history? To what extent has the conception of addiction changed over time?
5. What are the characteristics of the three views of addiction that make them distinctive and logically exclusive of one another? What are the advantages and disadvantages of each view?
6. How are the interests of different groups aligned with the different views of addiction?
7. Does the existing scientific evidence support advocating for substance abuse prevention? Does it support advocating for substance abuse treatment?
8. How do we know that prevention and treatment services are effective in addressing substance abuse problems?
In the United States today, the predominant model for understanding alcoholism and other addictions is the view that these disorders are diseases (Stolberg, 2006). This view is particularly strong within the treatment community and within self-help fellowships such as AA or Narcotics Anonymous (NA). The vast majority of treatment programs rely on the disease (or medical) models for a conceptual base; it shapes selection of treatment options and focuses the content of patient and family education. Thus, most treatment programs in this country require AA or NA attendance, advocate abstinence, teach that the disorder is a chronic condition, and so forth. To the credit of the treatment community, these efforts have lessened the stigma associated with addiction. Compared to 50 years ago, alcoholics and addicts today are less likely to be scorned and more likely to be offered help.

However, it should be recognized that controversy continues to surround the disease concept of addiction. Many people hold conflicting and contradictory views about the disease concept, whereas others do not think critically about the implications of various views of addiction. For example, does the presence of addiction diminish responsibility for criminal acts? Within the disease framework, it is logical to contend that the condition does diminish responsibility. However, legal scholars tend to dismiss claims of diminished responsibility based on disease and neuroscience considerations and contend that criminal acts, regardless of these determinants, deserve punishment (e.g., Morse, 2006). Some time ago, Herbert Fingarette (1988) maintained that the disease model is a myth that endures because it fulfills economic or personal needs of some groups (i.e., the medical
community and recovery groups, respectively). Fingarette (1988) strongly supported helping alcoholics and other addicts but believed that the “disease myth” limits treatment options for many needy individuals. Behavioral science researchers have questioned the validity of the models for many years (Peele, 1985), and others have long described such models as patently unscientific (e.g., Alexander, 1988).

Confusion and disagreement about the nature of addiction persist today. This becomes most evident following revelations of addiction problems among public figures, such as celebrities in the entertainment industry, politicians, or sports stars. Such disparate views are not likely to be resolved in the near future. To evaluate these arguments and counterarguments knowledgeably, it is essential to understand exactly what is meant by addiction as a disease. Only then can the utility of this model be intelligently weighed and articulated in a clear manner.

**Different Disease Conceptions**

Before the core concepts of the disease models are reviewed, it should be noted that there is not just one disease model. Over the past 30 years or so, a number of proponents of the models, though not necessarily in disagreement, have emphasized different elements. The differences can be striking. For instance, in the 1980s, V. E. Johnson’s (1980) description of the dynamics of alcoholism progression differed from that described by Milam and Ketcham (1983), and later Vaillant (1990) provided yet another perspective. Disease models differ with respect to the importance placed on physical, psychological, and spiritual factors in the etiology of alcoholism. These different emphases are probably related to the authors’ personal experience with alcoholism (i.e., whether or not they are recovering alcoholics) and their professional training (i.e., whether they are physicians, psychiatrists, or psychologists).

Peele (1996) provided a useful distinction for thinking about the different disease models that remains highly relevant. He suggests that there are relatively distinct *susceptibility* and *exposure* constructions. The susceptibility variant emphasizes that genetic factors play an important role in the development of substance dependence. These factors influence the individual’s *vulnerability* to the disorders. In contrast, the exposure position holds that chemicals and their actions on the brain are the primary causes of addiction. This position asserts that addiction is a *brain disease*. Risk for the disease is determined by the extent to which the brain is exposed to drugs of abuse. These two disease models are not in conflict with one another. They simply represent different emphases. Each is discussed in detail in this chapter.
Also, it should be noted that the disease model of AA differs somewhat from that espoused by the medical community. The disease model as emphasized by AA stresses the importance of spirituality in the etiology of, and recovery from, alcoholism. Indeed, many AA members report that they are recovering from a “spiritual disease.” Though many outsiders to AA consider “spiritual disease” an oxymoron (i.e., a figure of speech that is a contradiction in terms), many recovering persons feel that it accurately describes their drinking problems. AA encourages its members to find a “Higher Power” and to turn their will and life over to a supernatural being. These spiritual conversions are considered crucial to recovery.

In contrast, the medical community tends to point to the significance of biological factors in addiction. Physicians often emphasize the role of genetic susceptibilities, increasing tolerance, withdrawal symptoms, liver disease, brain abnormalities, and so forth. Of course, this biomedical approach is consistent with their training. It is not that they ignore spiritual elements; rather, they tend to give such factors less weight than, for example, laboratory test results.

There is another difference between the disease model of AA and that of the medical community. It is a subtle difference, and it is closely related to the dichotomy of spirituality versus science. In AA, members often use the disease concept in a metaphorical sense; that is, they describe their alcohol problems as being “like” a disease. In many cases, recovering individuals do not intend (or perhaps even care) to convey that they literally have a disease. They simply are attempting to express that the experience of compulsive chemical use feels like having a disease. It is characterized by feelings of loss of control and hopelessness, conditions familiar to the victims of other diseases (cancer, heart disease, emphysema, etc.).

Most often, physicians do not use the term disease as a metaphor. They tend to use the term in a literal sense—that is, “Alcoholism is a disease.” Consider the following statement by a physician who directed a chemical dependency rehabilitation program some time ago:

> Whether you become an alcoholic or not depends on genetic predisposition. We know the reason the compulsivity exists is because of a change in the endorphin and cephalin systems in a primitive portion of the brain. The reason for this disturbance in the biochemistry of the primitive brain is a predisposition. Nobody talks any longer about becoming an alcoholic. You don’t become an alcoholic—you are born an alcoholic. (Talbott, 1989, p. 57)

As this discussion illustrates, the disease models are not a unitary framework for understanding addiction. However, despite nuances and ambiguities, certain concepts have traditionally represented the disease model of
addiction. Let us examine these concepts in light of the current scientific literature.

**TOLERANCE AND WITHDRAWAL**

The two clinical features of substance dependence that are commonly viewed as disease symptoms are tolerance and withdrawal. Drug tolerance is the need to use increasingly greater amounts of a substance to obtain the desired effect. With regular use, tolerance develops to most of the commonly abused psychoactive drugs, including alcohol, cocaine, heroin, LSD, and so on. Though some substance users may initially take pride in their ability to consume large amounts of a drug, increasing tolerance is regarded as an early symptom of dependence (Wessel, Martino-McAllister, & Gallow, 2009).

Acute drug withdrawal results when blood or body tissue concentrations of a substance decline following a period of prolonged heavy use (American Psychiatric Association, 2000). The duration, symptoms, and severity of withdrawal vary across drugs and according to the amount of the substance being consumed prior to cessation (Crevecoeur, 2009). Alcohol withdrawal, in particular, varies significantly in both its symptoms and severity (McKeon, Frye, & Delanty, 2008). Clinical manifestations in alcohol withdrawal can range from insomnia to severe conditions such as delirium tremens (DTs) and possibly even death.

Prolonged use of most psychoactive drugs can produce a withdrawal syndrome (Crevecoeur, 2009). These include opiates, heroin, barbiturates, cocaine, and a variety of other substances. The exceptions are several of the commonly abused hallucinogens (LSD, psilocybin, mescaline). The unpleasant symptoms of withdrawal provide motivation for the person to self-administer more of the drug to relieve or even to avoid discomfort.

The more contemporary view of addiction is that tolerance and withdrawal are not required for the diagnosis of the condition (American Psychiatric Association, 2013). Tolerance and withdrawal are but 2 of the possible diagnostic criteria that need to be considered within the past 12-month period. The diminished emphasis placed on tolerance and withdrawal has occurred because a compelling body of research has shown that in both clinical and general population samples, substance abuse and substance dependence are not distinct disorders. Instead, their criteria are intermingled and exist on a single severity continuum (American Psychiatric Association, 2013). In many cases, the presence of withdrawal represents a more severe form of addiction. However, withdrawal symptoms (and tolerance) are not necessary for addiction to be diagnosed by a clinical practitioner.
Genetic Origins of Addiction: The Susceptibility Model

There is compelling evidence of the familial transmission of substance use disorders (e.g., Nurnberger et al., 2004; Rhee et al., 2003). This familial transmission is thought to occur via both genetic and psychosocial pathways. The genetic factors may involve individual differences in drug metabolism, tolerance, sensitivity, and/or side effects (Kimura & Higuchi, 2011; Merikangas et al., 1998). The accompanying psychosocial (or environmental) pathways are numerous and may include inadequate parental monitoring and supervision, dysfunctional parent–child modeling processes, marital discord, family stress, child abuse, and so on (Latendresse et al., 2008; Maniglio, 2011; Patterson, 1996). Thus, the clustering of substance use in families is determined by the confluence of genetic and environmental variables. In addition, there is some evidence indicating that substance-specific genetic and environmental risk factors may not exist (Kendler, Jacobson, Prescott, & Neale, 2003). Instead, the familial transmission of addiction susceptibility may extend across commonly abused drugs.

As noted in Chapter 1, the idea that alcoholism, in particular, has genetic origins can be traced back to 19th century (Levine, 1978). More recently, scientists also have examined the role of genetic influence on other drugs of abuse. Interest in the general field of behavioral genetics has grown for three reasons. First, there is a large body of research showing that animal behavior is influenced by heredity. Second, the methodologically sound twin studies conducted since the 1980s have consistently found that genes contribute to the development of complex human disorders, such as addiction. Third, and perhaps of greatest importance, there is now widespread recognition that genes and the environment jointly determine human behavior—particularly addictive behavior.

Behavioral Genetics of Substance Abuse and Addiction

The study of genetics deals with characteristics that are transmitted from parents to their offspring via biological mechanisms. These characteristics are not acquired as a result of learning, modeling, socialization, or other postnatal experiences; they are hereditary or inborn. Such human characteristics as eye color and blood type are determined by genetic factors.

Genes are the basic structural units of heredity. Each person shares 50% of the genes of each parent in a unique arrangement that is different from both parents. This assemblage of genes is the person’s genotype. During both pre- and postnatal development, the individual is exposed to
a variety of environmental influences. This interaction between genotype and environment generates an enormous number of individual traits and characteristics, referred to as the person’s phenotype. The phenotype, then, is the outcome of the interaction between genes and environment. It should be noted that fetal exposure to alcohol or other drugs is an environmental influence on the phenotype; fetal alcohol syndrome and related conditions among newborns are not genetic disorders.

During the last 20 years, advances made in the field of behavioral genetics have generated evidence to support claims that heredity plays a role in a wide range of human behavior. As noted by Weiss (2006), the popular press sometimes misinterprets or distorts research findings with superficial reports about an “intelligence gene” (Nisbett et al., 2012) and a “violence gene” (Guo, Roettger, & Cai, 2008). Too often, the magnitude of the genetic influence is exaggerated or relevant environmental factors are unduly minimized, often as a result of ignorance about the interactive nature of each (Wilde et al., 2011). Among laypeople, this lack of understanding also has fueled the mistaken belief in “genetic determinism.” Clearly, for complex human traits, genes do not determine destiny but shape parameters of risk as well as protection. For some time, behavioral genetics researchers have noted that individual genetic propensities and environmental conditions influence one another in a reciprocal fashion (Mann, 1994). The important point is that genes operate in a probabilistic manner in addictive behavior (Goldman & Bergen, 1998; Lee et al., 2011). They are not deterministic factors.

Researchers from different disciplines acknowledge that genetic factors play a role in the development of a wide range of the substance use disorders. For example, twin studies have yielded evidence showing that genetic traits influence susceptibility to nicotine dependence (Lyons et al., 2008), alcoholism (Heath, Jardine, & Martin, 1989; Kaprio et al., 1987; Kendler et al., 1992; McGue, Pickens, & Svikis, 1992), and other forms of drug abuse, including heroin, marijuana, stimulants, sedatives, and psychedelics (Tsuang et al., 1998). Candidate gene studies have found that nicotine metabolism and smoking behavior are influenced by genetic polymorphisms (Bloom et al., 2011; Han, Joe, Na, & Lee, 2008; Lerman et al., 1999; Pianezza, Sellers, & Tyndale, 1998; Swan et al., 2007; Watanabe et al., 2011). Research has demonstrated that genetic factors are involved in ethanol metabolism and alcoholism (Li, 2000; Peng & Yin, 2009; Preuss et al., 2011). Genome-wide linkage studies have identified chromosomal regions containing a number of genes that influence alcoholism risk and related phenotypes, including ADH4 (Edenberg et al., 2006), GABA A2 (Dick et al., 2006; Edenberg et al., 2004), CHRM2 (Dick et al., 2006; Wang et al., 2004), GABRG3 (Dick et al., 2004), TAS2R16 (Hinrichs et al., 2006; Wang et al., 2007), SNCA (Foroud et al., 2007), OPRK1 (Xuei
et al., 2006), and PDYN (Xuei et al., 2006). Interestingly, research has found that genetic traits not only increase risk for substance use disorders, but there likely exist protective genetic traits as well.

**Gene–Environment Interactions in the Development of Alcohol and Drug Abuse**

During adolescence and young adulthood, the relative influence of genetic and environmental factors affecting psychoactive drug use changes with increasing age (Kendler, Schmitt, Aggen, & Prescott, 2008; Rose & Dick, 2007). The *initiation* of psychoactive drug use is heavily influenced by familial and social factors (Rose, Dick, Viken, Pulkkinen, & Kaprio, 2001b), whereas the *maintenance* of established patterns of use in early and middle adulthood appears to be more strongly determined by genetic factors (Rose, Dick, Viken, & Kaprio, 2001a). In a longitudinal twin study, for instance, Rose and colleagues (2001a) found that by 18.5 years of age, as much as 50% of the variation in drinking (alcohol) frequency might be accounted for by genetic factors.

However, these estimates fail to adequately capture the reciprocal nature of gene–environment interaction that is at play in the addiction process. Rose and Dick (2007) contend that people are active agents who seek specific risk and protective environments to match their proclivities and appetites, thereby actively creating the conditions and experiences that lead to addiction. Genotype essentially modulates an individual’s *responsiveness* to various “environmental pathogens” (or risk factors). In behavioral genetics research, it is widely believed that large pools of environmental risk factors exist for alcohol and other drug abuse (Heath & Nelson, 2002). These risks may include adverse family conditions, stressful life events, drug-using peer affiliations, poor economic conditions, etc.

Nevertheless, considerable disagreement remains today about the relative contributions of “nature” and “nurture,” and the nature of the relationships involving these two sets of influences on human behavior (e.g., Beckwith, 2006; Turkheimer, 2006; Wahlsten, 2012; Young-Wolff et al., 2011a). Over the past 20 years or so, investigators have complained that methodological limitations and inconsistent replication of findings pose enormous challenges to drawing firm conclusions about the relative contributions of genetic and environmental factors, as well as the effect sizes of gene–environment interactions (Lester, 1988; Searles, 1988; Walters, 2002). One recent, comprehensive review of twin, adoption, and molecular genetic studies concluded that at least with respect to alcohol outcomes, the influence of genetic factors can vary a great deal across populations and environmental settings (Young-Wolff et al., 2011b). Another review of the behavioral genetics literature concluded that “a major reason for the
difficulties in obtaining conclusive results in this field is that researchers have not integrated more fully into their studies the analysis of familial, cultural, and social influences on human behavior and human aptitudes” (Beckwith, 2006, p. 94). Indeed, a persistent theme found in reviews of the behavioral genetics literature is that realistic assessments of how environments might affect human aptitude and behaviors, and how they may truly interact with genetic traits, are largely absent at this time (Dick, 2011), and may never be realized due to the daunting etiological complexities (Turkheimer, 2006).

**The Social Impact of Genetic Research**

The information and technology gained from human genetic research are having a profound social impact. Stigmatization and discrimination based on hereditary characteristics and other misuses and misinterpretations of genetic information are significant social and public policy concerns (Hoge & Appelbaum, 2012; Williams et al., 2010). Predictive genetic screening of complex traits, such as addiction susceptibility, raises conceptual and philosophical questions about personal responsibility for one’s conduct, future reproductive decisions, genetic determinism and one’s health, and the definition of “normal” and “abnormal” behavior. Furthermore, the specter of personalized medicine, including pharmacogenomics testing, could bring forth susceptibility information that patients and their families would need considerable assistance to understand and act on (Shields, 2011; Sturgess, George, Kennedy, Heinz, & Müller, 2011). Therefore, the psychosocial aspects of genetic technology in disease prevention and treatment would require evaluation before testing is introduced into medical practice. In the substance abuse prevention and treatment fields, an important and challenging role for practitioners will be to educate clients and their families about genetic test technology so that they make informed decisions about testing.

In general, relatively little is known about whether at-risk individuals would want to know their risk status based on their personal genetic profile. The process involved in arriving at a decision for or against testing is complex and not well understood at this time. Also, compared to other disorders, utilization of genetic screening for addiction susceptibilities may have unique features in that persons at highest risk for developing smoking, drinking, and drug use problems may be those least likely to seek testing (Smerecnik et al., 2011; Thombs, Mahoney, & Olds, 1998).

**Genetic Risk Summary**

The substance abuse practitioner should understand six essential points about the genetics of addictive behavior:
1. Genes and the environment jointly determine addiction. As research on the genetics of addiction advances, one of the most impressive findings to emerge is the recognition that environmental factors play a substantial role (Kendler et al., 2008; Verweij et al., 2010).

2. The inherited characteristic is not a disease but a predisposition or susceptibility. In other words, addiction is not an inherited disease caused by a variant in a single gene, such as in the case of cystic fibrosis or Huntington’s disease. Rather, addiction is a complex disorder caused by a variety of genetic and environmental variables. Genetic factors either increase or decrease risk for developing the disorder. It may be found that some gene mutations actually provide protection against alcoholism and some drug addictions.

3. Among persons with addiction problems, a heterogeneous contribution of genes and environment influences individual patterns of substance use. In the future, it may be discovered that there are subtypes within classes of drug dependence (e.g., subtypes of alcoholism or opioid use), ranging from those that are largely genetic in origin, on one extreme, to those determined entirely by the environment, on the other end of the spectrum (Chan et al., 2011; Johnson, 2010). Subtypes also may be based on the presence or absence of antisocial personality traits and age of onset (Chen et al., 2011).

4. Recognizing the role of genetic risk factors does not require that alcoholism and other drug dependencies be defined as disease states. A wide range of human traits are influenced by genes that, by social convention, are not considered diseases.

5. Research on the genetics of addiction is important because it may lead to more effective ways to prevent and treat the problem of addiction. For example, a genetic test for alcoholism could identify children who are at risk for developing the disorder in the future. Such a test also could be used in the assessment and diagnosis of alcoholic clients and as motivation enhancement for ambivalent clients.

6. In the future, genetic testing will likely gain acceptance in the general population. Individuals will increasingly need assistance with genetic testing decisions and how to interpret test results. Individuals may respond differently to positive test results depending on their perceived capability to change their drinking or drug use behaviors. For instance, a positive test result could exacerbate a person’s alcohol problems by inducing a sense of futility and hopelessness. On the other hand, some might interpret a negative test result to mean that they can continue to drink with impunity. Other client responses probably exist as well. At this point, we can only speculate on how the results of a genetic test for susceptibility to alcohol or drug dependence would be used by individuals.
**Effects of Drugs on Brain Structure and Function: The Exposure Model**

**Cell Activity of the Human Brain**

Cells of the brain are known as *neurons*. Figure 2.1 illustrates the structural features of a presynaptic and postsynaptic neuron. It should be noted that this figure depicts only two neurons and thus is quite simplistic. In the brain, each neuron forms synapses with many other neurons and, in turn, receives synaptic connections from an equally large number of neurons.

The brain’s signaling functions are primarily conducted by the neurons of the brain. There are approximately 86 billion neurons in the human brain (Azevedo et al., 2009) that provide the capacity for sensation, movement, language, thought, and emotion. Though neurons in different parts of the brain vary in size, shape, and electrical properties, most share the common features that appear in Figure 2.1. The cell body containing the nucleus holds the cell’s genetic information. Dendrites are the tree-like projections that integrate information from other neurons. Many neurons have a single axon that conducts electrical signals away from the cell body. At the end of each axon, branches terminate at a microscopic, fluid-filled gap known as the *synapse*. Thus, this electrochemical system consists of neurons that are separated by very small synaptic gaps (see Figure 2.2).

Vesicles located at presynaptic axon terminals release brain chemicals, known as *neurotransmitters*, into the synapse in response to electrical stimuli. Homeostatic mechanisms attempt to maintain the appropriate concentration or balance of particular neurotransmitters in the synapse. One

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**Figure 2.1.** Structural features of presynaptic and postsynaptic neurons. This schematic drawing depicts the major components of neuronal structure, including the cell body, nucleus, dendritic trees, and synaptic connections. From National Institute on Alcohol Abuse and Alcoholism (1997).
mechanism involves the action of enzymes that break down available neurotransmitters. (*Enzymes* are specialized proteins that serve as a catalyst for a specific chemical reaction.) When the concentration of a neurotransmitter becomes too great, enzymatic activity in the synapse increases to reduce it. A second mechanism is known as reuptake. Here, presynaptic “pumps” draw neurotransmitter molecules back into vesicles located at presynaptic terminals. This reabsorption process intensifies when the concentration of neurotransmitter in the synapse becomes too great. In tandem, the processes of enzymatic activity and reuptake work to maintain optimal neurotransmitter concentration. (Some of the ways that drugs of abuse alter normal brain chemistry are described later.)

Postsynaptic axon terminals (see Figure 2.2) receive and respond to the particular neurotransmitter they are designed to operate. There are target areas for the neurotransmitter molecule at the postsynaptic terminals. These target areas are known as *receptor sites* or just *receptors*. Typically, each neurotransmitter has an affinity for a specific type of receptor, and their relationship has often been described as akin to that of a key (the neurotransmitter) to its lock (the receptor). In some cases, a receptor may recognize more than one chemical. Nevertheless, the design of the receptor is such that it usually responds only to the specific molecular structure of its neurotransmitter. The postsynaptic terminals respond to the diffusion of neurotransmitters across the synapse by sending an electrical signal toward their cell body. In this way, the neurons “communicate” or relay information to one another in a highly rapid manner.

**FIGURE 2.2.** A typical synapse in the human brain showing the presynaptic and postsynaptic axon terminals of two neurons. Adapted from the News Image Bank of the National Institutes of Health (available at [https://imagebank.nih.gov](https://imagebank.nih.gov)).
Mesolimbic Dopamine Pathway: The Brain’s Reward Center

Many drugs stimulate reward circuitry in the brain known as the mesolimbic dopamine pathway (Lingford-Hughes, Watson, Kalk, & Reid, 2010). This pathway extends through several regions of the brain and is comprised of a system of neurons that operates primarily on a type of neurotransmitter known as dopamine. From an evolutionary perspective, the forces of natural selection are thought to have fostered development of this reward circuitry to reinforce those behaviors most necessary for survival, such as eating food and having sex. The mesolimbic system can be considered the neurobiological substrate that produces pleasure. Unfortunately, abuse drugs also commonly stimulate reward centers in this system. Thus, the mesolimbic dopamine system is implicated in addiction. Other chemical pathways, using serotonin and glutamate, also are implicated in the reinforcing effects of particular drugs, but these are not reviewed here.

As can be seen in Figure 2.3, the mesolimbic system arises in the ventral tegmental area in the brainstem and projects to the nucleus accumbens in the ventral striatum and the frontal cortex. The system then consists of the nucleus accumbens, frontal cortex, and the amygdala. The nucleus

![Image of mesolimbic dopamine pathway](https://imagebank.nih.gov)

**FIGURE 2.3.** The mesolimbic pathway transmits dopamine from the ventral tegmental area to other regions of the brain. This pathway is activated by many drugs of abuse and by some non-substance-related behaviors such as pathological gambling. Adapted from the News Image Bank of the National Institutes of Health (available at https://imagebank.nih.gov).
accumbens is implicated in the expectation and pursuit of rewards, such as the “high” accompanying drug use. The frontal cortex supports the human abilities to evaluate stimuli, weigh the pleasure produced by an action, and activate impulse control. The amygdala is responsive to the intensity of pleasure and pain, and is involved in the human ability to associate pleasurable experiences with neutral environmental stimuli.

Elevated levels of dopamine in the nucleus accumbens are associated with the rewarding effects of all common drugs of abuse, with the possible exception of the benzodiazepines (Koob & Le Moal, 2001). In the ventral striatum, the euphoric effects of stimulants are associated with dopamine increases (Volkow, Fowler, & Wang, 2003). Elevated dopamine levels have also been observed in relation to nicotine and alcohol use, but these findings are not consistent (Montgomery et al., 2007; Boileau et al., 2003).

In nonaddicts, repeated drug exposure is associated with elevated levels of dopamine, which make the mesolimbic reward pathway more sensitive, that is, effective at producing euphoria (Boileau et al., 2007). However, in addiction, decreased levels of dopamine are observed over time, making the mesolimbic system less sensitive, and thereby producing deficient rewards. These changes in sensitization may be the neurobiological basis for addicts “wanting,” but no longer “liking,” the effects of a drug (Blum, Gardner, Oscar-Berman, & Gold, 2012).

The biological purpose of the mesolimbic system probably is to mediate reward and pleasure and to create motivation to engage in life-sustaining tasks (e.g., eating and reproduction). However, it should be noted that motivation has both cognitive and emotional dimensions. Cognitive expectations in the form of anticipated reinforcement arise from previous life experiences and influence motivation. It is likely not an accident that our expectations of future events are formed in the prefrontal cortex, which is linked to the nucleus accumbens. Previous drug “highs” may be preserved as memories, and they may motivate the user to engage in repeated self-administration of a euphoric substance. Furthermore, as this region of the brain becomes increasingly exposed to excess dopamine during a period of substance abuse, its natural production may decline, resulting in fewer and less sensitive receptors for the neurotransmitter. This is one mechanism for the development of drug tolerance.

As a result of these changes to the brain, the addicted person gradually relies more and more on the drug as the source of gratification and pleasure. In this process, addicts tend to develop the perception that they have an inability to regulate their desire for the drug (i.e., perceived loss of control). As interest in nondrug activities diminishes, involvement in drug-related behaviors increases. Drug seeking, intoxication, and recovering from the deleterious effects (e.g., hangover) typically become the central activities in the addict’s life.
Addiction as a Primary Disease

In primary care medicine, addiction, especially alcoholism, is still described as a “primary disease” (Carr, 2011); that is, it is not the result of another condition. This is usually taken to mean that the disease is not caused by heavy drinking or drug use, stress, or psychiatric disorders; rather, it is thought to be the cause of these very conditions. In other words, heavy drinking/drug use, stress, psychiatric disorders, and so forth are secondary symptoms or manifestations of an underlying disease process known as addiction. If the drinking or drug use is stopped, it is believed that the symptoms will, for the most part, disappear (Carr, 2011).

This view is contrary to popular conceptions of addiction, especially of alcoholism. To take alcoholism as an example, many laypeople (even those who view alcoholism as a disease) feel that alcoholism results from abusive drinking, which in turn stems from irresponsibility, stress, or emotional problems. The disease models, properly understood, dispute these ideas (Carr, 2011). The models propose that alcoholics are not responsible for contracting their disease; the disease itself causes or drives the heavy drinking. Furthermore, a long-held belief in some recovery circles is that those drinkers who lack genetic susceptibility to the disease cannot drink themselves into alcoholism (Milam & Ketcham, 1983). This belief is consistent with emerging research indicating that genetic factors may protect some individuals from alcohol dependence (Webb et al., 2011).

However, various lines of research have developed data that contradict the primary-disease concept for all alcoholics. For example, in clinical research circles it has become widely accepted that multiple types of alcoholism exist (Johnson, 2010). Some early-onset types may be strongly associated with genetic factors, whereas late-onset forms may be triggered by stressful life events and problems in living. Furthermore, individuals with alcohol and/or drug problems fulfill criteria for antisocial personality disorder at a much higher rate than what would be expected by chance (Fenton et al., 2012; Grant et al., 2006b; Schuckit, 1989). This finding suggests that severe antisocial life problems may cause alcohol and drug addiction in some.

Findings such as these suggest that the causes of addiction are multiple and mediated by both genetic and environmental factors. For each person with an addiction, there is probably a relatively unique combination of forces that led to the development of his or her problem. Some cases may be strongly influenced by genetic factors; others may be mediated solely by environmental ones. In the future, the concept of “primary” disease is likely to be further restricted as various types of addictive disorders continue to
be identified and their comorbidity with other psychiatric disorders is recognized to be a common phenomenon (see Chapter 4).

**Loss of Control**

Loss of control is a longstanding and central premise of the traditional disease model of alcoholism. Indeed, Step 1 of AA’s “12 steps” is an admission that alcoholics are “powerless over alcohol” (Alcoholics Anonymous, 1981). It is asserted that the alcoholic’s loss of control stems from some unknown defect or abnormality. This abnormality is described as a compulsion or an intense craving (Milkman & Sunderwirth, 1987). More rigorous examinations of drug urges and cravings have been conducted in cognitive psychology (see Chapter 7).

In the traditional disease model, the exact nature of the abnormal craving for alcohol is not claimed to be well understood, but the “Big Book” of AA teaches as follows: “We are equally positive that once he takes any alcohol whatever into his system, something happens, both in the bodily and mental sense, which makes it virtually impossible for him to stop. The experience of any alcoholic will abundantly confirm this” (Alcoholics Anonymous, 1976, pp. 22–23). As this passage indicates, the notion of loss of control is consistent with the subjective experience of many alcoholics. Why, then, do so many of the leading alcoholism researchers reject the concept?

**Logical Inconsistency**

Some time ago, Fingarette (1988), a philosopher, pointed out that the classic loss-of-control concept is illogical. This concept maintains that after a minimal amount of alcohol enters the body, all ability to control drinking disappears. If this were actually the case, an alcoholic would have no desire, cravings, or compulsion to drink when sober. Abstention from drinking and recovery from alcoholism would actually be quite easy. Fingarette (1988) observes:

> If the loss of control is triggered by the first drink, then the only hope for an alcoholic is to refrain from that first drink, that is, total abstention. But if loss of control is triggered only after the first drink, and not before, why should the alcoholic have any special difficulty mustering the self-control to simply avoid that first drink? Why should abstinence pose any special problem? (p. 34)

Long ago, practitioners recognized that many alcoholics would terminate use of disulfiram (Antabuse) in order to resume drinking several days later (Merry, 1966). Behavior of this type suggests that the loss-of-control
The Disease Models

construct is invalid because at least among some alcoholics, the intention to drink is formed prior to any consumption. In such situations, binge drinking may not be impulsive at all but actually planned for a future point in time. Why is the hypothesis maintained that control is lost after consumption has begun? One can only speculate, but it may be related to the alcoholic’s need to blame the drug (alcohol) or some unknown biological mechanism. If the hypothesis did not first require alcohol to be introduced into the body, the only possible explanations would be psychological or behavioral in nature. Proponents of the traditional disease model typically prefer to avoid nonbiological explanations.

Laboratory Experiments

For more than 30 years, evidence has shown that chronic alcoholics (including those who have previously experienced alcohol withdrawal sickness) can drink in a controlled manner in laboratory settings (Pattison, Sobell, & Sobell, 1977). A 1977 review of the alcoholism research literature found that in almost 60 laboratory studies, some involving experiments lasting as long as 2 months, alcoholics demonstrated no loss of control (Pattison et al., 1977). Fingarette (1988) points out that the amount of alcohol consumed by alcoholics is a function of the “costs and benefits perceived by the drinker— an observation that radically contradicts the idea of some overpowering inner drive that completely overwhelms all reason or choice” (p. 36). The contingencies (i.e., rewards and punishers) attached to drinking (as perceived by the drinker) appear to control the amount consumed. The arrangement of contingencies in three different studies involving alcoholics (Cohen, Liebson, Fallace, & Speers, 1971b; Bigelow & Liebson, 1972; Cohen, Liebson, Fallace, & Allen, 1971a) was summarized by Fingarette (1988):

One research team was able, by offering small payments, to get alcoholics to voluntarily abstain from drink even though drink was available, or to moderate their drinking voluntarily even after an initial “priming dose” of liquor had been consumed. (The larger the “priming dose,” the less moderate the subsequent drinking, until a modest increase in the amount of payment offered prompted a resumption of moderation.) In another experiment, drinkers were willing to do a limited amount of boring work (pushing a lever) in order to earn a drink, but when the “cost” of a drink rose (i.e., more lever pushing was asked of them) they were unwilling to “pay” the higher price. Still another experiment allowed alcoholic patients access to up to a fifth of liquor, but subjects were told that if they drank more than five ounces they would be removed from the pleasant social environment they were in. Result: Most of the time subjects limited themselves to moderate drinking. (p. 36)
A common counterargument to these findings is that the drinking occurred in artificial or unnatural drinking environments (i.e., hospital units or laboratories), and thus the data have little relevance for understanding typical alcoholic drinking. In other words, drinking in a clinic under the observation of investigators radically affects an alcoholic’s self-control and drinking behavior. This counterargument is faulty and does not adequately address deficiencies in the loss-of-control hypothesis. If it is argued that the social setting and/or observation by others affects alcoholic drinking, it cannot be argued that loss of control stems from the effects of alcohol or some biological abnormality. Thus, even though the experimental settings may have been anomalous, the findings indicate that frequency and quantity of drinking among alcoholics are not determined solely, or even in a significant way, by ethanol or endogenous mechanisms.

**Addiction as a Progressive Disease**

In the classic disease model, addiction is believed to follow a “progressive” course (Talbott, 1989). That is, if alcoholics or addicts continue to engage in substance abuse, their condition will deteriorate further and further. Marital, family, work, and medical problems only worsen over time; they do not get better with continued use. Life becomes increasingly unmanageable.

V. E. Johnson (1980) put forth a widely adopted model of alcoholism that described the progression of alcoholism in terms of the alcoholic’s emotional relationship to the drug. His scheme relied on four phases. The first two phases represent “normal” drinking, whereas the third and fourth are typical of alcoholic drinking. Johnson identified these four phases as (1) learning the mood swing, (2) seeking the mood swing, (3) harmful dependence, and (4) drinking to feel normal.

In Phase 1, learning the mood swing, the drinker is initiated into the use of alcohol. In our culture, it usually occurs at a relatively young age. The drinking is associated with pleasant feelings. There are no emotional “costs” as a result of the consumption. In Phase 2, seeking the mood swing, the drinker purposely drinks to obtain euphoria. The amount of alcohol increases as intoxication becomes desired; however, in this phase, there are still no significant emotional costs or adverse consequences. In Phase 3, harmful dependence, an “invisible line” is crossed (V. E. Johnson, 1980, p. 15). In this first stage of alcoholic drinking, the individual still finds euphoria in excessive consumption, but there is a price to pay. Following each drinking episode, there are consequences (e.g., hangovers, damaged relationships, arrests for driving while intoxicated). Despite such problems, the alcoholic continues to drink excessively. In the last phase, the alcoholic’s condition has deteriorated to the point that he or she must drink just to feel “normal.” When the alcoholic is sober, he or she is overwhelmed
by feelings of remorse, guilt, shame, and anxiety (V. E. Johnson, 1980); the natural tendency is to drink to block out these feelings. V. E. Johnson (1980) describes the alcoholic in this last phase as at risk for premature death.

At about the same time, Milam and Ketcham (1983) described the progression of alcoholism in somewhat different terms. Their scheme focused more on physiological deterioration than on the emotional relationship with the chemical. It consists of three stages: (1) the adaptive stage, (2) the dependent stage, and (3) deterioration. The chief characteristic in the adaptive stage is increasing tolerance to the drug. Alcoholics believe that they are blessed to have such a capacity for alcohol because they experience no negative symptoms. They typically do not appear to others to be grossly intoxicated; thus, there is no apparent behavioral impairment. However, physiological changes associated with increasing tolerance are occurring, but the drinker is not aware of these changes (Milam & Ketcham, 1983).

The chief characteristic of the dependent stage is physical withdrawal. These symptoms build gradually during this stage. Initially, they are not recognized as withdrawal symptoms but are confused with symptoms of a hangover. To manage these symptoms “effectively,” many alcoholics fall into a “maintenance drinking” pattern in which they drink relatively small amounts at frequent intervals to avoid withdrawal sickness. They usually avoid gross intoxication out of a fear of having their problem exposed to others (Milam & Ketcham, 1983).

The last stage, deterioration, is characterized by major medical problems. Various organs are damaged as a result of long-term heavy drinking. In addition to the liver, the brain, the gastrointestinal tract, the pancreas, and even the heart may be affected. These pathological organ changes will cause death if an alcoholic does not receive treatment (Milam & Ketcham, 1983).

V. E. Johnson’s (1980) and Milam and Ketcham’s (1983) cogent descriptions of the progression of alcoholism (and possibly other addictions) were not consistent with epidemiological findings, however. Studies in the 1980s and 1990s that examined large populations, rather than just those alcoholics who present themselves for treatment, indicated that alcoholism and other addictions do not follow a predictable sequence of stages in which the user inevitably deteriorates (National Institute on Alcohol Abuse and Alcoholism, 1990). On the contrary, so-called natural remission (disappearance of an alcohol problem without treatment) is not uncommon among men as they move into older age categories (Fillmore, 1987a). Furthermore, it appears that among males there is a relationship between dependence problems and alcohol-related social problems, on the one hand, and age, on the other. Generally, by the time men reach their 40s, alcohol problems have declined; in many cases, such men still drink, but more moderately (Fillmore & Midanik, 1984). In women, alcohol problems appear to peak in
the 30s (compared to the 20s for men). Also, women are more likely than men to display considerably higher rates of remission across all decades of life (Fillmore, 1987b).

Even among clinical populations (treated alcoholics and problem drinkers), evidence appeared to dispute the conception of alcoholism as a progressive disorder. For example, in Norway, Skog and Duckert (1993) tracked the drinking behavior of 182 alcoholics (men and women) over a 4½-year period following inpatient treatment, and that of 135 problem drinkers (men and women) over a 2¼-year period following outpatient treatment. All clients were assessed by a standardized alcoholism assessment instrument and by a personal interview that focused on patterns of drinking during the previous year. In the outpatient group, blood samples were collected and analyzed for a liver enzyme (gamma-glutamyl transferase, or GGT) that is responsive to the presence of alcohol. This was done to determine whether self-reported light drinking was actually the result of consistent underreporting (i.e., minimizing alcohol intake). The data analyses included the calculation of one-step transition matrices that estimated the likelihood that a participant would move from one level of drinking to another between two successive follow-up assessments.

Skog and Duckert (1993) found that 1 year following treatment, only 11% of the inpatients and 5% of the outpatients were abstinent. However, treatment appeared to have a substantial positive impact on the drinking practices of both client groups. At each follow-up, self-reported alcohol intake was considerably lower than at admission to treatment. This was true for both groups of clients. Among the outpatient group, liver enzyme levels were consistent with self-report intake—making it unlikely that the results (at least for this group) were biased by underreporting.

Though there was a good deal of change in the drinking patterns of individuals from one assessment interval to the next, the investigators could find no strong or clear trends for the groups as a whole (Skog & Duckert, 1993). Some participants were increasing their drinking, whereas a nearly equal number was consuming less. When change did occur, it most likely was to a “neighboring” consumption category (e.g., from abstinence to moderation). According to the investigators, “Very large and dramatic jumps are, in effect, unlikely. Hence, the data suggest that processes of change are reasonably smooth” (Skog & Duckert, 1993, p. 183). Furthermore, there was no evidence of loss of control or heavy consumption following periods of abstinence or light drinking, and heavy drinkers tended to gradually decrease their intake rather than quit abruptly. None of these findings fit with the conception of a “progressive disease.” Skog and Duckert (1993) concluded that among treated clients, “the observed pattern of change more resembles an indeterministic (or stochastic) process than a systematic natural history of a disease” (p. 178).
In the 1980s, Peele (1985) advanced the concept known as maturing out (still used today) to explain how many alcoholics and addicts give up substance abuse without the benefit of treatment or self-help programs. The term was coined earlier by Winick (1962), who sought to explain the process by which many heroin addicts cease using the drug as they grow older. Today, the concept has been applied more broadly to include alcohol and other drugs.

This natural remission is believed to be related to developmental issues. Peele (1985) suggests that addiction is a maladaptive method of coping with the challenges and problems of young adulthood. Such challenges may include establishing intimate relationships, learning to manage one’s emotions, finding rewarding work, and separating from one’s family of origin. Abuse of alcohol or drugs is a way to evade or postpone dealing with these challenges. Peele (1985) contends that as addicts tire of the “night life” and the “fast lane” and become more confident in their ability to take on life challenges (i.e., responsibilities), they will gradually (in most cases) give up substance abuse.

In a series of empirical studies, the process of maturing out was examined among a group of heroin addicts who had been admitted to the California Civil Addict Program during the years 1962–1964 (see Anglin, Brecht, Woodward, & Bonett, 1986). In 1974–1975, the investigators conducted a follow-up assessment of the original sample using a longitudinal retrospective procedure. The studies revealed that maturing out was prevalent in this population, but it was conditional on a number of factors. For example, 75% of “older addicts” and 50% of “younger addicts” had ceased heroin use if they lacked antisocial characteristics and were not involved in crime/drug dealing (Anglin et al., 1986). However, among those still involved in crime/drug dealing to some degree, there was no relationship between maturing out and age. Furthermore, younger addicts assessed as high in “personal resources”—an aggregate measure combining educational status, post-high school vocational training, employment history, and parents’ socioeconomic status—were found to cease heroin use at a somewhat earlier point in their addiction careers (Brecht, Anglin, Woodward, & Bonett, 1987). Finally, participation in methadone maintenance facilitated maturing out in older addicts more than in younger addicts, but legal supervision had no differential effect across age categories (Brecht & Anglin, 1990).

Evidence also shows that the alcohol consumption of young adults tends to follow the process of maturing out. Similar to heroin, the process seems to be conditional on a number of individual characteristics and social variables. Gotham, Sher, and Wood (1997) assessed 284 college students, most of whom were seniors. Three years later, after all had earned a bachelor’s degree, they were assessed a second time. At this follow-up, the cohort’s frequency of weekly intoxication had dropped substantially.
Three variables were associated with decreased college drinking: a full-time job, being male, and being less “open to experience.” Individuals who scored relatively high on a measure of extraversion were most likely to have continued a pattern of frequent intoxication during the 3-year period. In another study, Miller-Tutzauer, Leonard, and Windle (1991) conducted a 3-year longitudinal study of 10,594 individuals, ages 18–28. The purpose of their investigation was to examine the impact of marriage on alcohol use. They found that individuals tended to moderate their alcohol use prior to actually becoming married and that drinking continued to decline into the first year of marriage. This decline in alcohol use appeared to stabilize by the end of the first year. Miller-Tutzauer et al. (1991) concluded that the transition to marriage is often associated with maturation in drinking behavior.

Why did the disease model proponents contend that the course of addiction is invariably progressive in the face of evidence indicating that natural remission increases with age? This discrepancy can probably be traced to the fact that the disease models emerged from recovering alcoholics’ first-person accounts and from clinical anecdotes. All these were given by alcoholics who recovered through AA or presented themselves for treatment. Such individuals probably represent just a subgroup of all those persons with addiction problems. Thus, although the concept of addiction as a progressive disease may fit some alcoholics and addicts, it does not apply to most with these problems.

**Addiction as a Chronic Disease**

For many years, questions about the “chronicity” of addiction have been among the most controversial issues in the field and a source of tension between the treatment and research communities (Marion & Coleman, 1991; Peele, 1985). The disease models maintain that addiction is a chronic disorder, meaning that it never disappears (e.g., “Once an alcoholic, always an alcoholic”). The disease can be readily treated with sustained abstinence and growth within AA or NA, but it is never “cured.” For this reason, most individuals in AA or NA refer to themselves as “recovering,” rather than “recovered.” In this way, substance dependence is likened to other chronic diseases, such as cancer, diabetes, or heart disease.

Abstinence from all mood-altering substances, then, is the imposed goal of most treatment programs in the United States (it should be noted, however, that caffeine and nicotine are not usually prohibited). In contrast, the research literature going back into the 1970s contains a large number of clinical studies indicating that controlled drinking is a viable treatment strategy for many alcoholics, particularly those of younger ages (e.g., Heather & Robertson, 1983; Miller, 1982; Sobell & Sobell, 1976). Furthermore, many contemporary evidence-based clinical strategies for
helping persons with addictions do not impose treatment goals of abstinence on clients. Instead, therapy is viewed to be a collaborative process in which the client’s autonomy is respected, and behavior change targets are identified by the client (Tooley & Moyers, 2012).

**Denial**

Historically, the denial exhibited by the addict received a great deal of attention in the traditional disease model. According to Massella (1990), it is the “primary symptom of chemical dependence” (p. 79). Denial is best characterized as an inability to perceive an unacceptable reality; the unacceptable reality is being an “alcoholic” or an “addict.” Denial is not lying. It is actually a perceptual incapacity—the most primitive of the psychological defenses. Denial protects the ego from the threat of inadequacy. George (1990) recognized that it also “protects the option to continue to use, which for the addicted individual is the essence of life” (p. 36). Further discussion of denial and other defense mechanisms is reviewed in Chapter 5.

Certainly, denial is a common aspect of alcoholism and other addictions. However, instead of narrowly defining it as a symptom of a disease, it is useful to take a broader view and to consider how other forces, in combination, foster its use. For instance, the general social stigma attached to addiction is responsible in part for the frequent emergence of the defense. There are few labels today worse than that of *alcoholic* or *addict*. With this moral condemnation, it is no wonder that individuals unconsciously react the way they do when initially offered help. Another contributing factor is the coercive methods that are sometimes used to force clients into treatment. The use of confrontational procedures (e.g., family interventions, employee assistance program efforts, and group confrontation) to break down the denial may, in many situations, have the unintended effect of actually strengthening it.

This is not to say that substance abuse should be ignored or “enabled.” However, it should be kept in mind that at least in some cases, denial is a product of well-intentioned coercion by “concerned others” or treatment personnel. To describe denial as a disease symptom is to ignore its social origins and the universality of its use by almost all humans, addicted as well as nonaddicted.

**Chapter Summary**

The enduring value of the disease models is that they remove alcohol and other drug addictions from the moral realm. They propose that addiction sufferers should be treated and helped rather than scorned and ridiculed. Though the moral model of addiction has by no means disappeared in the
United States, today more resources are directed toward rehabilitation rather than just toward punishment. The emergence of the disease models is largely responsible for this shift in resource allocation. Increasingly, it is being recognized that harsh penal sentences do little to curb substance abuse in our society.

The contributions of molecular genetics and neuroscience in recent years have begun to elucidate the genetic parameters of addiction. These developments will likely solidify the treatment community’s conception of addiction as a disease state. If technological advances lead to implementation of genetic screening as a diagnostic tool, the credibility of the disease view may increase among the general public. From a public policy perspective, the more addiction can be attributed to genetic factors (as opposed to willful misconduct), the greater the likelihood of public support for increased resources being directed to treatment.

Putting science aside, another strength of the classic disease model is its simplicity. Recall from Chapter 1 that a good theory is one that is parsimonious. This applies to the traditional disease model: It can be taught to clients in a relatively simple and straightforward manner. Clients, in turn, are often comfortable with the disease conception because it is familiar. Most clients have known someone with a disease (heart disease, diabetes, etc.), so it is not a foreign notion.

The disease models provide the individual who is new to recovery with a mechanism for coping with any guilt and shame stemming from past misdeeds. This framework teaches that problem behaviors are symptoms of the disease process. The alcoholic or addict is not to blame; the fault rests with the disease process. As one alcoholic with many years in recovery shared, “Calling it [alcoholism] a disease allows us to put the guilt aside so that we can do the work that we need to do.”

The unwavering commitment to abstinence as the goal of treatment and sobriety as a way of life is a principle promoted by the disease models and a source of their strength as well. Clearly, the large majority of clients who appear for treatment would benefit most by complete abstinence from psychoactive drugs (other than prescribed medications). Hundreds of thousands, if not millions, of recovering persons have rebuilt their lives as the result of achieving and maintaining a sober life. In this regard, disease models are distinguished from other theories on addiction. On the issue of abstinence, the disease models are clear and direct. Other models dodge the issue a bit, do not address it directly, or contend that “it depends” on the individual client.

The weaknesses of the disease models have been identified throughout this chapter; they are not repeated here in detail. Simply put, some of the historical concepts of the disease models are not well supported by science. The notions that have been particularly discredited are that addiction is a progressive disease and that it involves a literal loss of control. Clearly, the
best-supported proposition is that alcoholism and other substance use disorders have varying degrees of genetic etiology. However, as argued earlier, the fact that a human trait, behavior, condition, syndrome, disorder, etc., is, to some degree, rooted in genes does not necessarily require us to think of it as disease. Furthermore, it is clear that environmental factors contribute greatly to all forms of substance use, abuse, and dependence.

The major limitation of the disease conception in general is that it gives too little emphasis to the impact of psychosocial variables and particularly the role of learning as etiological bases. Moreover, the classic disease model has contributed little to skill-based relapse prevention strategies that rely on learning principles to enhance coping. Subsequent chapters in this volume explore some alternatives to the disease models. None of them is without significant limitations either, as we will see.

### REVIEW QUESTIONS

1. Why are the disease models of addiction controversial in many quarters?
2. How does Peele distinguish between types of disease models?
3. What is the relationship between genes and the environment in influencing complex human traits such as addiction?
4. What is the impact of gene–environment interactions on the initiation and maintenance of alcohol and drug abuse?
5. Why should we be cautious about the assignment of numerical values to the contributions of “nature” and “nurture”?
6. What should the addiction practitioner know about the genetics of addiction?
7. What is the significance of the mesolimbic dopamine pathway for understanding addiction?
8. What is meant by addiction as a primary disease?
9. What is meant by loss of control?
10. Does research support the loss-of-control concept?
11. In what ways do research findings dispute the concept of alcoholism as a progressive disease?
12. What is meant by addiction as a chronic disease?
13. How is denial different from lying? What are the problems with calling denial a symptom of a disease?
14. What are the strengths and weaknesses of the disease models?
CHAPTER 3
Public Health
and Prevention Approaches

WHAT IS PUBLIC HEALTH?

The World Health Organization (1998) provides two definitions of public health. The one-sentence definition simply states that public health is “the science and art of promoting health, preventing disease, and prolonging life through the organized efforts of society” (p. 3). The elaborated definition distinguishes between traditional and more contemporary conceptions of public health:

Public health is a social and political concept aimed at improving health, prolonging life and improving the quality of life among whole populations through health promotion, disease prevention and other forms of health intervention. A distinction has been made in the health promotion literature between public health and a new public health for the purposes of emphasizing significantly different approaches to the description and analysis of the determinants of health, and the methods of solving public health problems. This new public health is distinguished by its basis in a comprehensive understanding of the ways in which lifestyles and living conditions determine health status, and a recognition of the need to mobilize resources and make sound investments in policies, programmes and services which create, maintain and protect health by supporting healthy lifestyles and creating supportive environments for health. Such a distinction between the “old” and the “new” may not be necessary in the future as the mainstream concept of public health develops and expands. (World Health Organization, 1998, p. 3)

Public health is often contrasted with medicine: Public health is concerned with promoting and protecting the health of populations, whereas medicine is primarily focused on the care of individual patients.
A Brief History of Public Health in America

The earliest attempts to address public health problems in America can be traced to the colonies of the 17th century (Duffy, 1992). Infectious diseases brought by western European settlers were the chief health problems of that period. Smallpox, malaria, diphtheria, yellow fever, diarrheas and dysenteries, scarlet fever, cholera, typhoid, and other diseases were endemic in the colonial period and contributed to enormous suffering. For instance, in Cotton Mather’s diary, the famous New England minister noted that his wife, three children, and a maid died during a single measles outbreak in the winter of 1713–1714 (Duffy, 1992, p. 11). Colonists treated disabling conditions such as malaria and some forms of dysentery with resignation, but the more deadly diseases, such as smallpox, were feared because they appeared without apparent explanation and killed at random.

At that time, and until the 1880s, infectious disease was not well understood. The prevailing medical theories employed a poorly defined concept known as *miasma*, which was thought to be an invisible, toxic matter coming from the earth or from rotting tissue or human waste, or other sources, that contaminated the atmosphere and led to widespread illness and death (Stone, Armstrong, Macrina, & Pankau, 1996). Thus, the early approaches to improve the public health were usually confined to the cities and took the form of municipal sanitary regulations that sought to reduce overcrowding in city buildings, controlling the dumping of garbage, improving the disposal of human waste, managing livestock better, and so on. These regulations were typically reactive in nature; that is, they were enacted in response to a local outbreak of disease. Their enforcement was often inconsistent and subsequently ignored after an illness waned (Duffy, 1992).

As the U.S. urban population grew in the 1800s, the health conditions in the cities deteriorated, particularly in impoverished sections of urban areas. Duffy (1992) noted that affluent families typically moved out of older parts of U.S. cities at this time, and they became filled with the poor. The great influx of Irish and immigrants from other countries in the 1840s and 1850s made this situation worse. Often entire families would live in small one- or two-room apartments. In most slum housing, the only water source was an outside well or standpipe, if the city had a water system at all. Frequently, multiple families would share a single toilet facility. Disease spread rapidly under these living conditions.

Public health advocates, often members of civic groups and sometimes well-educated, progressive physicians, led reform efforts in a number of cities during the 1800s (Duffy, 1992). Collectively, these reforms came to be known as the *sanitary movement*, the forerunner of the modern public health movement that became institutionalized in the early part of the 20th century. Despite being based on the erroneous miasmatic disease concept,
the sanitary reforms were mostly successful in reducing the incidence of infectious disease. In contrast, medicine played little part (Duffy, 1992). These developments clearly showed that the private medical treatment of individual sufferers was not an adequate community response. To prevent disease, there was a need to (1) focus on the environment, (2) alter the living conditions of citizens, and (3) educate citizens about how to protect themselves and their community. The origins of the tensions between medicine and public health, then, can be traced to the sanitary movement.

By the turn of the century, scientists had identified a number of pathogenic organisms that caused common infectious diseases, including the germs causing tuberculosis, typhoid, and diphtheria (Stone et al., 1996). This new germ theory gradually supplanted miasmatic theory and revolutionized both public health and medicine. Better management and inspection of food and water supplies, preventive vaccines, the quarantine of the sick, and health education campaigns were remarkably successful in reducing the morbidity and mortality of common infectious diseases. Thus, public health began to rely more on science and research as a means to improve health conditions. However, even as more attention was given to scientific methods, the experience with tuberculosis and infantile diarrheas, in particular, forced public health officials to recognize that environmental factors and living conditions, often associated with poverty, remained important causal factors in the development of disease (Duffy, 1992). Thus, the “new public health” official could not retreat into a narrow science based on germ theory. Political advocacy and activities directed toward improving living conditions remained an important public health function (which continues today).

The 20th century saw a number of important developments in public health. One was the institutionalization of public health work. The federal government established a number of agencies with missions to focus on specific public health problems (e.g., the Substance Abuse and Mental Health Services Administration [SAMHSA]). Most of these agencies are under the umbrella of the U.S. Department of Health and Human Services (USDHHS). State, county, and municipal public health departments were created as well.

Another development was the professionalization of the public health field. Civic groups and some physicians spearheaded most of the reforms during the sanitary movement of the 1800s. The 20th century saw the advent of formal public health training typically provided by schools of public health. Initially, much of this training was geared toward the physician. Today, many students receive training in public health without a background in medicine.

The scope of public health also expanded greatly in the last century. Though much effort remains directed at infectious disease, many other
health concerns are the focus of public health practice today. Chief among these problems are tobacco, alcohol, and other drug use. Some of the other major public health issues today include: HIV/AIDS, obesity, chronic disease, injuries and violence, and bioterrorism.

Furthermore, it is important to recognize that significant advances were made in public health during the 20th century (Centers for Disease Control and Prevention [CDC], 1999). Since 1900, the average lifespan of Americans increased by more than 30 years, and 25 years of this increase can be attributed to public health efforts (Bunker, Frazier, & Mosteller, 1994). Without ranking them in order of importance, the CDC (1999) has identified 10 great public health achievements of the 20th century (see Table 3.1).

**Philosophical Foundations of Public Health**

For some time, the public health enterprise in the United States has been involved in debate about the best approach to promote health and prevent disease in the population. The debate can be traced to the different social philosophies undergirding these approaches (Nijhuis & van der Maesen, 1994). The dominant approach of the 20th century was medical science. However, the view that public health practice is but one of many subdivisions of the field of medicine has had severe critics (e.g., McKinlay & Marceau, 2000). Proponents of a more progressive model have argued that to further strengthen the health of the population, a paradigm shift is needed in which medicine is subsumed under the more comprehensive structure of the public health system (Nijhuis & van der Maesen, 1994).

**TABLE 3.1. Ten Great Public Health Achievements in the United States, 1900–1999**

<table>
<thead>
<tr>
<th>Number</th>
<th>Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vaccination</td>
</tr>
<tr>
<td>2</td>
<td>Motor vehicle safety</td>
</tr>
<tr>
<td>3</td>
<td>Safer workplaces</td>
</tr>
<tr>
<td>4</td>
<td>Control of infectious disease</td>
</tr>
<tr>
<td>5</td>
<td>Decline in deaths from coronary heart disease and stroke</td>
</tr>
<tr>
<td>6</td>
<td>Safer and healthier foods</td>
</tr>
<tr>
<td>7</td>
<td>Healthier mothers and babies</td>
</tr>
<tr>
<td>8</td>
<td>Family planning</td>
</tr>
<tr>
<td>9</td>
<td>Flouridation of drinking water</td>
</tr>
<tr>
<td>10</td>
<td>Recognition of tobacco use as a health hazard</td>
</tr>
</tbody>
</table>

*Note. From Centers for Disease Control and Prevention (1999).*
Figure 3.1 depicts the competing visions of the public health enterprise. McKinlay and Marceau (2000) contend that the conventional public health model is driven by a social philosophy of individualism, a dominant perspective in the United States today that emphasizes the traits, motives, and actions of distinct individuals as the primary determinants of health status. In this traditional approach, medical science is viewed as the means to best promote and preserve the health of the population. An alternative model arises from a collectivist social philosophy that is more holistic and ecological and points to multilevel intervention activities. In short, the holistic/ ecological conception recognizes that health is a dynamic state influenced by determinants both within and outside the individual.

The conventional strategies employed in the United States for preventing and treating tobacco, alcohol, and other drug abuse have mostly followed the individualistic approach noted in Figure 3.1. That is, intervention strategies focus on risk factors usually “within the skin” of the individual and have largely ignored multilevel strategies that seek to address community and environmental risk factors. Much of this chapter is devoted to reviewing public health and prevention approaches that rely on innovative, multilevel interventions.

**The Triad of Causation in Public Health**

The public health experience with tuberculosis in the early part of the 20th century made clear that the disease was not caused merely by the presence of a germ, in this case—tubercle bacillus (Duffy, 1992). Gradually, public health officials came to recognize that more than one factor contributes to the occurrence of disease. For instance, it is now known that many persons exposed to tubercle bacillus do not develop tuberculosis, and that poverty,
overcrowding, malnutrition, and alcoholism are important causal factors in its occurrence (Friedman, 2004). Thus, germ theory is an inadequate basis for understanding the development of disease and other health problems.

In public health the triad model of causation, involving host, agent, and environment, is often used to explain the development of disease and other health problems. The model provides a better understanding of the interactive nature of the multiple factors that produce disease and other health problems, such as alcohol dependence, for example. Though the agent (i.e., alcohol) must be present for dependence to occur, its presence alone does not produce alcoholism in an individual (the host). Hence, the agent, in this case alcohol, is best considered a necessary factor, but not a sufficient factor, for a health problem, in this case, alcohol dependence (or alcoholism), to occur. As depicted in Figure 3.2, the triad model proposes that the multiple characteristics of the host (in this case, the alcoholic) determine susceptibility or resistance to the agent (alcohol). In general, host characteristics include such factors as genetic vulnerability, age, attitudes and expectancies, and habits (lifestyle variables), but with disorders that tend to be chronic, such as alcohol dependence, the range of determinants can be very broad and complex (Friedman, 2004). In addition, health problems, such as alcohol dependence, are instigated or suppressed

![Figure 3.2](image-url)

**Figure 3.2.** Agent–host–environment interaction model of alcohol dependence.
by the environment. Again, a wide range of environmental variables may be involved in the development of the disorder, including availability of the drug, community and peer drinking norms, family influences, and so on. Furthermore, subsets of agent, host, and environmental factors may interact to retard or promote disease and other health problems in specific populations. For example, Asian Americans appear to have lower rates of substance abuse and dependence than other ethnic and racial groups in the United States (SAMHSA, 2011).

**Healthy People 2020: The National Health Priorities on Tobacco, Alcohol, and Drug Use**

Healthy People 2020 is a public health initiative put in place to establish to set of health objectives for the nation (USDHHS, 2010). The initiative also monitors the progress made in achieving these objectives over the first decade of the new millennium. The four broad goals of Healthy People 2020 are:

1. Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death.
2. Achieve health equity, eliminate disparities, and improve the health of all groups.
3. Create social and physical environments that promote good health for all.
4. Promote quality of life, healthy development, and healthy behaviors across all life stages (USDHHS, 2010).

Healthy People 2020 is useful to many different types of organizations, agencies, and community groups in helping them create a vision and agenda for their work. Moreover, the initiative helps groups align their specific mission with national health priorities.

Among the nearly 600 health objectives identified in Healthy People 2020, 41 of them address tobacco, alcohol, and other drug problems. Two topic areas organize these 41 health objectives (see Table 3.2).

**Public Health Surveillance of Substance Abuse**

Public health surveillance is the ongoing assessment of the health of a community or population based on the collection, analysis, interpretation, and use of health data (Brownson, Baker, Leet, Gillespie, & True, 2011). Surveillance work provides the factual information needed for public health decision making, program promotion, and public advocacy. The data
TABLE 3.2. Healthy People 2020: National Objectives for Tobacco, Alcohol, and Other Drug Use

**Topic area: Tobacco use**

**Tobacco use**
1. Reduce tobacco use by adults.
2. Reduce tobacco use by adolescents.
3. Reduce the initiation of tobacco use among children, adolescents, and young adults.
4. Increase smoking cessation attempts by adult smokers.
5. Increase recent smoking cessation success by adult smokers.
6. Increase smoking cessation during pregnancy.
7. Increase tobacco use cessation attempts by adolescent smokers.

**Health systems change**
8. Increase comprehensive Medicaid insurance coverage of evidence-based treatment for nicotine dependency in states and the District of Columbia.
10. Increase tobacco cessation counseling in health care settings.

**Social and environmental changes**
11. Reduce the proportion of nonsmokers exposed to environmental tobacco smoke.
12. Increase the proportion of persons covered by indoor worksite policies that prohibit smoking.
13. Establish laws in states, District of Columbia, territories, and tribes on smoke-free indoor air that prohibit smoking in public places and worksites.
14. Increase the proportion of smoke-free homes.
15. Increase tobacco-free environments in schools, including all school facilities, property, vehicles, and school events.
16. Eliminate state laws that preempt stronger local tobacco control laws.
17. Increase the federal and state tax on tobacco products.
18. Reduce the proportion of adolescents and young adults, grades 6–12, who are exposed to tobacco advertising and promotion.
19. Reduce the illegal sales rate to minors through enforcement of laws prohibiting the sale of tobacco products to minors.
20. (Under development) Increase the number of states and the District of Columbia, territories, and tribes with comprehensive, evidence-based tobacco control programs.

**Topic area: Substance abuse**

**Policy and prevention**
1. Reduce the proportion of adolescents who report that they rode, during the previous 30 days, with a driver who had been drinking alcohol.
2. Increase the proportion of adolescents never using substances.
3. Increase the proportion of adolescents who disapprove of substance abuse.
4. Increase the proportion of adolescents who perceive great risk associated with substance abuse.
5. (Under development) Increase the number of drug, driving while impaired (DWI), and other specialty courts in the United States.
6. Increase the number of states with mandatory ignition interlock laws for first and repeat impaired driving offenders.

*(continued)*
generated from surveillance activities provide an empirical basis for establishing priorities and planning programs that might not be well understood by the public or may even be controversial because they often address sensitive topics (e.g., regulation of cigarette smoking in public areas and reducing HIV transmission). Furthermore, as Duffy (1992) has noted, throughout U.S. history the public’s attention span to health issues has been short (p. 313). There is a continual need to maintain awareness of the importance of these issues among the public. The sustained, ongoing nature of surveillance programs serves the important societal function of reminding the public about potential health threats and new emergencies.

Discussed next are three national surveillance systems of substance use operated by public health agencies of the U.S. federal government. Each relies on a different data collection method to gather data from nationally representative samples of Americans. The Youth Risk Behavior Surveillance Survey (YRBSS) is a school-based survey of high school students. The National Survey on Drug Use and Health (NSDUH) relies on a household survey, and the Drug Abuse Warning Network (DAWN)
includes a survey of visits to hospital emergency departments related to substance abuse.

**Youth Risk Behavior Surveillance Survey**

The CDC operates the YRBSS (Eaton et al., 2012), which collects self-report survey data on a biennial basis from a nationally representative sample of U.S. high school students (grades 9–12). The surveillance system monitors priority health risk behaviors that have been documented to contribute substantially to the social problems, disabilities, and deaths of American youth and adults. The multiple behaviors that are assessed include tobacco use, alcohol and other drug use, sexual behaviors, violence, safety behaviors, eating behavior, and exercise behavior. These behaviors also are associated with educational outcomes and dropping out of school.

The YRBSS was designed with multiple purposes in mind. The system is used to (1) determine the prevalence of health risk behaviors among high students; (2) examine change in these behaviors over time; (3) study the co-occurrence of health risk behaviors; (4) compare national, state, and local prevalence rates as well as those among subpopulations of adolescents (e.g., sex, age, and racial/ethnic groups); and (5) monitor progress toward achieving national health objectives (USDHHS, 2000). To illustrate the type of data collected by the YRBSS, Table 3.3 shows the lifetime prevalence rates of each of eight drugs used by high school students.

In addition to documenting the relatively high prevalence of substance use among American high school students, the surveillance data in Table

<table>
<thead>
<tr>
<th>Grade</th>
<th>Cigarettes</th>
<th>Alcohol</th>
<th>Marijuana</th>
<th>Nonmedical use of prescription drugs</th>
<th>Inhalants</th>
<th>Cocaine</th>
<th>Hallucinogens</th>
<th>Ecstasy</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>37.6</td>
<td>61.7</td>
<td>30.8</td>
<td>16.5</td>
<td>12.7</td>
<td>5.0</td>
<td>6.3</td>
<td>5.2</td>
</tr>
<tr>
<td>10</td>
<td>41.0</td>
<td>69.2</td>
<td>36.4</td>
<td>18.2</td>
<td>11.8</td>
<td>6.5</td>
<td>7.7</td>
<td>7.7</td>
</tr>
<tr>
<td>11</td>
<td>47.1</td>
<td>75.3</td>
<td>45.5</td>
<td>23.3</td>
<td>11.1</td>
<td>7.5</td>
<td>9.4</td>
<td>9.2</td>
</tr>
<tr>
<td>12</td>
<td>54.5</td>
<td>79.0</td>
<td>48.9</td>
<td>25.6</td>
<td>9.3</td>
<td>8.5</td>
<td>11.5</td>
<td>11.3</td>
</tr>
</tbody>
</table>

*Note.* Data from Centers for Disease Control and Prevention (Eaton et al., 2012). Nonmedical use of prescription drugs category includes: Oxycontin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax. Inhalants measure used the following prompt: “Sniffed glue, breathed the contents of aerosol cans, or inhaled any paints or sprays to get high.” Cocaine category includes crack. Hallucinogens category include LSD, acid, PCP, angel dust, mescaline, or mushrooms.
3.3 reveal several noteworthy patterns. First, with the exception of inhalants, drug use prevalence rates increase with grade level. Second, alcohol clearly is the most commonly used drug, followed by cigarettes, marijuana, and nonmedical use of prescription drugs. Notice that the 9th-grade prevalence of alcohol use (61.7) is higher than the 12th-grade rates for the other seven drugs. Third, inhalant use is the only drug category that decreases with grade level. Findings such as these can be useful for establishing prevention priorities and designing programs of intervention.

National Survey on Drug Use and Health

Another example of a national surveillance system is the NSDUH. This surveillance survey is managed by the SAMHSA (2011). Conducted since 1971, the NSDUH is a primary source of data on the incidence and prevalence of tobacco, alcohol, and other drug use in the civilian, noninstitutionalized population 12 years of age and older in the United States. Data are collected in all 50 states and the District of Columbia.

Each year, about 67,500 face-to-face interviews are conducted in a representative sample of U.S. households (Office of Applied Studies, 2004). Introductory letters precede the interviewer visits to the selected NSDUH households. Within these sampling units (can be a household or another type of living unit), survey participants are randomly selected using an automated program of a handheld computer. Prior to conducting these interviews, the interviewers explain the purpose of the study, how the data will be used, and the confidentiality protections provided under federal law. The names of the respondents are not collected and their addresses are stored separately from their survey responses.

The selected participant is asked to identify a private area in the home away from other household members for the purpose of conducting the 1-hour interview (Office of Applied Studies, 2004). The interview relies on both computer-assisted personal interviewing (CAPI) and audio computer-assisted self-interviewing (ACASI). The interviewer begins the interview in CAPI mode by reading the questions from the screen and entering the participant’s responses into the database. For sensitive questions, the interviewer shifts to ACASI with the participant reading the questions silently on the screen and/or listening to them through available headphones. In ACASI mode, participants enter their responses directly into the computer database. A $30 cash payment is given to each participant who completes an NSDUH survey.

One example of findings reported from the NSDUH appears in Figure 3.3. In the U.S. population, there were about 4.1 million persons, age 12 or older, who received treatment for substance use in 2010 (SAMHSA, 2011). In this group, about 2.3 million persons, or 56%, received treatment
through self-help groups. Almost 1.7 million persons received treatment at an outpatient rehabilitation center (41%). None of these estimates for treatment location have changed significantly since 2002.

**Drug Abuse Warning Network**

A third example of a public health surveillance system of substance use is DAWN (SAMHSA, 2012a). This system monitors trends in drug-related emergency department (ED) visits and deaths (data on deaths not reported here). DAWN also is sponsored by SAMHSA, which is required to collect these data under Section 505 of the Public Health Service Act (42 U.S.C. §290aa-4). The system provides estimates of drug-related ED visits for the coterminous United States by collecting data from a representative sample of hospitals.

Table 3.4 presents data generated by DAWN for 2010. During that period, alcohol consumed by persons under the age of 21 and alcohol consumed in combination with other drugs were associated with the highest rates of ED visits. Cocaine had the third highest rate of mentions, followed by marijuana, narcotic pain medications, benzodiazepines, and heroin. Many other drugs are detected by DAWN, but they account for fewer ED visits and thus are not noted in Table 3.4.
The Significance of Age of Onset

From a public health perspective, the optimal way to reduce the human costs associated with substance use is to prevent or delay the onset of tobacco, alcohol, and other drug use. Though a number of unanswered questions remain about the best way to characterize the developmental sequence of substance use, in the last 30 years much has been learned about its initiation and the risk factors associated with its onset. For instance, it is well established that the onset of cigarette smoking can be predicted by early conduct problems in school, poor academic performance, weak school bonds, peer smoking and perceived peer norms, lower socioeconomic status, poor refusal skills, and other variables (Bryant, Schulenberg, Bachman, O’Malley, & Johnston, 2000; Conrad, Flay, & Hill, 1992; Olds, Thombs, & Ray-Tomasek, 2005). In turn, adolescents who currently smoke have been found to be 3 times more likely than teen nonsmokers to drink alcohol, 8 times more likely to smoke marijuana, and 22 times more likely to use cocaine (CDC, 1994). Furthermore, teenage smoking has been linked to higher rates of other risk behaviors, including fighting and engaging in unprotected sex (CDC, 1994).

Research also has documented that the early onset of use (late childhood/early adolescence) of a particular drug increases the risk of experiencing problems with that same substance at a later point in life. For example, findings from the NSDUH (see Table 3.5) show that those Americans who initiated alcohol use before the age of 14 were 3 times more likely to have met criteria for alcohol abuse or alcohol dependence in the past year than
those who started drinking at, or after, the age of 18, and 5 times more likely to meet these same criteria than those starting to drink at, or after, the age of 21 (SAMHSA, 2011). Using data from a separate national probability sample, Grant and Dawson (1997) found that the odds of alcohol abuse in adulthood decreased 8% with each increasing year of age at drinking onset, whereas the odds of alcohol dependence decreased 14% with each increasing year of age at drinking onset. From a public health perspective, these findings suggest that a goal of prevention strategies should be to delay or postpone the onset of alcohol use until at least the age of 18, when the risk for alcohol abuse or dependence has fallen to a relatively low level (as shown in Table 3.5).

**The Gateway Hypothesis**

Though early onset is clearly a risk factor for subsequent alcohol and drug abuse problems, there are more complex models that seek to explain the progression into use of so-called hard drugs, such as cocaine and heroin (see Klein & Riso, 1993). The most prominent (and probably controversial) model is the *gateway hypothesis* (Vanyukov et al., 2012). This hypothesis proposes that there is a predictable sequence to the process by which people become involved in drug use (Kandel & Faust, 1975; Kandel, Yamaguchi, & Chen, 1992). The sequence involves four stages in which the use of beer or wine is followed by hard liquor or cigarettes, which, in turn is followed by marijuana and then other illicit drugs (see Figure 3.4). An important point to keep in mind is that although the large majority of persons who reach Stages 3 and 4 have previously used gateway substances, most people at Stages 1 and 2 never advance to Stages 3 or 4.

A compelling piece of evidence supporting this developmental sequence is that though not every drug user follows this specific sequence, only about 1% began their substance use with marijuana or another illicit drug. Thus, for young people, the legal drugs (i.e., alcohol and cigarettes) seem to

### TABLE 3.5. Rates of Alcohol Abuse or Dependence among American Adults by Age of Drinking Onset, 2010

<table>
<thead>
<tr>
<th>Age at first use of alcohol</th>
<th>Percentage experiencing alcohol abuse or dependence in past year</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 or younger</td>
<td>15.1</td>
</tr>
<tr>
<td>15–17</td>
<td>9.1</td>
</tr>
<tr>
<td>18–20</td>
<td>4.4</td>
</tr>
<tr>
<td>21 or older</td>
<td>2.7</td>
</tr>
</tbody>
</table>

*Note. From Substance Abuse and Mental Health Services Administration (2011).*
function as a “gateway” to marijuana and possibly other illicit drug use. Furthermore, Kandel et al. (1992) have found that the progression to a subsequent stage is strongly predicted by both age of onset and frequency of use in the previous stage.

Without doubt, the most controversial aspect of the gateway hypothesis is whether the sequence and association of drug use identified in Figure 3.4 should be considered a causal model (Kandel, 2003; Vanyukov et al., 2012). In public policy debates about the legal control of cannabis, proponents of laws prohibiting marijuana use and distribution frequently assert that the gateway sequence involves causation; that is, marijuana use is a cause of hard drug use (methamphetamine, heroin, cocaine, etc.). Thus, those in favor of restrictive cannabis laws may argue that even though the use of marijuana by itself may sometimes not be highly addictive or dangerous, it often leads young people to other more serious drug use that is very harmful to the individual, his or her family, and society. Opponents of strong legal controls on marijuana typically argue that the stage sequence in Figure 3.4 does not establish causality but, rather, represents a series of spurious correlations. In this view, it is contended that there is no plausible biological mechanism by which drug use at one stage would cause drug use at a subsequent stage. Therefore, the observed correlation between marijuana and hard drug use is the result of some third factor, such as an underlying proneness to deviance, which puts individuals at risk for use of both cannabis and hard drugs as well as a range of other unconventional behavior (Jessor, Donovan, & Costa, 1991). Furthermore, opponents of marijuana prohibitions maintain that the gateway hypothesis is simplistic and directs attention away from the actual root causes of hard drug use, which are believed to be such factors as limited economic opportunity and poverty, poor education, weak family bonds and inadequate parental supervision, neighborhood disorganization, and so on.

Two twin studies conducted to test the gateway hypothesis have arrived at somewhat different conclusions about the role of marijuana use as a possible cause of other drug abuse and dependence. In one study, Lynskey et al. (2003) assessed 311 monozygotic (MZ) and dizygotic (DZ) same-sex twin pairs discordant for early marijuana use (before age 17). The participants ranged in age from 24 to 36 (median = 30 years). The design of their investigation was based on the assumption that same-sex twins share the same environmental and family experiences, and that the MZ pairs share
the same genetic risk factors. Therefore, if the relationship between early marijuana use and other drug use later in life can be explained by shared environmental factors, then in those twin pairs who were discordant for early marijuana use, the twin who did not initiate early marijuana use should be at the same risk for developing later drug problems as the twin who did start using marijuana early. In addition, if shared genetic variables explained the relationship between early marijuana use and other drug use in later life, then the MZ twin pairs discordant for early marijuana should still have the same risk for developing later drug problems (Lynskey et al., 2003). Alternatively, if the relationship between early marijuana use and other drug use in later life is causal, or accounted for by nonshared environmental factors, it would be expected that higher rates of later drug problems would be observed in the twins who had initiated marijuana early in life.

Lynskey et al. (2003) found that the relationship between early marijuana use and other drug use later in life could not be adequately explained by either shared environmental factors or genetic factors, providing support for the gateway hypothesis. (The investigators controlled for a host of other known risk factors, such as parental conflict/separation, sexual abuse during childhood, conduct disorder, social anxiety, etc.) Compared to the twins who had not used marijuana by the age of 17, those who had done so were 2.1–5.2 times more likely to have experienced other drug use, alcohol dependence, and drug abuse/dependence. The investigators speculated that the gateway mechanism operates within a social context of peers to reduce the perceived barriers against other drug use and to increase access to them. They also cautioned that their findings do not provide definitive evidence that early marijuana use plays a causal role in producing other drug use. Rather, they suggested that their study lends strong support to the view that individuals who start smoking marijuana early in life are at greatly elevated risk for other subsequent drug abuse and drug dependence (Lynskey et al., 2003).

In a separate twin study, Agrawal, Neale, Prescott, and Kendler (2004) evaluated an expanded set of relational models (compared to those examined by Lynskey et al., 2003). Using data from a sample of 1,191 male and 934 female same-sex twin pairs, the investigators tested 13 genetically informed models that offered distinct explanations about the nature of the association between marijuana use and other illicit drug use. Agrawal et al. (2004) found that a correlated liabilities model provided the best fit to the data for marijuana use and its association with both other illicit drug use and abuse/dependence. Distinct from the gateway hypothesis, which maintains that marijuana use directly increases the subsequent risk of other drug use and abuse/dependence, the correlated liabilities model proposes that “cannabis use and other illicit drug use are influenced by genetic and environmental factors that are correlated across the drugs” (Agrawal et
al., 2004, p. 219). That is, they found evidence that the co-occurrence of marijuana use and other illicit drug use arises from correlated genetic and environmental influences that exist for both classes of drugs—not a causal mechanism involving marijuana. This finding is supported by previous research that examined these relationships in a sample of men (Tsuang et al., 1998).

However, Agrawal et al. (2004) acknowledge that their study yielded some evidence to support a modified gateway model for high-risk marijuana users. In this model, individuals are at risk for other illicit drug use only after they reach a high threshold of risk for marijuana use. This finding appears to be consistent with the earlier epidemiological work of Kandel et al. (1992). Furthermore, the Agrawal et al. (2004) study did not account for the impact of age of onset of marijuana use, as did Lynskey et al. (2003). Thus, the existing evidence establishes that there is an observable sequence and relatively strong association between marijuana use and other illicit drug use, which may involve a marijuana risk gradient. However, at this time, it is probably premature to conclude that the co-occurrence arises from a causal mechanism.

**Types of Prevention Programs and Strategies**

Today, the categorization of substance abuse prevention programs is most often based on the target population the programs are designed to assist (National Institute on Drug Abuse [NIDA], 2003). In an attempt to clarify confusion about different types of prevention, the following classification scheme has been proposed by the Institute of Medicine (1994): (1) universal prevention—programs designed for the general population, such as all students in a school; (2) selective prevention—programs targeting groups at risk or subsets of the general population, such as students performing poorly in school or children of drug abusers; and (3) indicated prevention—programs designed for people already using drugs, such as high-risk youth and their families. Effective prevention programs within each of these three categories address the protective factors and risk factors associated with substance use (NIDA, 2003).

At different stages of development, youth are exposed to different sets of protective factors and risk factors, and these influences may be altered by the presence of preventive interventions. For instance, it has been found that children and adolescents who have been exposed to positive youth development programs are less likely to use tobacco, alcohol, and other drugs (Catalano, Bergland, Ryan, Lonczak, & Hawkins, 1998a; Flay & Allred, 2003). Moreover, it is important that negative behaviors in early childhood, such as aggression, be changed because they can lead to social and academic difficulties that further heighten risk for later drug abuse.
One important aim of all preventive interventions is to alter the balance between protective factors and risk factors such that the former outweigh the latter in the life experience of children and adolescents (NIDA, 2003). Table 3.6 provides examples of common protective factors and risk factors that affect young people in five developmental spheres.

### Evidence-Based Prevention Programs

Over the past two decades, the federal government has invested a considerable amount of money into the research and development of programs to prevent substance use and abuse. These efforts have been fruitful and today a number of effective prevention approaches have been identified through rigorous testing and evaluation. SAMHSA (2012b) maintains the National Registry of Evidence-Based Programs and Practices to assist in the dissemination of tested interventions. Three of the preventive interventions in the registry are discussed here to provide some perspective on the range of prevention strategies that have empirical support. The identification of these three programs should not be considered an endorsement of them.

#### LifeSkills® Training

Today, LifeSkills® Training (LST) is one of the most widely used, evidence-based prevention programs. LST is a universal, school-based program designed for both elementary and middle school students. The program has been successfully tested in white, suburban student populations as well as in ethnic and minority populations and in inner-city schools (National Health Promotion Associates, 2012).

The LST program does not spend a great deal of time reviewing information about the pharmacological actions of drugs or the medical and legal

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**TABLE 3.6. Protective Factors and Risk Factors for Youth Substance Use**

<table>
<thead>
<tr>
<th>Protective factors</th>
<th>Developmental sphere</th>
<th>Risk factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive self-concept</td>
<td>Individual</td>
<td>Negative self-concept</td>
</tr>
<tr>
<td>Parental monitoring</td>
<td>Family</td>
<td>Inadequate parental monitoring and supervision</td>
</tr>
<tr>
<td>Primary friendships with positive youth</td>
<td>Peers</td>
<td>Primary friendships with troubled youth</td>
</tr>
<tr>
<td>Academic success with strong school bonds</td>
<td>School</td>
<td>Academic difficulties with weak school bonds</td>
</tr>
<tr>
<td>Strong neighborhood attachment</td>
<td>Community</td>
<td>Weak neighborhood attachment</td>
</tr>
</tbody>
</table>

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consequences of drug use. Instead, the program addresses protective and risk factors by attempting to build skills in three areas: drug resistance skills, personal self-management skills, and general social skills. For example, through coaching and practice, students learn (1) to deal with social pressures to use drugs, (2) how to reevaluate personal challenges in an optimistic manner, and (3) ways to overcome shyness.

LST can be taught once a week over an extended period of time or it can be offered in an intensive miniseries format where it is taught every day or two to three times a week (National Health Promotion Associates, 2012). The elementary school LST curriculum is normally taught in 24 class sessions (30–45 minutes long) over a 3-year period in either grades 3–5 or grades 4–6. Ideally, the elementary curriculum is followed by booster sessions in middle school. The LST curriculum designed for middle school is normally taught in 30 class sessions (45 minutes long) over a 3-year period in either grades 6–8 or grades 7–9.

In the first test of LST, Botvin, Eng, and Williams (1980) examined short-term cigarette smoking outcomes in 281 8th- to 10th-grade students in suburban New York. The program appeared to produce a 75% decrease in the number of new cigarette smokers after an initial posttest and a 67% decrease in new smoking at 3-month follow-up (Botvin et al., 1980). During the 1980s and early 1990s, Botvin and colleagues continued to be successful in testing LST with longer-term follow-ups for reducing tobacco use (e.g., Botvin & Eng, 1982; Botvin, Renick, & Baker, 1983), for reducing alcohol and other drug use (Botvin, Baker, Botvin, Filazzolla, & Millman, 1984; Botvin, Baker, Dusenburg, Tortu, & Botvin, 1990), and in minority populations (Botvin et al., 1992).

LST began to draw serious attention in 1995 when Botvin and colleagues published their work in the prestigious *Journal of the American Medical Association*. Botvin et al. (1995) reported the long-term outcomes of a randomized trial involving 56 public schools that were assigned to LST or a control condition. School, telephone, and mail surveys were used to collect follow-up data for 6 years after baseline. The investigators detected significant reductions in both drug and polydrug use for the groups that received LST, with strongest effects observed among those who participated in a program that was implemented with greatest fidelity. The Botvin et al. (1995) investigation was one of the first studies to provide compelling evidence that a properly implemented, school-based prevention program could produce meaningful and sustained reductions in student tobacco, alcohol, and marijuana use.

More recent evaluations of LST have offered further verification that the program is effective for other populations and drug problems. For instance, Botvin, Griffin, Paul, and Macaulay (2003) conducted another randomized trial of LST in elementary school students (grades 3–6). In 20 schools, rates of knowledge, attitudes, normative expectations, and substance use
and related variables were assessed among students who were assigned to either LST (9 schools; \( n = 426 \)) or to a control group (11 schools; \( n = 664 \)). Individual-level analyses revealed that after controlling for gender, race, and family structure, students in LST reported less cigarette smoking in the past year, higher antidrinking attitudes, increased substance use knowledge and skills-related knowledge, lower normative expectations for smoking and alcohol use, and higher self-esteem at a posttest assessment (Botvin et al., 2003). Furthermore, at the posttest assessment, school-level analyses showed that the annual prevalence rate was 61% lower for smoking and 25% lower for alcohol use in schools that received the LST than in control schools. These findings suggest that LST reduces substance use at the elementary school level.

Botvin, Griffin, Diaz, and Ifill-Williams (2001) examined the efficacy of LST in a predominantly minority student population (29 New York City schools; \( N = 3,621 \)), and Griffin, Botvin, Nichols, and Doyle (2003) evaluated LST in a subsample of this group that had been identified as being at high risk for substance use initiation. In both the total sample (Botvin et al., 2001) and the high-risk sample (Griffin et al., 2003), students who received LST reported less cigarette smoking, alcohol consumption, drunkenness, inhalant use, and polydrug use compared with controls. LST also had a direct positive effect on several cognitive, attitudinal, and personality variables that have been theoretically linked to adolescent substance use (Botvin et al., 2001). These findings support the use of LST in schools that serve disadvantaged, urban, minority adolescents and in assisting high-risk, adolescent populations (Botvin et al., 2001).

Guiding Good Choices®

Another example of a universal prevention program is Guiding Good Choices® (Catalano, Kosterman, Haggerty, Hawkins, & Spoth, 1998b; Channing Bete Company, 2012). This program was designed for parents of preadolescents. As implied by the name of the program, the aim of the Guiding Good Choices curriculum is to reduce the risk for alcohol and other drug problems during adolescence by empowering parents of 8- to 14-year-olds. Specifically, Guiding Good Choices teaches parents how to enhance important protective factors and reduce risk factors during the later elementary and middle school years. An important feature of the program is that it was designed for adult learners with varying learning styles and levels of education.

The conceptual foundation of Guiding Good Choices is the social development model (Catalano & Hawkins, 1996). A unifying construct of this framework is bonding, which is viewed as consisting of both attachment and commitment. In the context of a family, a strong parent–child bond is expected to lead to the child’s acceptance of the beliefs and
standards of the parent. When a bond generates beliefs that are prosocial and healthy, it serves as a protective factor. Of course, children can bond with antisocial parents, peers, or other harmful persons as well. The social development model and its Guiding Good Choices application stress the importance of bonding to prosocial family, school, and peers as a protection against the development of conduct problems, school misbehavior, and drug abuse (Catalano et al., 1998b).

The Guiding Good Choices program was originally developed in 1987 for use in the Seattle Social Development Project, a longitudinal research study funded by the NIDA (Catalano et al., 1998b). According to Catalano and colleagues, more than 120,000 families have been trained in the program. The Guiding Good Choices program is a 3-day parent-training course, comprised of five 2-hour sessions. For use in the workplace, the program has been offered as a series of 10 one-hour sessions. In most cases, two trained leaders from the community conduct the workshops. The content of Guiding Good Choices focuses on three core beliefs:

1. Parents can play an important role in the reduction of risk factors for other drug and alcohol use by their children.
2. Parents can take an active role in the enhancement of protection for their children by offering them opportunities for involvement within the family, teaching them skills to be successful, recognizing and rewarding their involvement, and communicating clear family norms on alcohol and other drug use.
3. Regular family meetings provide a mechanism for family involvement and serve as a tool to transfer content and skills learned in the workshop into the home environment. (Catalano et al., 1998b, pp. 135–136)

The initial evaluations of Guiding Good Choices were focused mostly on dissemination issues, for example, answering such questions as whether parents would participate in the program and use recommended family management practices. In attempting to reach parents, these are important issues to consider in designing a prevention program. Dissemination obstacles can range from logistical problems, such as lack of transportation or child care, to the manner in which the program is marketed to parents (Catalano et al., 1998b).

In Oregon, Heuser (1990) evaluated the statewide dissemination of Guiding Good Choices in 32 counties and within four state agencies. Television, radio, and newspaper announcements; posters and brochures; and announcements at public agencies, schools, and churches were used to recruit parents. It was found that the largest proportion of participants learned of the Guiding Good Choices workshops through their child’s school (45%) or from a friend or family member (34%). Overall, attendance dropped about 33% during the course of the workshops. Again, participant
ratings of the workshops were quite favorable, and between 49 and 61% of the parents reported that they had organized and held a family meeting in the past week, as instructed in each session (Heuser, 1990).

In the Seattle metropolitan area, Hawkins, Catalano, and Kent (1991) had broadcast a 1-hour television special on the local NBC affiliate (at 9:00 p.m. on a Tuesday evening) that vividly documented the risk factors and consequences of adolescent drug abuse and presented strategies that parents could use to prevent these problems. About 98,000 households were estimated to have viewed the program. In addition, public service announcements were broadcast to alert parents to the availability of 87 local Guiding Good Choices workshops.

Hawkins et al. (1991) found that about 2,500 participants attended the voluntary Guiding Good Choices workshops in the Seattle area. About 90% of the parents were identified as European American, and a majority had children in the targeted ages (grades 4–7). Over half of the participants had seen the television special (53%) and had learned about the workshops either through this special (29%) and/or through their child’s school (72%). At the final session, about 69% of the original attendees remained in the program. Overall, the participants provided very favorable program ratings, and at posttest, there was evidence of increases in knowledge about good family management and utilization of program parenting strategies (Hawkins et al., 1991).

Guiding Good Choices has also been tested among families with sixth and seventh graders in rural Iowa (Catalano et al., 1998b). Through nine different schools, parents were invited to participate. The families were nearly all white and mostly working class. At the initial assessment, data were collected from 209 families. At the final assessment, 175 of these families (84%) provided posttest data. The relatively high participation rate was probably motivated by the use of financial incentives (approximately $10 per hour per family member for completing assessments). However, the incentives were not given for program participation itself. About 88% of participating mothers and 69% of participating fathers attended at least three of the five sessions (mean attendance rate for mothers = 3.9 sessions; fathers = 3.1 sessions). In addition to responding to questionnaires, participating families also were videotaped in two structured interaction tasks. One task involved responding to general questions about their family life, such as chores, roles, and parental monitoring. The other task was focused on family problems and attempts at problem solving.

Families were randomly assigned to either the Guiding Good Choices intervention condition or a wait-list control condition (to receive the Guiding Good Choices program after the trial). Families were administered posttest assessments 2–9 weeks following completion of the program. Trained community members conducted the workshops. The investigators collected data on the fidelity of the delivery of the workshops. Across workshops, it
was found that 74–82% of the complete Guiding Good Choices curriculum was delivered by the community members (Catalano et al., 1998b).

The analysis of parent outcomes revealed that there was significant improvement in parenting behavior, child management, and the affective quality of parent–child relations for both mothers and fathers in the intervention group (Catalano et al., 1998b). Specifically, mothers who had participated in Guiding Good Choices were significantly more likely to report that they (1) provided rewards to their child for prosocial behavior, (2) communicated rules about substance use, (3) appropriately punished their child for misbehavior, (4) restricted alcohol use by their child, (5) expected their child to refuse a beer if offered by a friend, (6) expressed less conflict toward their spouse, and (7) attempted to involve themselves more with their child. Fathers in the Guiding Good Choices program were significantly more likely to report that they (1) communicated rules about substance use and (2) attempted to involve themselves more with their child.

The effects of the Guiding Good Choices program on adolescent substance use have been positive as well. In a study reporting the adolescent outcomes of the Iowa trial, Spoth, Redmond, and Shin (2001) found that in families in which the parents had received the Guiding Good Choices program, 3½ years later their 10th-grade children were 19% less likely to report ever being drunk, 37% less likely to report ever smoking marijuana, and 41% less likely to have used alcohol in the past month—compared to 10th graders in a no-treatment control condition. These long-term outcomes are particularly impressive given that Guiding Good Choices is a brief, five-session intervention for parents. Also, it is possible that the differences between adolescents in the intervention and control groups could have continued to increase over time (Spoth et al., 2001).

The research on the Guiding Good Choices program suggests that one viable universal prevention strategy is parent education and training delivered via community-based workshops. It appears that with appropriate promotion and marketing, parents can be successfully recruited to participate, and that the content of a program such as Guiding Good Choices is found to be acceptable to most parents. Furthermore, the program appears to strengthen parental family management practices that are critical for enhancing protective factors and reducing risk factors for adolescent substance use.

Project Towards No Drug Abuse

Project Towards No Drug Abuse (Project TND) is an example of an intervention that can be classified as both a selective and an indicated prevention program (Sussman, Dent, & Stacy, 2002). The program is designed for the heterogeneous population of high school youth, ages 14–19, who may or may not have prior experience with substance use and violence. In
three experimental trials, Project TND has been tested in both traditional and alternative high schools in Southern California. At 1-year (Sussman et al., 2002) and 2-year (Sussman, Sun, McCuller, & Dent, 2003b) follow-up assessments, reductions in cigarette smoking, alcohol use, marijuana use, hard drug use, and victimization have been detected in these trials. (The investigators defined a “hard” drug as any one of the following: cocaine/crack, hallucinogens, stimulants, inhalants, depressants, PCP, steroids, heroin, etc.)

The conceptual framework of Project TND is the motivation–skills–decision-making model (Sussman, 1996). This model proposes that teenage problem behavior such as drug use arises from deficits in three classes of variables. The motivational deficits that are viewed to instigate teen drug use are (1) believing that drug use is not wrong, (2) misunderstanding the effects of drugs, and (3) possessing a desire to use them. Skill deficits, which decrease the likelihood of bonding with lower-risk peer groups, include poorly developed social conversation skills and weak self-control. Third, problems with rational decision making comprise a distinct set of deficits.

The current Project TND curriculum consists of a set of twelve 40-minute interactive sessions for the high school classroom (Sussman et al., 2002). The goals of these sessions are to teach active listening skills, challenge stereotypes that drug use is the norm among teens, debunk various myths about drug use, identify the consequences of substance dependence, teach ways to deal with stress and the importance of health as a means of achieving life goals, teach skills for bolstering self-control and assertiveness, teach how to avoid unproductive ways of thinking, encourage the adoption of more conservative views on drug use, and encourage personal commitments to avoid drug use. Rather than using a lecture format in class, the teaching of these topics relies heavily on prescribed interactive activities, including role plays, mock talk shows, and games (Sussman, Rohrbach, Patel, & Holiday, 2003a).

The first randomized trial of Project TND involved 21 continuation (or alternative) high schools assigned to one of three conditions: a nine-session classroom curriculum combined with a school-led extracurricular activities component, the nine-session curriculum by itself, and a “standard care” control (Sussman, Dent, Stacy, & Craig, 1998). In California, continuation high schools serve students who are unable to remain in the traditional high school setting because of conduct problems related to poor attendance, academic underachievement, drug use, and so on. At 1-year follow-up (Sussman et al., 1998), it was found that compared to those in the control schools, the students in both of the intervention conditions had 25% lower rate of hard drug use and a 21% lower rate of weapon carrying. Among males in the intervention conditions, there was a 23% reduction in being a victim of violence. Furthermore, among students who were using alcohol at baseline, there was a 7% decrease in alcohol use. Project TND
did not appear to have an impact on either cigarette use or marijuana use (Sussman et al., 1998). The school-led extracurricular activities component did not appear to offer any protective benefit to students above and beyond that provided by the classroom curricula at the 1-year follow-up.

A long-term evaluation also was conducted of the nine-session Project TND trial (Sun, Skara, Sun, Dent, & Sussman, 2006). At 5-year follow-up, no intervention effects were detected for 30-day use of cigarettes, alcohol, or marijuana. However, there was approximately a 50% decrease in the 30-day rate of hard drug use among the students who received the classroom-only intervention and about an 80% reduction in the 30-day rate of hard drug use among those students who had received the classroom plus extracurricular activities components. The investigators speculate that hard drug use may be more amenable to intervention because compared to tobacco, alcohol, and marijuana, use of these substances is viewed as more immediately dangerous (Sun et al., 2006).

A second Project TND trial tested the program in three regular high schools in California (Dent, Sussman, & Stacy, 2001). Within each school, classrooms were assigned to either the nine-session TND curriculum or a no-treatment control condition. The results paralleled those found in the first trial. At 1-year follow-up, hard drug use was reduced by 25% and alcohol use was reduced by 12% in the baseline users. Among males, weapon carrying was reduced by 19% and being a victim of violence was reduced by 17%. Cigarette and marijuana use did not appear to be reduced by the TND curriculum.

In the third Project TND trial, the curriculum was expanded to 12 sessions (Sussman et al., 2002; Sussman et al., 2003b). The new sessions were added to better address tobacco and marijuana use as well as violence prevention. A total of 18 alternative high schools were assigned to one of three conditions: the 12-session TND classroom curriculum, a self-instructed TND curriculum, or control. The findings of this trial revealed that the teacher-led TND curriculum reduced substance use and violence at both a 1-year (Sussman et al., 2002) and a 2-year (Sussman et al., 2003b) follow-up assessment (the self-instruction version did not reduce substance use or violence relative to the control condition). At 1-year follow-up, a 27% reduction in cigarette use was observed, followed by other reductions of 26% for hard drug use, 22% for marijuana use, and 9% for alcohol use among baseline users (Sussman et al., 2002). Furthermore, a 6% decrease in being a victim of violence was observed among males and a 37% decrease in weapon carrying was detected in baseline non-weapon-carrying students. At 2-year follow-up, the reductions in substance use associated with having been exposed to the teacher-led program appeared to have increased further: cigarette use, 50%; hard drug use, 80%; alcohol use, 13%. Marijuana use was reduced by 88% in the subsample of male students who had never used the drug at baseline (Sussman et al., 2003b). Though Project TND needs further testing in other populations, these findings indicate
that school-based curricula can be developed and used to prevent substance use and violence in high school students. In addition, the results suggest that classroom interactivity is a critical feature of effective substance abuse curricula (Sussman et al., 2003a).

Research to Practice: The Challenges of Dissemination and Implementation

Unfortunately, the transfer of research findings to practice is a relatively slow process. To assess the extent of this problem in the United States, Ennett et al. (2003) studied the prevention practices of middle school program providers in 1999. The 1,795 providers were selected from a national sample of public and private middle schools. The investigators administered surveys to these personnel after determining that they were the individuals most knowledgeable about the substance abuse program in their middle school. The assessment compared the substance use prevention practices in place in the schools against standards previous research has determined to be necessary for effective curriculum content and delivery.

The findings of this study highlighted the limited extent to which prevention research findings had been disseminated or transferred to the nation’s schools (Ennett et al., 2003). For instance, in 1999, only 35% of the middle school providers reported that they had implemented an evidence-based prevention program at their school (evidence-based programs were identified by using criteria established by organizations such as SAMHSA [2012b]). A majority of the providers were found to teach effective content (62%), but only a small proportion used effective delivery (17%), and even a smaller percentage relied on both effective content and delivery (14%). The providers most likely to have implemented both effective content and delivery were those who had adopted evidence-based programs, such as LST. In addition, the use of effective content and delivery methods was found to be positively related to (1) being recently trained in substance use prevention, (2) being comfortable with using interactive teaching methods in the classroom, (3) possessing a graduate degree, and (4) being female. Use of effective content and methods was not related to specific set of school capabilities, number of years the provider had been teaching substance use prevention, provider age, school status (public vs. private), school enrollment, geographic location of the school, or other variables (Ennett et al., 2003). Clearly, a great deal of works needs to be done to strengthen the prevention capacity of schools.

The Diffusion of Innovation

One way to understand the speed at which communities and schools adopt evidence-based drug prevention programming is to apply the diffusion of innovation model. According to Rogers (1995), “an innovation is an idea,
practice, or object that is perceived as new by an individual or other unit of adoption” (p. 11). The study of the diffusion of innovation has revealed that new ideas and practices are often adopted slowly, even when they appear to have advantages over traditional views and practices. As indicated previously, this is frequently the case with evidence-based prevention programming in many communities and schools.

The speed at which an innovation is adopted is thought to be influenced by five general factors: (1) the perceived attributes of the innovation; (2) the type of innovation decision; (3) the communication channels; (4) the nature of the social system, including the views of opinion leaders and community norms; and (5) promotion efforts by change agents. The specific perceived attributes that foster diffusion are the innovation’s relative advantages over the customary practice, its compatibility with existing values, past experiences and needs of potential adopters, its complexity to use, its trialability or the degree to which the innovation can be experimented with on a limited basis, and its observability or the degree to which the effects of the innovation are visible to others (Rogers, 1995). Adoption decisions that depend on an individual making a decision generally speed up diffusion of innovation, whereas adoption decisions that require a large number of stakeholders in a community, school, or organization to decide slows down diffusion. Furthermore, when diffusion depends on interpersonal communication channels, it will generally occur more quickly than when it depends on mass media. In social systems in which the views of opinion leaders and the norms of the community support change, innovation is more likely to occur. Finally, the intensity of change agents’ efforts to promote the adoption of an innovation may make it more likely to occur. Figure 3.5 depicts these factors as they apply to the decision to adopt a new drug prevention program in a community.

The Politics of Diffusion: DARE and the School Superintendent

Schools throughout the United States have been confronted with the decision of whether to replace Drug Abuse Resistance Education (DARE), a popular but ineffective prevention program (Ennett, Tobler, Ringwalt, & Flewelling, 1994; Lynam et al., 1999). By the mid-1990s, DARE’s continuing popularity, despite its lack of empirical support, had already drawn the attention of a number of investigators and social critics interested in the diffusion of evidence-based drug prevention programs (e.g., Clayton, Leukefeld, Harrington, & Cattarello, 1996; Elliot, 1995). Thus, over the past decade, the pressure to replace DARE with evidence-based prevention programming has increased throughout the United States.

In most communities, the public school superintendent is an important opinion leader on school-based drug prevention practices. As the senior school district official, superintendents are expected to provide leadership on issues affecting students’ academic performance, health, and safety.
These officials also are significant change agents who can wield considerable influence on a school district’s approach to drug abuse prevention, if they choose to do so.

Thus, in a study I (D. L. T.) conducted with a colleague, we examined the specific role of the public school superintendent in the decision to keep or replace DARE (Thombs & Ray-Tomasek, 2001). The specific aim of the study was to explain superintendents’ intentions toward future reliance on the DARE program. In June 2000, we mailed an anonymous survey to all 611 superintendents in the state of Ohio (response rate was 71%). At that time, we found that DARE was used by 85–87% of the state’s public school districts. A large majority of the superintendents (88%) reported that they intended to continue using the program in the future. Most of the superintendents held either incorrect knowledge about DARE’s effectiveness in deterring substance use (29%) or acknowledged that they were uninformed about DARE outcome research (34%).

Results from a multivariate analysis indicated that the intention to use DARE in the future was positively associated with the superintendents’ beliefs about community support for the program and negatively associated with perceptions of their ability to replace drug prevention curricula in their district. Perhaps most troubling was the finding that accurate knowledge of the research on DARE outcomes had no relationship to intentions toward DARE, suggesting that these school officials do not use research findings as a guide for making decisions about prevention programming. Overall, the findings suggested that superintendents’ positive intentions

**FIGURE 3.5.** Factors determining adoption of new drug prevention programs.
toward continued use of DARE were formed to avert conflict with adults in the school district and community (Thombs & Ray-Tomasek, 2001). This study provides some insight into the challenges of adopting evidence-based programs.

**COMMUNITY COALITION BUILDING**

During the past 20 years, coalition building has become a common grassroots response to public health problems in communities throughout the United States (Kreuter, Lezin, & Young, 2000; Wolff, 2001a). There are many reasons for the rise of the community coalition. Recent interest comes from the increasing recognition that problems such as substance abuse do not result only from characteristics within the individual but are instigated and maintained by conditions in the community as well (Kreuter et al., 2000; Wolff, 2001a). Interest in coalitions also comes from (1) the shift of responsibility for health and social problems from the federal government to state and local levels; (2) the societal expectation that these problems will be adequately addressed with fewer resources; (3) the widespread belief that health and human service systems are too bureaucratic to adequately address community needs; and (4) the hope that volunteer work in coalitions will restore civic engagement in the United States (Wolff, 2001a).

Though not well documented, public health officials and other community practitioners typically report that the process of coalition building is not well understood, and that the many coalition success stories are probably matched by a comparable number of failures (Wolff, 2001b). However, according to Wolff (2001a), it also is possible to identify a number of functional features of effective community coalitions (see Table 3.7).

The research base on community coalitions is limited at this time. The systematic studies that have been conducted raise questions about their potential to have a positive impact on public health problems, such as substance abuse (e.g., Green & Kreuter, 2002; Hallfors, Cho, Livert, & Kadushin, 2002). One problem may be the insistence of funding agencies that community initiatives adopt “best practices,” as identified by past research conducted in different locations and/or with different populations. Unfortunately, these so-called best practices may not be well suited for a specific community or culture. Conversely, community initiatives can make the mistake of ignoring research altogether in favor of an unproven, “homegrown” intervention (Green & Kreuter, 2002, p. 305). These problems reveal the complexities of public health interventions that rely on community collaboration.

In one comprehensive review of the research literature, Kreuter et al. (2000) found that only 6 of 68 published studies reported that a coalition or consortium produced a positive health status or health system change.
Based on the descriptions found in these 68 studies, the investigators concluded that there were three overlapping, possible explanations for the lack of positive coalition outcomes:

(1) Collaborative mechanisms are inefficient and/or insufficient mechanisms for carrying out planning and implementation tasks. (2) Expectations of health status/health systems change outcomes are unrealistic. (3) Health status/health systems change may occur but may go undetected because it is difficult to demonstrate a cause-and-effect relationship. (Kreuter et al., 2000, p. 52)

These conclusions should not be considered the definitive and final word on community coalition building. However, they should be sobering to those who advocate for coalitions as a means of changing community conditions that promote substance abuse.

### Results from Community Intervention Trials

**Increasing Cessation among Adult Smokers**

**The COMMIT Trial**

Although the prevalence of cigarette smoking among Americans steadily dropped in the 1980s (CDC, 1987), to reduce morbidity and mortality associated with tobacco use there was a need to identify ways to assist...
adult smokers to quit. Thus, in 1986, the National Cancer Institute funded the Community Intervention Trial for Smoking Cessation, known more simply as the COMMIT Trial (COMMIT Research Group, 1995a, 1995b). The large randomized trial involved 10 matched pairs of communities in the United States and one pair in Canada (within each pair, one community was randomly assigned to the intervention). The research design of the trial relied on rigorous, state-of-the-art methods to test the following hypothesis: “a defined intervention, delivered through multiple community sectors and organizations over a 4-year period and using limited external resources, would result in higher quit rates among heavy cigarette smokers in the intervention communities than in the comparison communities” (COMMIT Research Group, 1995a, p. 184). The trial was based on a collaborative conceptual framework that sought to bring together diverse organizations, institutions, and individuals for the purpose of conducting smoking cessation activities in the community. This framework was based on the premise that a comprehensive community-based strategy would decrease the likelihood that adult smokers could avoid exposure to cessation messages and opportunities for quitting smoking.

The COMMIT Trial was carried out in communities with populations ranging from 49,421 to 251,208 residents (COMMIT Research Group, 1995a). Prior to implementation, a community board, comprised of key community representatives, was formed in each community. These boards had responsibility for overseeing the implementation of COMMIT in their communities. The intervention activities were implemented via four channels, including (1) public education delivered by media and at community events, (2) health care providers, (3) workplaces and other organizations, and (4) smoking cessation resources. The intervention protocol required that 58 activities had to be implemented in each of the intervention communities. Systematic monitoring indicated that across the 11 intervention communities, the mean attainment rates for implementing intervention activities were 90–93%. Optional intervention activities also were encouraged to allow for variability in community needs.

In each community, about 550 light-to-moderate smokers (1–24 cigarettes per day) and 550 heavy smokers (25 or more cigarettes per day) were randomly selected at baseline and tracked over the 4-year trial (COMMIT Research Group, 1995a). All these smokers were 25–64 years of age. The data collected from the two cohorts of 10,328 light-to-moderate smokers and 10,019 heavy smokers were analyzed separately in the study.

At the end of the COMMIT trial, there was no difference between the intervention and comparison communities on a measure of current smoking status in either the light-to-moderate smoking cohort or the heavy smoking cohort. The observed “quit smoking” rate appeared to modestly increased by the intervention (1.8%) in the light-to-moderate smoking cohort, but there was no observed increase on this same measure in the
heavy smoking cohort. Consistent with these findings, it was found that in the light-to-moderate smoking cohort, the 4-year intervention appeared to slightly reduce the “daily number of cigarettes smoked” (mean reduction of 2.7 cigarettes per day in the intervention condition). There was no significant change in daily number of cigarettes smoked in the heavy smoking cohort. Overall, the COMMIT intervention appeared to have a small, positive impact on cigarette smoking in light-to-moderate smokers but no significant effect on heavy smokers (COMMIT Research Group, 1995a).

**Profiling the “Hard-Core” Smoker**

Research conducted after the COMMIT Trial sheds some light on the failure of the community-based intervention to reduce cigarette use in heavy smokers. Emery, Gilpin, Ake, Farkas, and Pierce (2000) defined “hard-core” smokers as those reporting that they (1) smoke at least 15 cigarettes per day, (2) have no recent quit attempts, and (3) have no intention to quit smoking at any time. In a random sample of California households, these investigators found that an estimated 1.3% of the state’s population, 26 years of age or older, met criteria for being classified as a hard-core smoker (Emery et al., 2000). This group of smokers made up 5.2% of the smoking population (26 years of age or older). Hard-core smokers were typically retired, white men living alone, with 12 years or less of education, and annual income below $50,000. In addition, these smokers were distinguished from other smokers by being less likely to believe that (1) negative health consequences were associated with their smoking, (2) tobacco is an addictive drug, and (3) secondhand smoke harms other people. Compared to other smokers, the hard-core smokers also were more likely to have begun experimenting with smoking at a younger age and to report that they were younger when they became regular smokers (Emery et al., 2000). This relatively unique profile suggests that it may be unrealistic to expect some individuals to ever quit smoking.

**Neighbors for a Smoke-Free North Side**

Another example of a community intervention seeking to increase smoking cessation among adult smokers was the Neighbors for a Smoke Free North Side Project (Fisher et al., 1998). The intervention sites were located in three predominately low-income neighborhoods in St. Louis. Three similar neighborhoods in Kansas City were selected as the comparison group. The intervention stressed neighborhood-based governance and resident involvement in the design of strategies to reduce smoking. Using neighborhood volunteers and paid staff members, wellness councils were established to carry out the program for a 24-month period. The program relied on smoking cessation classes, billboard advertisements, door-to-door promotion
campaigns, and a “gospel fest.” In 1990 and 1992, results from random-digit dial telephone surveys indicated that smoking prevalence in St. Louis declined 7% compared to only 1% in Kansas City—a difference that was statistically significant.

The investigators speculated that the Smoke Free North Side intervention was more successful than COMMIT because the former program was developed in the targeted St. Louis neighborhoods and thus may have had greater “community ownership” (Fisher et al., 1998). In contrast, COMMIT was centrally developed at the national level and then delivered to communities with only a limited number of tailoring options.

**Decreasing Youth Access to Tobacco**

Other community interventions have sought to restrict youth access to tobacco products. For instance, Rigotti et al. (1997) compared three communities in Massachusetts that increased enforcement of youth tobacco laws with three matched comparison communities. In the intervention communities, health departments started quarterly compliance checks with underage tobacco purchase attempts. At baseline, 68% of vendors sold to minors. The difference between the intervention and control communities was not statistically significant at baseline. At a 2-year follow-up, only 18% of the vendors in the intervention communities, compared with 55% in the comparison communities, sold tobacco to minors. Yet, three annual surveys of more than 17,600 respondents revealed only a small decrease in underage adolescents’ perceived ability to purchase tobacco and no decline in tobacco use itself.

The Tobacco Policy Options for Prevention Project (TPOP) was a 32-month intervention that attempted to restrict tobacco use among youth through a community mobilization effort (Forster et al., 1998). This initiative centered its energy on changing local ordinances, altering retailer and other adult practices regarding the provision of tobacco to youth, and increasing the enforcement of laws that prohibit sales to underage youth. A total of 14 Minnesota communities were randomly assigned to intervention and control conditions. In June 1993 and June 1996, youth under the control of investigators attempted to purchase tobacco at all tobacco outlets in the communities.

During the trial (1993–1996), school surveys of more than 6,000 students indicated that adolescent smoking had increased in both sets of cities, but less in the intervention communities (Forster et al., 1998). It appeared that the intervention had little effect on perceptions of tobacco availability through social sources such as peers or parents, but it reduced perceived availability through commercial sources. Furthermore, in the intervention communities, purchase attempts declined significantly during the trial. In all communities in the trial, there was a large decrease in youth purchase
attempts that resulted in sales, and it was not significantly greater in the
tervention cities. The overall reduction in tobacco purchase success in
both the intervention and the control communities was attributed by the
investigators to changes in state laws that restricted youth access to tobacco,
and to the increased awareness created by news reports of these changes in
law that took place during the course of the trial (Forster et al., 1998).

A similar intervention program designed to bolster tobacco enforce-
ment took place in Erie County, New York (Cummings et al., 1998). Six
pairs of communities were matched on number of tobacco outlets, popu-
lation size, and other demographic variables. Directed by police, under-
age purchase compliance checks were conducted in 366 tobacco outlets at
baseline and 319 outlets at follow-up. In the intervention communities, all
retailers were sent a letter about tobacco laws and sales to minors that also
warned that compliance checks were planned for the area. Distribution of
the letter was followed by a dramatic increase in purchase compliance in
both enforcement and nonenforcement communities. Interestingly, compli-
ance rates between the two groups of communities did not vary, however.
It seems that most vendors in both areas learned about the enforcement
program and perceived enforcement as more vigilant in the entire region.

Gemson et al. (1998) conducted a similar trial in central Harlem (New
York City). In a randomized trial of 15 tobacco vendors, retail outlets sell-
ing tobacco were randomly assigned to three conditions: enforcement, edu-
cation, and control. In October 1993 and April 1994, surveys of underage
tobacco purchase compliance were conducted in the community. During
both surveys, violators from the outlets in the enforcement condition were
only fined (in accordance with the state law). At 6-month follow-up, under-
age sales had declined 56% among enforcement outlets, 34% among edu-
cation outlets, and 16% among control stores (Gemson et al., 1998).

**Decreasing Youth Access to Alcohol**

Another community intervention was designed to decrease the availability
of alcohol to youth. At the University of Minnesota, Wagenaar et al. (2000a)
have developed and tested a community intervention known as Communi-
ties Mobilizing for Change on Alcohol. This community-organizing project
aimed to reduce the number of outlets selling alcohol to underage youth
and restrict the availability of alcohol to youth through noncommercial
sources, such as peers and parents. A total of 15 communities were ran-
domly assigned to intervention and comparison conditions. A leadership
strategy team worked to strengthen numerous policies, procedures, and
practices in the intervention communities. Community action was pursued
through public and private organizations including city councils, school
and enforcement agencies, alcohol merchants, business associations, and
the media.
Several assessments were made to evaluate the project. Approximately 4,500 12th graders were surveyed in 1992 and 1995. In addition, a telephone survey of 3,095 18- to 20-year-olds was conducted in 1992 and repeated in 1995. Also, during the same years, alcohol purchase compliance checks, using study confederates who appeared underage, were conducted at more than 25 off-sale outlets.

Relative to the communities in the comparison condition, those in the intervention condition showed a 17% greater rate of checking age identification of youthful-looking purchasers and a 24% lower rate of sales to potential underage purchasers at bars and restaurants. Furthermore, in the intervention communities, there was a 25% decrease in the proportion of older teens providing alcohol to younger teens, and a 7% decrease in underage respondents who reported drinking in the previous 30-day period. There also was a statistically significant decrease in DUI (driving under the influence) arrests among 18- to 20-year-olds (Wagenaar, Murray, & Toomey, 2000b).

Community-Based Prevention for Youth

The Midwestern Prevention Project

Several community interventions have been tested for their ability to delay the onset of substance use among adolescents with no history of use and to decrease use in adolescents who have previous experience with one or more drugs. The Midwestern Prevention Project (MPP) attempted to deter cigarette, alcohol, and marijuana use among 10- to 14-year-olds in two U.S. cities: Kansas City, Missouri, and Indianapolis, Indiana. A quasi-experimental design in Kansas City (Pentz et al., 1989) and a randomized experimental design in Indianapolis (Chou et al., 1998) evaluated the program. From September 1984 to January 1986, the Kansas City students received a 10-session training program that included skills for resisting substance use, homework exercises relying on interviews of others, and role plays with parents and family. Most students interviewed parents and family members about family rules on substance use, effective techniques for avoiding use, and how to deal with media and community influences. Among other activities, teen participants also made statements of public commitments to avoid tobacco, alcohol, and other drug use; practiced role playing of resistance skills; and discussed homework results.

Among the 42 schools in the MPP trial, 4 were randomly assigned to the intervention condition and 4 to the control condition (Pentz et al., 1989). The remaining 34 schools were assigned based on their willingness to participate—20 were willing, 14 were not. School willingness may have been associated with perceptions that substance abuse was or was not a
high-priority concern in the school. The 20 willing schools received the intervention, increasing the total number of intervention schools to 24 (18 schools served as controls).

At 1-year follow-up, students in the intervention condition reported lower rates for all three drugs compared to those in the control condition: 17% versus 24% for cigarette use, 11% versus 16% for alcohol use, and 7% versus 16% for marijuana use. Although cigarette, alcohol, and marijuana use had increased in both groups of schools, 2 years after the program the increases for these three substances were significantly lower in the intervention group. This finding provides evidence that the MPP effects were sustained, at least for 2 years following the intervention (Pentz et al., 1989).

Chou et al. (1998) implemented and evaluated the MPP in Indianapolis by tracking 1,904 students in intervention schools and 1,508 students in control schools. The schools were randomly assigned to these conditions, and after baseline, student follow-up assessments were conducted at 6 months, 1½ years, 2½ years, and 3½ years. After statistically adjusting for ethnicity, gender, socioeconomic status, father’s occupation, and school type and grade, the researchers discovered that among those adolescents who had a baseline history of tobacco, alcohol, or other drug use, alcohol use had been decreased at the 6-month and 1½-year follow-ups and for tobacco use at 6-month follow-up only. Results for marijuana use were not consistent over time.

Project Northland

Located in Minnesota, Project Northland was designed to reduce alcohol use among preteens and younger adolescents (Perry et al., 1996). The intervention was community-based but had a significant school component. A 3-year behavioral curriculum was provided to sixth, seventh, and eight graders that emphasized peer leadership, parental involvement, and community task force activities. The program taught students to resist negative peer influence and sought to instill conservative norms about the use of alcohol. In addition, students learned methods with which to bring about community social, political, and institutional change in alcohol-related programs and policies. Students interviewed parents, local government officials, law enforcement personnel, retail alcohol merchants, schoolteachers, and administrators to learn about their views and activities relative to teenage drinking. Students also conducted “town meetings” and developed recommendations for community action to deter adolescent drinking.

Project Northland also organized community task forces to press for passage of local ordinances to prevent sales of alcohol to minors and intoxicated patrons of drinking establishments (Perry et al., 1996). The task forces consisted of government officials, law enforcement personnel, school
representatives, health professionals, youth workers, parents, concerned citizens, and teenagers. In addition, students who pledged to be alcohol and drug free were eligible for discounts at local businesses.

At baseline, 2,351 students were surveyed in Project Northland (Perry et al., 1996). The investigators were able to obtain 2-year follow-up rates greater than 80% in both the intervention and control groups. At baseline, a higher percentage of students in the intervention group were alcohol users. However, at follow-up, the proportions of students that had used alcohol in the past week and past month were lower in the intervention group than in the control group. The intervention effects of Project Northland appeared to be greatest (and statistically significant) among students with no history of alcohol use at baseline. The intervention did not reduce cigarette smoking or marijuana use in the participating youth (Perry et al., 1996).

Reducing Impaired Driving and Alcohol-Related Injuries and Deaths in the General Population

Community Prevention Trial Program

Two community interventions have attempted to reduce alcohol-related injuries and deaths in the general population. The Community Prevention Trial Program was a 5-year project designed to decrease the number of alcohol-related injuries and death in three experimental communities (Holder, 1997; Holder et al., 2000). The model for this intervention relied on five reinforcing components to change individual behavior by changing the environmental, social, and structural contexts of drinking in the community. The first component of the intervention model was community mobilization. Local residents were organized to press for public policy change. These efforts increased general awareness and concern about alcohol-related trauma. In each community, the media, mobilization, and intervention activities had specific objectives tailored to their needs.

The second component of the intervention model was responsible beverage service. This component attempted to reduce sales to intoxicated patrons in drinking establishments and to strengthen local enforcement of alcohol control laws by collaborating with restaurants, bars, and hotel associations; beverage wholesalers; and the Alcohol Beverage Control Commission.

The third component of the intervention was a drinking and driving component to improve traffic safety. This component sought to increase the number of DWI (driving while intoxicated) arrests in the community through officer training, use of passive alcohol sensors (at DWI checkpoints), and media-publicized sobriety checkpoints.

The fourth intervention component was a media advocacy initiative. These efforts attempted to focus news attention on underage drinking,
enforcement of underage sales laws, and training of personnel to prevent alcohol sales to minors. The fifth intervention component sought to reduce alcohol outlet density through local zoning regulations.

The Community Prevention Trial Program relied on a quasi-experimental design to evaluate the effects of each intervention component in intervention and comparison communities as well as the overall project effects on alcohol-related injuries (Holder et al., 2000). During the trial, local regulation of alcohol outlets and public sites for drinking were altered in all three experimental communities. Furthermore, compliance checks at 150 outlets revealed a significant decrease in successful alcohol purchases by youth.

Holder et al. (2000) found that the DWI intervention component produced increased news coverage about drinking and driving, heightened police enforcement, and increased their use of roadside breath-testing equipment. Data collected via telephone surveys indicated a significant increase in the perceived likelihood of a DWI arrest and a decrease in the self-reported frequency of driving and drinking. Data collected at roadside surveys corroborated the reduction in driving after drinking found in the telephone survey. Most important, alcohol-related crashes, as measured by single-vehicle night crashes, fell by 10–11% in the intervention communities, and alcohol-related trauma visits to emergency departments declined by 43% in the intervention communities.

Massachusetts Saving Lives Program

The Massachusetts Saving Lives Program was a comprehensive community intervention designed to reduce drinking and driving and alcohol-involved traffic deaths (Hingson, McGover, Howland, & Hereen, 1996). The intervention began in 1988 and ended in 1993. A competitive proposal process was used to select six program communities for the trial. The six intervention communities were compared with five matched communities that also submitted applications but were not funded. The remaining communities of Massachusetts served as a comparison group as well. Outcome data were collected for the period 5 years before and after the intervention.

From the mayor’s office in each intervention community, a full-time coordinator organized a task force of private citizens, organizations, and public officials. Each year, the intervention communities received approximately $1 per inhabitant in program funds. One-half of these funds supported the program coordinator. The balance provided for increased law enforcement, other program activities, and educational materials. The intervention also encouraged citizens to volunteer their time to program activity. In each intervention community, active task force participation ranged from 20 to 100 individuals, and about 50 organizations participated in each of these cities (Hingson et al., 1996).
In the Massachusetts Saving Lives Program, the intervention communities were responsible for developing most of the program activities. Communities adopted such objectives as reducing alcohol-impaired driving, speeding, “running” red lights, failing to yield to pedestrians in crosswalks, and failing to use seat belts. To address the problems of drinking and driving and speeding, intervention communities implemented media campaigns, sobriety checkpoints on roadways, speed-watch telephone hotlines, alcohol-free prom nights, beer keg registration, police surveillance of alcohol outlets, and a number of other activities. To address the problems of pedestrian safety and seat belt use, intervention communities conducted media campaigns and police checkpoints, posted crosswalk signs warning motorists of fines for failure to yield, increased the number of crosswalk guards at schools, and other activities (Hingson et al., 1996). The effects of the Massachusetts Saving Lives Program were positive. For example, among drivers under the age 20, the proportion reporting driving after drinking in random-digit-dialing telephone surveys decreased from 19% in the first year of the trial to 9% in subsequent years. In the comparison cities, there was little change on this measure. A 7% increase in seat belt use was observed in the intervention cities, a significantly greater increase than found in the comparison cities. Fatal motor vehicle crashes declined from 178 during the 5 preintervention years to 120 during the 5 intervention years, representing a 25% greater reduction than existed in the remainder of the state. Moreover, fatal crashes involving alcohol decreased by 42%, and the number of fatally injured drivers with positive blood alcohol levels was reduced by 47% compared to the rest of the state. The evaluation found that all six of the intervention cities had greater decreases in fatal and alcohol-related fatal crashes than did the comparison cities or the rest of the state (Hingson et al., 1996).

**Lessons Learned about Community Interventions**

Four conclusions can be drawn from this review of comprehensive community interventions. First, most of the trials reviewed here produced reductions in substance abuse and related problems (e.g., drinking and driving) and/or increased protective actions in the community (e.g., refusing alcohol sales to minors). These findings indicate that community interventions can be designed to effectively address substance abuse problems. Second, though community interventions have the potential to produce far-reaching effects, including an impact on high-risk, “hard-to-reach” groups, the size of the effects generated from these interventions is often relatively small. For instance, the MPP reduced adolescent alcohol use by an estimated 5% (Pentz et al., 1989). Thus, it becomes a matter of judgment as to whether the costs of an intervention are justified when the effect size is not large. Third, the design of the interventions reviewed here suggests that positive
outcomes depend on combining community mobilization and local policy change with public education and awareness activities (Hingson & Howland, 2002). Sole reliance on substance abuse education and awareness activities does not seem to be adequate community prevention strategy. Fourth, interventions that can somehow foster and promote community collaboration, input, and ownership seem to be more likely to succeed than those interventions that are imported from outside the community.

**The Participatory Research Approach**

In the field of public health, there has long been a tension between researchers, who believe it is necessary to investigate research questions, and practitioners and citizens, who favor action, community development, and possibly social change. These tensions have led to appeals to researchers to better serve the needs of community members by treating them more as research “users” than merely as research “subjects.” On this point, Brownson, Baker, and Kreuter (2001) commented: “It is recognized increasingly that effective research in communities should be conducted *with* and *in* communities rather *on* communities” (p. vii). Thus, researchers have been challenged to be more attentive to the application of research findings, their dissemination, and the formulation of best-practice guidelines for practitioners. It is in this context that the concept of “participatory research” has become a dominant theme in public health practice in recent years (Green & Mercer, 2001).

Participatory research is not a specific research method but, rather, a mindset and an approach that attempts to engage all potential users of the research in the community (and possibly elsewhere, e.g., state health department) in the generation of the research questions and the implementation of the research itself (Green et al., 1995). The core beliefs of the participatory research approach are that public health research can be (1) sensitive to unique circumstances in a specific locale, (2) under local control, (3) trusted by communities and involve collective decision making, and (4) conducted without compromising the quality of the evaluation (Brownson et al., 2001; Mercer, MacDonald, & Green, 2004).

A range of participatory research approaches exist, such that any specific community’s participation in public health research will vary by project (Green & Mercer, 2001). Maximum community participation would involve collaborating with stakeholders to identify research questions, select research methods, and assist in data analysis and interpretation and the application of findings. Minimum community participation is limited to formative work at the beginning of a research project and to interpretation and application at the end of an investigation. Proponents argue that integrating stakeholder values into the design of participatory research
projects does not compromise the scientific integrity of the study and its evaluation.

Though U.S. government funding for participatory research has been limited thus far, the approach has shown promise (Frankish et al., 1997; Langton, 1995; Mercer et al., 2004; Minkler & Wallerstein, 2003). This optimism is based on the democratic and inclusive values that are implicit in the approach. Nevertheless, at this point, significant questions remain about (1) the extent to which communities are interested in, and capable of, participating in public health research, and (2) the potential of this research process to produce knowledge that has generalizibility and usefulness beyond the specific community or communities in which it was applied (Green et al., 1995).

The Community Mobilization Approach

Wagenaar, Gehan, Jones-Webb, Toomey, and Forster (1999) have outlined a process for mobilizing communities to take action to change local institutional policies on substance abuse issues. The seven stages identified in Table 3.8 are not sequential sets of activities, however. Rather, during a mobilization effort, there typically is ongoing work in other stages, but perhaps at a lower level of intensity, when the focus turns to a new stage. Action and vigor characterize community organizing. Wagenaar et al. (1999) describe the functions of the organizers at each stage as “advising, teaching, modeling, persuading, selling, agitating, facilitating, coaching, confidence-building, guiding, mobilizing, inspiring, educating, and leading” (p. 317).

Both the community mobilization model and the participatory research model recognize the need for collaborative work and community input. However, the community mobilization model is the more strategic and targeted approach; the investigator determines the specific aims of the research, and these goals may not be the highest health priorities in the community. In contrast, the participatory research model is more egalitarian and allows communities to set the priorities and decide the direction of the research to best meet their needs. Although this latter emphasis may present communities with special opportunities, and thus at first appear to be an obvious advantage of the participatory research model, it should be kept in mind that substance abuse problems may become secondary or even low priorities in comprehensive initiatives seeking to enhance public and community health. For example, Green (1992), a proponent of participatory research, has suggested that alcohol abuse would seldom if ever be identified by a community as its number-one health problem. The community mobilization model might be more appropriate for public health problems that require the community to be coaxed to address them.
Historically, the U.S. federal government spent most of its drug control dollars on interdiction and law enforcement, with substantially smaller amounts of funds directed to prevention and treatment (Haaga & Reuter, 1995; U.S. Office of National Drug Control Policy, 2004). This longstanding “war-on-drugs” policy, begun during the Nixon Administration, may be changing as recognition grows among both conservatives and liberals that this approach has not achieved the goals for which the nation had hoped when it was implemented in the early 1970s (Smith, 2009). The continual appearance of new and recurring drug problems, including the drug trade and related violence in Mexico, the return of opium production in Afghanistan, the domestic epidemic of narcotic pain medication abuse, and many others, have prompted shifts in the U.S. national drug control strategy (U.S. Office of National Drug Control Policy, 2012). The new policy does not endorse drug legalization, but does promise a more nuanced approach.
that devotes more resources to prevention, treatment, and recovery based on a public health model. At the center of the new policy is the principle that drug addiction is a disease of the brain and not a moral failing (U.S. Office of National Drug Control Policy, 2012).

More than a decade ago, Des Jarlais (2000) laid out criteria for a policy change in drug control efforts based on a public health model. First, such a policy would have to rely on science and recognize that psychoactive substance use is nearly a universal human experience. Second, heavy emphasis would be placed on the prevention of substance use, particularly the primary prevention of cigarette smoking. Third, there would be a shift in public policy so that treatment would become the primary method for addressing problems of illicit drug abuse. Fourth, harm reduction strategies (see Chapter 11) would be adopted by communities to help active users protect themselves from modifiable risks and to possibly motivate them to move toward abstinence. Fifth, the development of a drug control policy would explicitly consider the potential benefits of some forms of psychoactive drug use in some situations (Des Jarlais, 2000).

Judged by Des Jarlais criteria, the federal government’s new national strategy does not represent a bold step away from law enforcement and toward a public health and safety model. Instead, the new strategy signals a gradual shift in direction that it hopes will gain support in national politics. The strategy itself identifies the need for a process of reform and rebalance, and an approach that is flexible and adaptable. Although it effectively outlines the challenges faced by the United States, the national drug control strategy remains short on specific steps and actions to be taken to implement the new policy in an impactful way. In addition, only 5.4% of the federal spending on national drug control for fiscal year 2013 was proposed to be spent on prevention (U.S. Office of National Drug Control Policy, 2012). Most funds were devoted to law enforcement and interdiction. Thus, it remains to be seen whether changes in U.S. drug control policy will actually be implemented in a meaningful way.

Why is it unlikely that public health concepts will entirely supplant law enforcement-centric policies? Among the impediments are a basic human fear of pleasure and the enduring belief that it must be regulated (Linden, 2011). Throughout human history, the widespread ambivalence about the experience of pleasure has been the fuel for drug regulation and prohibition. Another obstacle to a public health approach is simply the fear of change. Many citizens underestimate the hazards of some current forms of legal drug use, such as cigarette smoking, and possibly overestimate the dangers of some types of drug use that are currently illegal, such as marijuana use as an adjunct to cancer chemotherapy. Misplaced moral judgments also serve as hindrances to adopting a public health model. The tendency to condemn the drug user is well ingrained in U.S. culture. Finally, the widespread adoption of public health approaches could threaten the
economic status quo of U.S. industries (e.g., tobacco companies) that benefit from either the manufacture of legal drugs or the incarceration of illicit drug users.

### REVIEW QUESTIONS

1. What is the focus of public health and how is it different from medicine?
2. What were the public health achievements of the 20th century?
3. What are the competing visions of public health in the United States?
4. How can the triad model of causation be applied to substance abuse and dependence?
5. What are examples of national surveillance systems on substance use and abuse?
6. From a prevention perspective, why is age of onset an important issue?
7. Does existing scientific evidence support the view that marijuana use is a gateway to other illegal drug use?
8. Have prevention programs been shown to reduce substance use in youth?
9. What factors influence the diffusion of prevention programs?
10. Does the research literature support the use of community coalitions to address substance abuse problems in the community?
11. Overall, what lessons have been learned from community interventions seeking to reduce substance use and abuse?
12. What is the participatory research approach and how is it different from the community mobilization approach?
13. What are the prospects in the United States for a drug control policy based on public health concepts?
Historically, the classification of mental disorders by the psychiatric profession was driven by a desire to identify discrete, independent illnesses (Faraone, Tsuang, & Tsuang, 1999). Although comorbidity was recognized, early versions of the American Psychiatric Association’s *Diagnostic and Statistical Manual of Mental Disorders* (DSM) encouraged diagnostic hierarchies that focused attention on a “primary” disorder while assigning less clinical significance to the “secondary” disorder, and frequently substance abuse or dependence was considered the secondary disorder. However, as a result of epidemiological research (reviewed later) as well as clinical experience, the emphasis on hierarchical approaches to diagnosis and treatment gradually waned (Mueser, Noordsy, Drake, & Fox, 2003).

Today the co-occurrence of substance use disorders with other psychiatric conditions is recognized as a pervasive feature of the mental health problems experienced in the general population and in clinical samples (McGovern, Xie, Segal, Siembab, & Drake, 2006). In part, the comorbidity of substance abuse and severe mental illness, specifically, can be traced to the deinstitutionalization movement that began in the United States in the 1960s and continued through the 1980s (American Hospital Association, 1995). Prior to the 1960s, persons with severe mental illness (typically schizophrenia) were confined indefinitely in state psychiatric facilities. Now they are treated in community-based programs and thus are often left unprotected from the dangers of street life, including alcohol and illicit drug use. As Drake and Wallach (1999) observed more than a decade ago, “Like homelessness itself, a comorbid substance use disorder is an
unintended consequence of a deinstitutionalization policy that paid more attention to closing hospitals than to providing affordable housing that is also safe from the predators of urban street culture” (p. 589).

Today, the co-occurrence of substance abuse and severe mental illness has become an obvious public health problem in the United States (Greenberg & Rosenheck, 2008; 2010). According to the 2006 results from the National Survey on Drug Use and Health (Substance Abuse and Mental Health Services Administration [SAMHSA], 2007), 5.6 million adult Americans, or about 1.8% of the U.S. population, report experiencing a comorbid condition involving serious psychological distress and a substance use disorder. A national study of Canadians found a similar proportion of the population in that country (1.7%) (Rush et al., 2008). In the United States, 49% of persons with co-occurring disorders had not received treatment for either condition in the previous 12-month period (SAMHSA, 2007). Only 8.5% of them received treatment for both their substance abuse and mental health problems (Clark, Power, Le Fauve, & Lopez, 2008).

This chapter first reviews the epidemiology of comorbid disorders to establish the broadest picture of the problem in the United States. Comorbidity should be recognized as a heterogeneous problem in the general population—it clearly takes many forms. Consistent with conventional clinical practice, in this chapter the term dual diagnosis is reserved for the subset of co-occurrences that involve a substance use disorder and a severe mental illness, such as schizophrenia or bipolar disorder (Drake & Mueser, 2000). After the epidemiology section, we review explanatory models of comorbidity and integrated treatment.

**The Epidemiology of Comorbidity in the United States**

The National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) is the largest (N = 43,093) and most comprehensive surveillance study ever conducted on alcohol and drug use and their associated comorbidities (B. F. Grant et al., 2006a, 2006b). Conducted by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) in 2001–2002, the NESARC is a nationally representative face-to-face retrospective survey of American adults, ages 18 and older. The 2001–2002 survey was the first wave of an ongoing longitudinal study (second wave conducted in 2004–2005). Interviews were conducted in households randomly selected from a U.S. Census Bureau sampling frame. The sampling frame also included group living quarters such as college residence halls, boarding houses, and shelters.

The NESARC relied on a structured diagnostic interview that assessed alcohol and drug use, mood, anxiety, and personality disorders and
treatment seeking for these same disorders in the prior 12-month period. DSM-IV (American Psychiatric Association, 1994) criteria were used to design the survey instrument. Efforts were made to distinguish between psychiatric symptoms that represent independent mental disorders and those that were the consequence of drug intoxication and withdrawal. The NESARC assessed the following drugs: sedatives, tranquillizers, heroin, opiates other than heroin and methadone, stimulants, hallucinogens, cannabis, cocaine and crack, inhalants/solvents, and other drugs. Schizophrenia and bipolar disorder were not assessed by the interview (though mania and hypomania were included). The overall survey response rate was 81%.

Findings from the NESARC document the pervasiveness of mental health and substance abuse problems in the United States. In 2001–2002, the survey yielded past-year prevalence estimates indicating that about 15% of the U.S. population met DSM-IV criteria for one or more personality disorders, followed by any anxiety disorder, 11%; any mood disorder, 9%; alcohol dependence, 4%; and any drug dependence, 1% (B. F. Grant et al., 2006a, 2006b). Table 4.1 shows the prevalence of mood, anxiety,

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<table>
<thead>
<tr>
<th>Coexisting condition</th>
<th>Alcohol dependent (%)</th>
<th>Drug dependent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any mood disorder</td>
<td>27.5</td>
<td>55.0</td>
</tr>
<tr>
<td>Major depression</td>
<td>20.5</td>
<td>40.0</td>
</tr>
<tr>
<td>Dysthymia</td>
<td>4.6</td>
<td>16.7</td>
</tr>
<tr>
<td>Mania</td>
<td>7.6</td>
<td>18.0</td>
</tr>
<tr>
<td>Hypomania</td>
<td>5.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Any anxiety disorder</td>
<td>23.4</td>
<td>43.0</td>
</tr>
<tr>
<td>Panic disorder with agoraphobia</td>
<td>1.8</td>
<td>5.3</td>
</tr>
<tr>
<td>Panic disorder without agoraphobia</td>
<td>4.7</td>
<td>10.3</td>
</tr>
<tr>
<td>Social phobia</td>
<td>6.2</td>
<td>12.9</td>
</tr>
<tr>
<td>Specific phobia</td>
<td>13.8</td>
<td>22.3</td>
</tr>
<tr>
<td>Generalized anxiety disorder</td>
<td>5.7</td>
<td>17.2</td>
</tr>
<tr>
<td>Any personality disorder</td>
<td>39.5</td>
<td>69.5</td>
</tr>
<tr>
<td>Avoidant</td>
<td>7.7</td>
<td>18.2</td>
</tr>
<tr>
<td>Dependent</td>
<td>2.5</td>
<td>10.1</td>
</tr>
<tr>
<td>Obsessive–compulsive</td>
<td>15.2</td>
<td>28.7</td>
</tr>
<tr>
<td>Paranoid</td>
<td>15.8</td>
<td>33.2</td>
</tr>
<tr>
<td>Schizoid</td>
<td>8.2</td>
<td>21.0</td>
</tr>
<tr>
<td>Histrionic</td>
<td>10.2</td>
<td>20.6</td>
</tr>
<tr>
<td>Antisocial</td>
<td>18.3</td>
<td>39.5</td>
</tr>
</tbody>
</table>

*Note. N = 43,093. Data from B. F. Grant et al. (2006a, 2006b).*
and personality disorders among adult Americans who also met criteria for alcohol dependence and other drug dependence.

Among individuals with alcohol dependence in the general U.S. population, it appears that about 40% met criteria for a personality disorder, 28% had a mood disorder, and 23% had an anxiety disorder. The most common specific diagnosis among alcohol-dependent individuals was major depression (20.5%). These comorbid conditions appeared at considerably higher rates in drug-dependent individuals. For instance, 70% of drug-dependent persons met criteria for a personality disorder, with 55% having had a mood disorder and 43% an anxiety disorder. Among those with a drug dependency, major depression (40%) and antisocial personality disorder (39%) were the most common specific diagnoses. These findings clearly document that the co-occurrence of mood, anxiety, and personality disorders with both alcohol dependence and drug dependence are pervasive in the U.S. population (B. F. Grant et al., 2006a, 2006b).

The NESARC 2001–2002 data also establish that the associations between substance dependence and mood, anxiety, and personality disorders are of substantial magnitude and unlikely to be due to sampling error (B. F. Grant et al., 2006a, 2006b). The odds ratios (ORs) appearing in Table 4.2 represent the odds of having a coexisting condition among individuals with nicotine, alcohol, or any other drug dependence relative to the odds of having the same coexisting condition in those individuals not dependent on that specific substance. An OR equal to 1.0 indicates no difference between the two groups in the odds of having a coexisting condition. When the accompanying 95% confidence interval (CI) does not encompass the OR of 1.0, then we can be confident that the observed co-occurrence between the specific type of substance dependence and a mental health problem is not likely due to chance (i.e., it is statistically significant).

As can be seen in Table 4.2, the ORs range from 2.2 to 26.0, representing relatively strong associations that are all statistically significant. For instance, alcohol-dependent persons were 3.1 times more likely than non-alcohol-dependent persons to have had generalized anxiety disorder in the past 12 months; and drug-dependent individuals were 13.9 times more likely than non-drug-dependent individuals to have had mania in the past 12 months (each mental health condition unrelated to drug intoxication or withdrawal).

Many of the largest ORs in Table 4.2 represent associations involving personality disorders. For example, compared to nondependent individuals, drug-dependent persons were 18.5 times more likely to have met criteria for antisocial personality disorder and 26.0 times more likely to have been diagnosed with dependent personality disorder. Personality, mood, anxiety, and psychotic disorders are particular concerns because they are predictive of accelerated transition from first use to dependence (Lopez-Quintero et al., 2011).
Comorbidity among Persons Who Seek Treatment

The 2001–2002 NESARC found that relatively small percentages of persons with substance use, mood, and anxiety disorders sought treatment for these conditions (B. F. Grant et al., 2006a). In the previous 12-month period, only 5.8% of those diagnosed with alcohol abuse or alcohol dependence sought treatment, compared to 13.1% meeting criteria for any drug abuse or drug dependence diagnosis. Among those with mood disorders, 26.0% sought treatment for these conditions. Among those with anxiety disorders, 12.1% sought treatment.

An important set of findings from the 2001–2002 NESARC reveals that many persons who seek treatment for a mood or anxiety disorder also have some type of substance use disorder (B. F. Grant et al., 2006a). Table 4.3 shows that 15.4% (panic disorder without agoraphobia) to 31.0% (hypomania) of persons seeking treatment for specific mood or anxiety disorders in the past year had coexisting substance use problems during the same time period. These findings are of considerable clinical significance.
because if a substance use disorder is not recognized in the treatment of mood and anxiety disorder, the prognosis for both disorders may be poor.

The findings from the 2001–2002 NESARC indicate that the co-occurrence of alcohol/drug problems with mental health problems represent a common psychiatric syndrome in the U.S. population. Thus, comorbidity should be an expectation rather than viewed as the exception (SAMHSA, 2002). Persons with substance dependence disorders (alcohol and other drugs) are much more likely to have a coexisting mood, anxiety, or personality disorder than persons without substance dependence diagnoses. These mental health problems appear to be independent of alcohol/drug intoxication and withdrawal. Furthermore, many persons who seek treatment for mood or anxiety disorders have a substance use disorder as well, which highlights the need for careful, systematic client assessment and integrated treatment of both disorders. As noted by SAMHSA (2002) in a report to the U.S. Congress: “Improving the Nation’s public health demands prompt attention to the problem of co-occurring disorders” (see Executive Summary). Unfortunately, little progress has been made in the past decade.

**Levels of Comorbidity across Patterns of Substance Dependence**

Kandel, Huang, and Davies (2001) examined the extent to which individuals with one or more drug dependencies had coexisting major depression or any anxiety disorder (i.e., a mood disorder of some type). The investigators found that a single dependence on nicotine, alcohol, or illicit drugs had similar degrees of association with the mood disorders. However, dual dependence on both a licit (nicotine or alcohol) and an illicit drug was
associated with nearly a doubling of the odds of a coexisting mood disorder. The odds of having a coexisting mood disorder did not appear to be elevated by a dual dependence on nicotine and alcohol, however. Kandel and colleagues concluded that persons seeking treatment for dependencies that involve both a licit and an illicit drug will likely be those most in need of mental health services. In other words, a dual dependence of this type may be a marker for other psychiatric problems.

**Lifetime Comorbidity in Cannabis-Dependent Persons**

The use of cannabis (marijuana) is a significant public health issue. Among the illegal substances, cannabis is the most widely used drug in the United States, with an estimated 17.4 million past-month users in 2010 (SAMSHA, 2011). The drug also is the source of a great deal of controversy and public debate because many users and groups that advocate for reform of marijuana laws contend that the drug causes little harm (see www.norml.org).

In this context, it is useful to consider the rates of lifetime comorbidity among cannabis-dependent persons. In a national probability sample of Americans, ages 15–54, Agosti, Nunes, and Levin (2002) found that with only the exception of mania, cannabis-dependent persons were much more likely to have had a DSM-III diagnosis in their lifetime than non-cannabis-dependent persons. For instance, individuals dependent on cannabis at the time of a diagnostic interview were found to be almost 18 times more likely to also have met criteria for alcohol dependence in their lifetime, compared with individuals not dependent on cannabis. Furthermore, among the cannabis-dependent subsample, fully 70% also had been alcohol dependent at some point in life, 32.7% had experienced major depression, and 29.0% had social phobia. Overall, Agosti et al. (2002) found that 90% of the cannabis-dependent persons had some mental disorder in their lifetime, compared to 55% of those who were not dependent on cannabis.

Although these associations should not be interpreted as evidence that cannabis causes mental disorder or that cannabis is used to self-medicate psychological disturbance, it does appear that dependence on the drug is often one feature of a broader psychiatric profile. Clearly, persons dependent on marijuana have elevated lifetime risks for a variety of mental disorders. These findings underscore the need to identify coexisting conditions among cannabis-dependent individuals who present for treatment or for other forms of professional assistance.

**Comorbidity among Adolescents**

At this time, relatively little is know about the prevalence of comorbid substance abuse and psychiatric disorder in the general population of
adolescents. In a review of the existing literature, Armstrong and Costello (2002) found just 15 studies that investigated this issue. A synthesis of these studies led these investigators to estimate that about 60% of teenagers with substance use, abuse, or dependence probably had a coexisting psychiatric condition. Most commonly associated with substance use, abuse, and dependence were conduct disorder and oppositional defiant disorder, followed by depression. The association between substance use disorder and attention-deficit/hyperactivity disorder was not found to be strong. Evidence was found to support the view that psychopathology in childhood (particularly conduct disorder) is predictive of early-onset substance use and abuse in adolescence. These epidemiological findings are consistent with results from a twin study that sought to elucidate the relationship between conduct disorder and alcohol dependence by teasing out the specific influence of “behavioral undercontrol” (i.e., the personality traits of impulsivity, thrill seeking, rebelliousness, nonconformity, and aggressiveness). In that study, Slutske et al. (2002) found that genetic variables influencing the expression of behavioral undercontrol may account for about 40% of the variation in risk for conduct disorder and alcohol dependence.

_Mental Disorders Predict Subsequent Involvement in Nicotine, Alcohol, and Other Drug Use_

Thus far, the review of comorbid relationships between mental disorders and substance use has examined only retrospective studies reported in the research literature; that is, assessments have determined that mental health problems and substance abuse problems co-occur at rates greater than those expected by chance during a past period of time, such as the prior 12 months. A stronger research design is the prospective study that follows a cohort of individuals into the future to assess the development of outcomes of interest—in this case—substance use disorders. Prospective studies are generally regarded as providing stronger evidence of the etiology of disorders in humans than retrospective studies, in part because recall errors are reduced (Friedman, 2004).

Swendsen et al. (2010) recently reported the results from a rigorous prospective study examining the role that mental disorders play as risk factors for the subsequent development of nicotine, alcohol, and other drug abuse and dependence. The research team reassessed a cohort of 5,001 individuals 10 years after they had participated in the National Comorbidity Survey (NCS) in 1990–1992. The NCS relied on a nationally representative sample of people, ages 15–54 years of age, living in noninstitutionalized settings in the 48 coterminous states. Analyses controlled for the effects of age, sex, race, education, marital status, number of children, region, urbanicity, and employment status.
Swendsen et al. (2010) found that over the 10-year period between baseline and follow-up assessments, 10.4% of the sample had developed nicotine dependence, 1.1% had developed alcohol dependence, and 0.9% had developed drug dependence. The global effects of mental disorders positively predicted the onset of all three substance addictions, with the strongest predictive relationship being observed specifically with drug dependence, followed by alcohol dependence and then nicotine dependence. Across all three substance addictions, the number of lifetime mental disorders a person had experienced was an important risk factor for developing substance abuse problems. Intermittent explosive disorder, attention-deficit/hyperactivity disorder, and bipolar disorder were the strongest specific predictors of drug dependence. Alcohol dependence was best predicted by intermittent explosive disorder, oppositional defiant disorder, and bipolar disorder. Nicotine dependence was best predicted by bipolar disorder, oppositional defiant disorder, conduct disorder, antisocial personality disorder, attention-deficit/hyperactivity disorder, and any mood disorder. Swendsen et al. (2010) conclude that many mental disorders contribute to the development of substance abuse problems, and it may be the cumulative impact of multiple types of psychological distress and disruptive patterns of behavior that set the stage for addiction.

**Explanatory Models**

The epidemiological data reviewed thus far indicate that substance use disorders co-occur with other psychiatric disorders at rates far exceeding that explained by chance or coincidence. Unfortunately, these data do little to elucidate the nature of these comorbid conditions. Much work has been devoted to establishing the onset order of the co-occurring disorders (e.g., Does alcohol dependence typically predate the onset of major depression?). Though important, questions about order of onset fail to address the most fundamental issues at a nosological level. When comorbidity is observed, does it truly represent the presence of two distinct disorders or instead an uninformed appraisal that does not recognize a third independent disorder that encompasses the broader symptomatology of the comorbid condition? For instance, Pani et al. (2010) contend that current DSM-based nosology is inadequate and that anxiety, mood and impulse-control dysregulation should be considered core features of the psychopathology of addiction. In the co-occurrence of substance use and other psychiatric problems, these issues of classification are among the most pressing questions for both clinical practitioners and researchers.

Table 4.4 identifies 10 models that attempt to clarify the association between substance use and other psychological problems (Neale & Kendler, 1995). The question each model attempts to address also appears in
the table. Chance, sampling bias, and population stratification are models that assert that comorbid conditions are nothing more than artifacts (i.e., the co-occurrence is not significant or meaningful). Clearly, the epidemiological data reviewed here indicate that this is not the case. However, these models are useful for helping us to clarify our understanding of the nature of comorbidity, and thus have been included in Table 4.4.

The model labeled *alternative forms* maintains that the co-occurrence of substance use and other psychological problems arises from a single risk factor with a single threshold of severity (Agrawal et al., 2004). Others have referred to this as a *common factor model* (Mueser, Drake, & Wallach, 1998; Mueser, et al., 2003; NIAAA, 1994). Regardless, the model proposes that a risk factor increases the risk for both substance use and psychiatric disorder. The common risk factors most discussed in the research literature are genetic vulnerability, antisocial personality disorder, disordered

<table>
<thead>
<tr>
<th>Name</th>
<th>Question posed by the model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chance</td>
<td>Is the co-occurrence of the disorders due simply to chance?</td>
</tr>
<tr>
<td>Sampling bias</td>
<td>Do we overestimate the prevalence of comorbid conditions in the general population because our observations are derived from a clinical population that has been referred for treatment?</td>
</tr>
<tr>
<td>Population stratification</td>
<td>Do we overestimate the prevalence of comorbid conditions in the general population because we fail to account for subgroup differences, such as socioeconomic status or other stratification variables?</td>
</tr>
<tr>
<td>Alternate forms</td>
<td>Is there one underlying risk factor that gives rise to both disorders?</td>
</tr>
<tr>
<td>Random multiformity</td>
<td>Does the comorbid condition represent an atypical form of one of the disorders with symptoms that overlap with those of the second disorder?</td>
</tr>
<tr>
<td>Extreme multiformity</td>
<td>Does the atypical form arise only after risk factors for either or both of the disorders reach extreme levels?</td>
</tr>
<tr>
<td>Three independent disorders</td>
<td>Does the comorbid condition represent a third disorder that is distinct from the other two disorders?</td>
</tr>
<tr>
<td>Correlated liabilities</td>
<td>Do the two disorders have a high probability of co-occurring because they arise from a set of shared risk factors?</td>
</tr>
<tr>
<td>Causation</td>
<td>Is one disorder a risk factor for the subsequent onset of the other disorder?</td>
</tr>
<tr>
<td>Reciprocal causation</td>
<td>Regardless of which disorder appears first, do the two disorders exacerbate one another with the passage of time?</td>
</tr>
</tbody>
</table>
mesolimbic activity in the brain, and poverty (Mueser et al., 2003). One landmark study in molecular genetics found that a variation in the muscarinic acetylcholine receptor M2 is a risk factor for the associated clinical characteristics of both alcohol dependence and major depression (Wang et al., 2004). More recently, a form of comorbid bipolar alcoholism has been linked to genetic risk factors of the central nervous system (Lydall et al., 2011). The investigators believe that the presence of bipolar disorder may lower the threshold necessary for the expression of alcoholism risk genes. Findings such as these give rise to speculation that in the future, other shared and specific genetic risk factors may be found to underlie a variety of comorbid conditions.

Random multiformity and extreme multiformity are models that assume that one disorder can take heterogeneous or atypical forms (Klein & Riso, 1993). In such situations, symptoms will appear that are typically associated with other disorders. Thus, multiformity does not represent true comorbidity but, instead, “indicates that the boundaries of a disorder have been drawn in the wrong place” (Klein & Riso, 1993, p. 44). Extreme multiformity is a variant model that assumes the atypical form will appear only when the severity of the risk factors for either or both of the disorders is at elevated thresholds. For instance, the co-occurrence of cannabis dependence and social phobia (an anxiety disorder) might not be likely to occur unless the frequency of marijuana smoking reaches some high threshold or there exists an extensive family history of anxiety disorder. These models challenge conventional diagnostic criteria, which do not rely on specific subcriteria for establishing diagnostic boundaries and symptom thresholds.

The model known as three independent disorders assumes that the comorbid condition is actually a distinct disorder itself. Neale and Kendler (1995) describe this model as “somewhat implausible” (p. 941). It is the only model that asserts that the co-occurrence arises from a process that is completely separate from those that instigate the development of the other two disorders.

The correlated liabilities model proposes that comorbid conditions arise because prevalent forms of co-occurrence tend to share common sets of risk factors (Neale & Kendler, 1995). Though any two disorders will have common and unique risk factors, the overlapping of them will contribute to a rate of co-occurrence that is higher than that expected by chance. For example, the co-occurrence of substance dependence and depression in adolescence may arise from a variety of forms of neglect and abuse experienced during childhood.

The straightforward causation model asserts that one disorder operates as a risk factor for the subsequent onset of a second disorder. For instance, alcohol dependence causes major depression. Causation models assert that one disorder predates the other in time of onset. Two types of causation models have been proposed to specify the order of onset of
substance use and other psychiatric disorders (Mueser et al., 2003). The secondary substance abuse model proposes that psychopathology precedes and causes substance abuse. In contrast, the secondary psychiatric disorder model maintains that substance abuse precedes and causes psychopathology.

Finally, the **reciprocal causation** model proposes that over time, substance use and psychopathology will exacerbate one another. Arising from clinical observations, this model is less concerned with the order of onset of the disorders and is more focused on integrated treatment options (Mueser et al., 2003). In addition, the reciprocal causation model tends to emphasize the role of multiple risk factors in the immediate social environment of the dual-diagnosis patient, including negative peer influences, employment problems, and limited recreational opportunities.

**Problem Behavior Theory: A Social-Psychological Framework for Explaining Comorbidity**

One alternative framework for understanding the co-occurrence of substance abuse and other mental health problems is problem behavior theory (Jessor & Jessor, 1977; Jessor et al., 1991). The result of longitudinal research on the development of adolescents and young adults, this social-psychological model maintains that human behavior is the result of person–environment interaction. The theory consists of three interdependent systems of variables: (1) the behavior system, which encompasses a conventional behavior syndrome or a problem behavior syndrome (substance abuse, low academic achievement, aggression, etc.); (2) the personality system, which particularly includes such variables as achievement motivation, affiliation–alienation, self-esteem, and mental health; and the perceived environmental system, which includes “perceived controls and instigations from significant others in the life space, particularly parents and friends” (Jessor et al., 1991, p. 29).

In problem behavior theory, the variables from each system represent either instigations or controls that, in combination, generate “proneness” or the probability of resultant problem behavior. Although proneness can exist in one, two, or all three of the systems, overall *psychosocial proneness* is the central concept of the theory and is used to predict and explain variation in problem behavior. Psychological proneness can be considered the “outcome of the balance of instigation toward and controls against engaging in problem behavior” (Jessor et al., 1991, p. 19). In essence, the psychological concepts of instigations and controls can be thought of as analogous to the epidemiological notions of risk and protective factors.

A major proposition of this theory is that problem behaviors are highly interrelated (Jessor & Jessor, 1977). That is, *multiple* problem behaviors (often more than two) tend to co-occur within individuals. The data
collected by Jessor and colleagues suggest that it is relatively unusual for individuals to have just one problem behavior. Instead, these problems tend to co-occur in prone individuals. For instance, Jessor and colleagues have noted that individuals who smoke cigarettes are much more likely to engage in a range of risk behavior, including sexual risk taking, drinking and driving, and other deviant behavior.

The tendency of multiple problem behaviors to cluster within individuals is described as problem behavior syndrome. The syndrome concept implies that a common factor (psychosocial proneness) underlies the development of different types of problem behaviors. The structural equation models created by Jessor et al. (1991) provide strong evidence to support the syndrome concept of both problem behavior and conventional (nonproblem) behavior. More than one-half of the variance in both problem behavior involvement and conventional behavior involvement can be explained by the psychosocial measures assessed in their longitudinal investigation (Jessor et al., 1991). An important point is that “problem behavior” does not necessarily imply antisocial behavior. Rather, the term is reserved for a broad range of behaviors that undermine conventional (or normal) human psychosocial development.

Problem behavior theory does not encompass psychiatric/medical conceptions of mental illness but, instead, relies on traditional measures used in the field on social psychology. Nevertheless, the theory rests on a strong empirical foundation. Thus, the propositions of problem behavior theory have great significance for helping us to understand the co-occurrence of substance use disorder and mental health problems. In particular, the rather narrow psychiatric perspective focusing on two coexisting DSM disorders may not be an adequate or rich enough model for capturing the many psychosocial problems and life challenges of so-called dual-diagnosis patients (Drake, Wallach, Alverson, & Mueser, 2002). Our understanding of coexisting substance abuse and mental disorder may be enhanced by further interdisciplinary inquiry.

The Possible Role of Discounting Delayed Consequences

The findings from an emerging body of research in the area of behavioral economics suggest that persons with substance use disorders tend to discount both the value of delayed reinforcement and the severity of reinforcement losses encountered at a later time, compared to persons without these disorders (Bickel & Marsch, 2001; Higgins, Heil, & Lussier, 2004). In other words, substance abusers appear to prefer immediate reinforcement, even if it is of smaller magnitude, over delayed reinforcement of greater magnitude, and they prefer that punishment be delayed, even if it means that its magnitude will increase. An intriguing possibility is that increased rates of discounting may be associated with comorbidity. Substance abusers
with co-occurring antisocial personality disorder (Petry, 2002) and gambling problems (Petry & Casarella, 1999) have been found to discount delayed consequences more than substance abusers without these comorbid conditions. Furthermore, persons suffering from psychosis report that despite being aware of the long-term physical and mental consequences of substance abuse, they use drugs to obtain immediate pleasure and to find relief from dysphoria and the unpleasant side-effects of antipsychotic medication (Charles & Weaver, 2010). Thus, it is possible that in the population of mentally ill persons, comorbidity may be most likely to occur in those who have poor impulse control and are less sensitive to the longer-term contingencies associated with alcohol and drug use. More research is needed in this area.

Issues in Treating Persons with Co-Occurring Substance Use and Depression

A major challenge in attempting to help those with co-occurring substance abuse and mental health problems is engaging them in the treatment process. Low treatment attendance and high dropout rates are major problems encountered by service providers. Tate et al. (2011) investigated the predictors of treatment attendance in a 6-month clinical trial that compared integrated cognitive-behavioral therapy (ICBT) to 12-step facilitation therapy (TSF). Both treatments were delivered in outpatient groups. The clients were military veterans suffering from co-occurring substance use disorders and depression who were sequentially assigned to either ICBT or TSF. The maximum number of treatment sessions that could be attended was 36 over the 6-month period.

Treatment attendance did not differ between the two trial study conditions. In both ICBT and TSF, the mean number of attended sessions was 18 or 50% (Tate et al., 2011). The investigators found that attendance was positively correlated with age, white racial status, and use of only alcohol in the month prior to beginning treatment. In addition, clients who had a recent negative health event stayed in treatment longer. The fact that the characteristics associated with attendance cannot be changed by intervention suggests that there is a need to temper expectations about treatment outcomes in this population and perhaps shift focus to harm reduction strategies that seek to provide safe, stable housing in the community (Tsemberis, Gulcur, & Nakae, 2004).

Does antidepressant medication offer hope for helping persons with co-occurring substance use and depression? Results from a meta-analysis of 14 randomized controlled trials found that antidepressant medication provides a small positive treatment effect in this population (Nunes & Levin, 2004). There was evidence indicating that when medication was effective in relieving depression, the patient’s quantity of substance use was
somewhat reduced. However, improvement in depression was not associated with higher rates of sustained abstinence from alcohol and other drugs. The investigators concluded that provision of antidepressant medication, by itself, is not an adequate treatment and that concurrent therapies are needed to address substance abuse. Moreover, the investigators cautioned that the diagnosis of depression must be done carefully to distinguish between primary depression and substance-induced depression (Nunes & Levin, 2004).

**Substance Abuse/Dependence and Severe Mental Illness**

The term dual diagnosis is often used to refer to the subset of possible comorbidities that involve a substance use disorder and a severe mental illness—usually schizophrenia or bipolar disorder. Persons with dual diagnoses pose special challenges to communities and the treatment systems that offer them assistance because antisocial and noncompliant behavior, involvement in the criminal justice system, and risk of harm to self are relatively common features of their clinical profile (Greenberg & Rosenheck, 2008; Rush et al., 2008). Many clients with dual diagnoses find it difficult to comply with treatment expectations. Others may drop out of treatment frequently or become involved in the “revolving door” of brief inpatient treatment admissions to resolve crises associated with bouts of substance abuse. Care of these patients also stretches the fiscal resources of the treatment system. One study found that dual-diagnosis patients had treatment costs that were almost 60% higher than those for psychiatric patients without a substance use disorder (Dickey & Azeni, 1996). Although sound prevalence rate estimates are not available, for some time it has been estimated that at least 20% of the homeless population has dual diagnoses (Drake, Osher, & Wallach, 1991).

In a review of the literature on substance use disorders and severe mental illness (schizophrenia or bipolar disorder), Mueser et al. (1998) suggested that these associations may be explained by more than one model. They proposed that the features of these comorbid conditions may be of two types: an antisocial personality disorder (ASPD) model and a supersensitivity model. The ASPD model conceptualizes the co-occurrence of substance use disorder and severe mental illness as a problem of developmental psychopathology. That is, ASPD—and its childhood precursor, conduct disorder—is viewed to be the common factor that increases risk for the subsequent development of both substance use disorder and serious mental illness in young adulthood. In contrast, the supersensitivity model posits that persons with a coexisting substance use disorder and severe mental illness are extremely vulnerable to stress. Psychotherapeutic medications usually decrease this vulnerability. However, alcohol and street drug use, even in relatively small quantities, may greatly exacerbate the psychiatric
Comorbidity

Symptomatology. In essence, persons with dual diagnoses are “supersensitive” to the negative consequences of alcohol and drug use, even at low doses or infrequent use. Table 4.5 identifies the features of these two proposed models.

**Clozapine Use Associated with Reductions in Alcohol Use**

Clozapine is an atypical antipsychotic medication used to treat schizophrenia. In a 3-year study of 151 patients diagnosed with schizophrenia or schizoaffective disorder and coexisting substance abuse treated in a dual-disorder program, 36 were given clozapine for standard clinical indications (Drake, Xie, McHugo, & Green, 2000). The clozapine patients who abused alcohol averaged 12.5 drinking days while taking the medication, compared to 54.1 drinking days during 6-month intervals that the medication was withheld. The clozapine patients also improved more than patients in the study who did not receive the medication. At the end of 3 years, 79% of the clozapine patients had been in remission from alcohol use disorder for at least 6 months, compared to only 34% in a group of patients taking a typical antipsychotic medication. In a 10-year follow-up of this same group of patients with schizophrenia, assessments were made within the subgroup of patients who had achieved 6-month remissions of substance use disorder (Brunette, Drake, Xie, McHugo, & Green, 2006). In this subgroup, 8% of the patients taking clozapine experienced a substance abuse relapse during the following year, compared to 40% of those taking an antipsychotic

**TABLE 4.5. Two Models Explaining the Co-Occurrence of Substance Use Disorder and Severe Mental Illness**

<table>
<thead>
<tr>
<th>Feature</th>
<th>ASPD model</th>
<th>Supersensitivity model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of onset of substance use disorder</td>
<td>Earlier</td>
<td>Later</td>
</tr>
<tr>
<td>Quantity of substance use</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Physical dependence on a drug</td>
<td>More likely</td>
<td>Less likely</td>
</tr>
<tr>
<td>Family history of substance abuse</td>
<td>More likely</td>
<td>Less likely</td>
</tr>
<tr>
<td>Age of onset of severe mental illness</td>
<td>Earlier</td>
<td>Later</td>
</tr>
<tr>
<td>Premorbid social functioning</td>
<td>Marginal</td>
<td>Good</td>
</tr>
<tr>
<td>Social functioning</td>
<td>Poor</td>
<td>Good</td>
</tr>
<tr>
<td>Psychiatric symptoms</td>
<td>More severe</td>
<td>Less severe</td>
</tr>
<tr>
<td>Aggression</td>
<td>More likely</td>
<td>Less likely</td>
</tr>
<tr>
<td>Prognosis</td>
<td>Guarded</td>
<td>Good</td>
</tr>
</tbody>
</table>

medication other than clozapine. Though there is a need for additional research on clozapine, these studies provide preliminary evidence suggesting use of the medication is associated with reductions in alcohol and other drug abuse among persons with schizophrenia (Green, Noordsy, Burnette, & O’Keefe, 2008). Clozapine effectiveness in this population also suggests that the development of better explanatory models of comorbidity may depend on advances in the neuroscience of severe mental illness (Green et al., 2008).

**Integrated Treatment for Dual Diagnosis**

Not too long ago, discussions about treating persons with co-occurring substance abuse disorder and severe mental illness tended to focus on the most appropriate sequence of independently delivered treatment regimens (see NIAAA, 1994, pp. 51–53). Persons experiencing these problems were either treated at the same time in separate substance abuse and mental health treatment programs (i.e., parallel treatments), or they were treated in one program first, discharged, and then treated in the second program (i.e., sequential treatment). The advantages and disadvantages of these two approaches were weighed and evaluated in the context of traditional treatment delivery systems. Over the last 15 years or so, innovations have led to the development of the integrated treatment model (Drake & Mueser, 2001; Drake, Mueser, & Brunette, 2007). Though still evolving, the core feature of this model is the application of coordinated, concurrent treatment of two or more disorders in programs designed specifically for those patients with comorbid substance abuse and severe mental illness (Drake et al., 2007; Mercer, Mueser, & Drake, 1998).

During the 1990s, the dissatisfaction with the traditional treatment modalities gave rise to a set of guiding principles for the provision of integrated treatment (Drake, Mercer-McFadden, Mueser, McHugo, & Bond, 1998). For substance-abusing patients who also suffer from severe mental illness, such as schizophrenia, treatment should be provided by one integrated program that is designed to address both disorders. It is not adequate to sequentially treat one disorder and then the other at a later time. One feature, then, of integrated treatment is the employment of clinical staff members who are trained to treat both substance abuse and severe mental disorder. Another feature of integrated treatment is that many of the traditional practices used in addiction treatment programs need to be modified to properly assist those with severe mental illness. For instance, in integrated treatment, the emphasis is placed on establishing a relationship with patients and helping them to cope, whereas in traditional addiction treatment, confrontation often is used to break down denial. Furthermore, to
engage patients, integrated treatment endorses a harm reduction approach that may not insist on immediate abstinence from alcohol and illicit drugs. Consistent with this approach, there is recognition that treatment will probably be long term—at least for most patients. Thus, counseling is stage based and motivational—not confrontational. In addition, to adequately attend to crises, integrated treatment needs to be provided in facilities that can offer around-the-clock access to treatment staff. In such an environment, 12-step programs must be available, but participation should be voluntary. Finally, in integrated treatment programs, the patient’s severe mental illness is recognized as a biological disorder that usually needs to be treated with psychotherapeutic medication. Medication is not thought to compromise the treatment goals set for the substance use disorder. Table 4.6 summarizes these principles.

**Effectiveness of Integrated Treatment**

In two reviews of studies on integrated treatment, Drake et al. (1998) and Brunette, Mueser, and Drake (2004) concluded that the methodological

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**TABLE 4.6. Guiding Principles of the Integrated Treatment Model**

1. Treatment is provided by one integrated program designed to address both substance use disorder and severe mental illness.
2. The substance use disorder and the severe mental illness are treated by one team of dually trained clinicians.
3. The treatment for substance use disorder deviates from traditional “detox” and “rehab” practices and is tailored to the needs of those with severe mental illness.
4. Emphasis is placed on reducing anxiety—not breaking through denial about substance abuse.
5. Attempts are made to build trust and engage the patient in treatment—confrontation is avoided.
6. Priority is placed on reducing the harm associated with substance abuse—insistence on immediate abstinence may be counterproductive.
7. There is a recognition that treatment will probably be long term—rapid detoxification and short-term treatment followed by discharge is not realistic.
8. Counseling is stage based and motivational—not confrontational and time limited.
9. Around-the-clock access to treatment staff—not limited to daytime office hours—is essential.
10. Participation in 12-step programs is available and encouraged—but not mandatory.
11. Use of psychotherapeutic medications is based on the patient’s psychiatric and medical needs—the goals of substance abuse treatment are not seen as compromising reliance on these medications.
limitations of the research conducted to date preclude any firm conclusions about the effectiveness of the approach. Brunette et al. (2004) added that the integrated treatment model should be tested in a large, randomized clinical trial. With these caveats in mind, the available evidence suggests that simply adding dual-diagnosis groups to traditional services is not effective. Also, integrated treatment, when delivered via intensive inpatient, residential, or day treatment, does not appear effective. The dropout rate in these programs is high, presumably because of the insistence on abstinence. Low-intensity programs may be more effective. The authors found some reason to be optimistic about the prospects of newer comprehensive, integrated treatment approaches that rely on long-term, stage-based, motivational counseling. The somewhat better outcomes may be attributed to assertive outreach and possibly not insisting on immediate abstinence from alcohol and other illicit drugs.

Results from other studies bolster the view that long-term, comprehensive treatment is important for “engaging” patients with dual diagnoses (i.e., keeping them in treatment). For instance, one comparison of long-term and short-term residential programs found that at follow-up, patients with dual diagnoses in the former type of program were more likely to stay in treatment, more likely to maintain abstinence, and less likely to experience homelessness (Brunette, Drake, Woods, & Hartnett, 2001). There were no statistically significant differences between the two groups on measures of psychiatric hospitalization, incarceration, or number of moves. The investigators concluded that patients with dual diagnoses need safe, stable, sober living environments to learn skills for maintaining abstinence, and that the acquisition of these skills is less likely to occur in intensive, short-term programs that may be too challenging. Another study of long-term outcomes of integrated treatment followed 126 dual-diagnosis patients for up to 3 years (Judd, Thomas, Schwartz, Outcalt, & Hough, 2003). The study found that integrated treatment produced statistically significant improvements in quality of life, substance use, and psychiatric symptoms. Moreover, these improvements were associated with decreases in health care and criminal justice costs (Judd et al., 2003).

Unfortunately, there are significant policy and organizational impediments associated with the adoption, implementation, and maintenance of dual-diagnosis treatment programs (Clark et al., 2008; Mercer et al., 1998). One of the problems is an inadequate workforce prepared to deliver integrated treatment services (Flynn & Brown, 2008; McGovern et al., 2006). Although many states have implemented services for dual-diagnosis clients, high-quality treatment programs are the exception, not the rule (Clark et al., 2008; Flynn & Brown, 2008; Hawkins, 2009). Public investment in these programs may depend on research that can demonstrate cost-effectiveness.
Comorbidity remains one of the most poorly understood areas in the substance abuse and treatment services fields (Brady, Verduin, & Tolliver, 2007; Flynn & Brown, 2008; Kavanagh & Connolly, 2009). Although surveillance studies have begun to document the patterns of association between substance use disorders and mental disorders and have established that these associations are not due to chance, much remains to be understood about the etiology and treatment of the many types of comorbid conditions involving substance abuse and mental health disorders. Treatment study reviews on persons with co-occurring mood/anxiety and substance use disorders conclude that there is a lack of evidence for most treatment recommendations (Tiet & Mausbach, 2007; Watkins et al., 2005). Interdisciplinary research efforts may yield new insights because the questions about comorbidity range from problems in molecular genetics to those in the social environment and the public policy arena.

Clearly, there is a need to develop a service infrastructure to increase the capacity to provide accessible, integrated treatment and stable housing. At this time, the treatment system for persons with comorbid conditions is commonly described as fragmented and fraught with barriers that prevent ready access to care (e.g., Clark et al., 2008; Hawkins, 2009; Kavanagh & Connolly, 2009). Further research on integrated approaches to treating persons with dual diagnoses (i.e., substance abuse and severe mental illness) is needed. The integrated treatment model holds promise for helping this population of clients, but at this time the evidence supporting its use is not compelling (Tiet & Mausbach, 2007).

**REVIEW QUESTIONS**

1. How is the deinstitutionalization movement implicated in the problem of dual diagnoses?

2. How prevalent are co-occurring mental disorders and substance use disorders in the general population?

3. To what extent is cannabis dependence associated with lifetime risk of alcohol dependence and mental disorder?

4. Which mental disorders are most closely associated with substance abuse in adolescence?

5. Do mental disorders predict the later onset of substance use disorders?

6. Which model of comorbidity indicates that the comorbid condition represents a disorder that is distinct from the other two?
7. In problem behavior theory, why is it predicted that multiple problem behaviors cluster in individuals?

8. What is the nature of the association between discounting delayed consequences and comorbidity?

9. What are two important issues in treating persons with co-occurring substance use and depression?

10. What evidence exists to support the use of clozapine in the treatment of patients diagnosed with schizophrenia or schizoaffective disorder and coexisting substance abuse?

11. How effective is integrated treatment?
Sigmund Freud (1885–1939) made the first systematic attempt to explain the origins of mental disorders. His theory, known as psychoanalysis, and his ideas have had a lasting impact on our culture. For example, he originated the notion of defense mechanisms (denial, rationalization, etc.), brought attention to the significance of anxiety in the human experience, and was the first to give an extensive description of the unconscious mind. He pointed to the importance of early childhood experience, and he was the first to insist that human sexual behavior is an appropriate subject for scientific scrutiny.

Freud derived psychoanalytic concepts from his clinical practice. His patients were predominantly white female residents of Vienna, Austria, from the 1890s to the 1930s. Psychoanalytic models continue to influence clinical practitioners in the substance abuse field today, particularly among psychotherapists who provide long-term, insight-oriented treatment in private practice settings (Rothschild & Gellman, 2009). These concepts also have historical significance because they provide perspective on the evolution of the addiction concept and the treatment of substance abuse.

**Psychoanalysis: A Type of Psychotherapy**

The terms psychoanalysis and psychotherapy are not synonymous, though they are sometimes mistakenly thought to be. Psychotherapy is a more general term describing professional services aimed at helping individuals or groups overcome emotional, behavioral, or relationship problems. There are more than 240 methods of counseling and psychotherapy (George & Cristiani, 1995). Psychoanalysis is one of these approaches.
Traditional psychoanalysis involves an analyst and an analysand (i.e., the client). Typically, the analysand lies comfortably on a couch while the analyst sits behind him or her, out of view. Often, the analyst takes notes while the analysand describes whatever comes into his or her mind. Interestingly, Freud discouraged analysts from taking notes; he cautioned that doing so would distract their attention (Gay, 1988).

**Interpretation**

Psychoanalysis relies heavily on the analyst’s interpretation of the analysand’s concerns. To this end, the analyst encourages the analysand to say absolutely everything that comes to mind. By contrast, the analyst remains as silent as possible, hoping that this silence will stimulate uninhibited verbal activity on the part of the analysand. Gay (1988) describes the process in this way:

In the strange enterprise that is psychoanalysis, half the battle and half alliance, the analysand will cooperate as much as his neurosis lets him. The analyst for his part is, one hopes, not hampered by his own neurosis; in any event, he is required to deploy a highly specialized sort of tact, some of it acquired in his training analysis, the rest drawn from his experience with analytic patients. It calls for restraint, for silence at most of the analysand’s productions and comments on a few. Much of the time patients will experience their analyst’s interpretations as precious gifts that he doles out with far too stingy a hand. (p. 298)

**Free Association**

According to Freud, the fundamental principle of psychoanalysis is that free association should be encouraged. The analysand should be free to reveal the most sensitive things that come to mind, so that the analyst can interpret them. For this reason, the analyst positions him- or herself behind the analysand. The analyst’s reactions to shocking disclosures could cause the analysand to be distracted and inhibit the free flow of associations.

**Dream Interpretation**

Another feature of psychoanalysis is dream interpretation. Its purpose is to uncover unconscious material, which the analysand typically represses. The task of the analyst is to study the symbols presented in the dreams and to interpret their disguised meanings. Psychoanalysts believe that dreams have two types of content: manifest and latent. The manifest content is the dream as it appears to the dreamer, whereas latent content is what is disguised to the dreamer. The latent content consists of the analysand’s actual
motives that are seeking expression but that are very painful or personally unacceptable (Coleman, Butcher, & Carson, 1980).

**Resistance**

In *The Interpretation of Dreams*, Freud (1900/1953) defined resistance as simply “whatever interrupts the progress of analytic work” (p. 555). According to Gay (1988), Freud warned: “Resistance accompanies the treatment at every step; every single association, every act of the patient’s must reckon with this resistance, represents a compromise between the forces aiming at cure and those opposing it” (p. 299). For the psychoanalyst, resistance arises because the analysand becomes threatened by the uncovering of unconscious material. At such times, the analysand may attempt to change the subject, dismiss its importance, become silent, forget dreams, hold back essential information, be consistently late for appointments, become hostile, or employ other defensive mechanisms. Gay (1988) describes resistance as a “peculiarly irrational” but universal human tendency. The contradictory nature of resistance is underscored by the pointlessness of voluntarily seeking help (and paying for it) and then fighting against it.

Resistance can be viewed as a significant problem in counseling individuals with alcohol and other drug problems. Addiction practitioners who value the concept will see it in their clients and adopt helping strategies in accordance with it. Though traditional psychoanalytic thinking maintains that resistance arises from personality dynamics, Taleff (1997) and others have recognized that it has sources outside the person as well, such as counselor practices, inadequate treatment models, family and group dynamics, and the features of treatment programs. To a great extent, the challenge in helping persons with substance abuse problems is properly assessing and attending to these issues (Taleff, 1997).

**Transference**

In the process of psychoanalysis, the relationship between analyst and analysand becomes emotionally charged. In this situation, the analysand frequently applies to the analyst particular feelings, thoughts, attributes, and motives that he or she had in a past relationship with a parent or other significant person (a teacher, coach, clergyman, etc.). As a result, the analysand may respond to the analyst as he or she did to that particular person in the past. If the past relationship was characterized by hostility or indifference, the analysand may feel the same way about the analyst. The tasks of the analyst, then, are to help the analysand (1) “work through” these feelings, (2) recognize that the analyst is not the parent or significant other figure, and (3) stop living within the confines of past relationships.
In the psychoanalytic perspective, human behavior is thought to result from the interaction of three major subsystems within the personality: the *id*, *ego*, and *superego*. Although each of these structures possesses unique functions and operating principles, they interact so closely with one another that it is often impossible to separate their distinct effects on behavior. In most cases, behavior is the result of the dynamic interaction among the id, ego, and superego. Each subsystem does not typically function in the absence of the other two (Hall & Lindzey, 1978).

The *id* is the original source of the personality and consists largely of instinctual drives. Psychoanalytic theorists have a specific understanding of the term *instinct*. It is defined as an “inborn psychological representation of an inner somatic source of excitation” (Hall & Lindzey, 1978, p. 39). The psychological representation is more commonly referred to as a *wish*, *internal urge*, or *craving*. The bodily excitations that give rise to wishes or urges are called *needs*. Thus, the sensation of hunger represents the physiological need of the body for nutrients. Psychologically, this need is expressed as a wish or craving for food. In addiction, drugs become sources of bodily excitation, which in turn give rise to cravings for that chemical. The chemical craving serves to motivate the addict to seek out the drug of choice. Psychoanalysts note that addicts’ instinctual drives make them hypersensitive to environmental stimuli (offers from friends to “get high,” the smell of a burning match, advertisements for alcohol, etc.). These stimuli elicit cravings and make them vulnerable to “slips” and relapses.

The id is present from birth. It is the basic life force from which the ego and superego begin to differentiate themselves. It supplies the psychic energy necessary for the operation of the ego and superego. *Psychic energy* is defined as mental activity, such as thinking and remembering. Freud believed that the id is a bridge that connects the energy of the body to that of the personality. Interestingly, Freud noted that this psychic energy is not bound by logic and reality. It allows us to do such impossible things as to be in two places at once, or to move backward in time.

Some of the instinctual drives of the id are constructive (e.g., sex). However, others are destructive (e.g., aggression, destruction, and death). Because the id cannot tolerate increases in psychic energy (they are experienced as uncomfortable states of tension), it is identified as the component of personality that is completely selfish. The id is only concerned with immediate gratification (i.e., discharge of tension). It has no consideration for reality demands or moral concerns.

The id is said to operate via the *pleasure principle*. That is, high tension levels (e.g., sexual urges or drug cravings) prompt the id to act to reduce the tension immediately and return the individual to a comfortably constant level of low energy. Thus, the id’s aim is to avoid pain (e.g., the discomfort
of abstinence) and to increase pleasure (e.g., drug-induced euphoria). The operation of the pleasure principle makes frustration and deprivation difficult to tolerate. Obviously, both frustration and deprivation are common in early recovery, and they make the addict susceptible to relapse.

The *ego* emerges from the id in order to satisfy the needs of the individual that require transactions with the external world (i.e., reality). Survival requires the individual to seek food, water, shelter, sex, and other basic needs. The ego assists in this effort by distinguishing between subjective needs of the mind (an id function) and the resources available in the external world.

Ultimately, the ego must answer to the demands of the id. However, it does so in such a way as to ensure the survival and health of the individual, which requires the use of reason, planning, delay of immediate gratification, and other rational resources in dealing with the external world. In “normal” individuals, the ego is able, to some degree, to control the primitive impulses of the id. As a result, the ego is said to operate via the *reality principle*. The aim of the ego is to suspend the pleasure principle temporarily, until a time at which an appropriate place and object can be found for the release of tension. In this way, the ego is the component of personality that mediates between the demands of the id and the realities of the external world.

The third subsystem of the personality is the *superego*, which is the moral component of the personality. It emerges from the learning of moral values and social taboos. The superego is essentially that which is referred to as the *conscience*; it is concerned with “right” and “wrong.” The superego develops during childhood and adolescence in response to reward and punishment. It has three main functions. One is to suppress impulses of the id, particularly sexual and aggressive urges. The second function is to press the ego to abandon realistic goals in exchange for moralistic ones. The third is to impel the individual to strive for perfection.

Though the three subsystems of personality operate as a whole, each represents distinct influences on human behavior (see Figure 5.1). The id is the biological force that influences human behavior. The ego represents the psychological origins of behavior, whereas the superego reflects the impact of social and moral forces. Both the id and superego can be thought of as the irrational or nonrational components of personality; the id strives for pleasure at all costs whereas the superego always works to prevent it.

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**Anxiety, Defense Mechanisms, and the Unconscious**

Anxiety plays a prominent role in psychoanalytic theory. The purpose of anxiety is to warn the individual that there is impending danger (i.e., pain).
It is also a signal to the ego to take some preventive measure to reduce the threat.

Often the ego can cope with anxiety by rational measures. For example, a nervous student with an upcoming exam can spend extra time studying. A stressed-out employee can exercise, meditate, or turn to other constructive diversions. A parent can begin to save money now for a child’s college education in 15 years. A recovering alcoholic who has cravings can call his or her AA sponsor. Such actions require reason, the ability to plan, and the delay of immediate gratification for long-term gain.

However, the ego is often overcome by anxiety it cannot control. In such situations, rational measures fail and the ego resorts to irrational protective mechanisms, which are often referred to as defense mechanisms. These defense mechanisms, such as denial and rationalization, alleviate the anxiety. However, they do so by distorting reality instead of dealing directly with the problem. This distortion creates a discrepancy or gap between actual reality and the individual’s perception of it. As a consequence, the ego’s ability to cope with reality demands becomes increasingly diminished. Such is the case with alcoholics, who, upon being confronted with their problematic drinking, rely on denial and rationalization. These defenses, in turn, allow the abusive drinking to continue and to become increasingly dysfunctional.

Typical ego defense mechanisms among the chemically dependent include the following:

1. **Compensation**: making up for the deprivation of abstinence by overindulging in another pleasure. (Example: A recovering drug addict becomes compulsive about gambling, work, eating, etc.)
2. **Denial**: inability to perceive an unacceptable reality. (Example: An employee denies he is suffering from alcoholism when confronted about the bottle he keeps hidden in his desk.)
3. Displacement: directing pent-up feelings of hostility toward objects less dangerous than those that initially aroused the anger. (Example: An addict in treatment comes home from a group counseling session and screams at his wife. In group, he had received feedback from the facilitator indicating that he was not actively participating.)

4. Fantasy: gaining gratification from past experiences by reliving the euphoria and fun. (Example: While in rehabilitation, a group of addicts experience cravings as they reminisce about the “good ol’ times.”)

5. Isolation: withdrawing into a passive state in order to avoid further hurt. (Example: A depressed alcoholic in early recovery refuses to share her problems.)

6. Projection: assuming that others think badly of one even though they have never communicated this in any way. (Example: An addict unexpectedly blurts out to a counselor, “I know you think I’m worthless.”)

7. Rationalization: attempting to justify one’s mistakes or misdeeds by presenting rationales and explanations for the misconduct. (Example: An addict reports that he missed a 12-step meeting because he had to take a very important telephone call from his attorney.)

8. Regression: retreating to an earlier developmental level involving less mature responses. (Example: In a therapeutic community, an adult resident “blows up” and makes a huge scene when she learns that iced tea is not available for lunch that day.)

9. Undoing: atoning for or making up for an unacceptable act. (Example: An alcoholic goes to a bar after work and gets “smashed.” He doesn’t get home until 4:00 A.M. His wife is furious. The next day he brings her flowers and cooks dinner.)

The defense mechanisms and other processes operate on an unconscious level. The unconscious, according to Freud, represents the largest part of the human mind. The individual is generally unaware of the content and process of this part of mind. The conscious mind, by contrast, is a function of the ego that has often been likened to the “tip of an iceberg” (see Figure 5.2).

The unconscious mind holds forbidden desires, painful memories, and unacceptable experiences that have been “repressed” or pushed out of consciousness. Although individuals are unaware of unconscious material, it possesses energy and seeks expression. Thus, at times, unconscious material successfully penetrates the conscious mind. Typical examples of this are so-called Freudian slips (e.g., using the word sex when the word stress would have been appropriate). Unconscious material also surfaces during fantasies, dreams, and hypnosis. In each case, ego controls are lowered,
allowing the unconscious to appear. Psychoanalysts believe that as long as unconscious material is repressed and not integrated into the ego (presumably through psychoanalysis), maladaptive behavior (e.g., addictions) will be maintained.

**Insights into Compulsive Substance Use**

Early psychoanalytic formulations insisted that substance dependence stems from unconscious death wishes and self-destructive tendencies of the id. It was believed that among alcoholics and drug addicts, the id is oriented toward death instincts rather than toward constructive (e.g., sexual) instincts. Thus, many early psychoanalysts viewed compulsive substance abuse as a form of “slow suicide” (Khantzian, 1980). The focus in treatment was on the tendencies of the id. This traditional school of thought, known as *drive reduction*, holds that substance abuse is merely a manifest symptom of a repressed idea (or memory) that comes to consciousness (Director, 2002; Rothschild, 2010). The repressed idea is unrecognizable; that is, it appears as substance abuse, because it is distorted by psychological defenses (Leeds & Morgenstern, 1996). In essence, substance abuse can be thought of as a compromise resulting from the conflict between a repressed idea and the defense against it (Leeds & Morgenstern, 1996).

A second school of thought within the psychoanalytic tradition is sometimes referred to as *ego psychology*. More contemporary psychoanalytic
treatment of chemical dependence seems to draw heavily on this conceptualization of addiction (Murphy & Khantzian, 1995). Here, substance abuse is seen as a symptom of a deficient ego. According to Murphy and Khantzian (1995), “it is the vulnerable and disregulated self which is the central problem in addiction” (p. 162). Individuals with addiction problems are seen as lacking the capacity to adequately care for themselves; they expose themselves unnecessarily to a variety of risks: health, safety, financial, legal, and so on. The consequences of risky or dangerous behavior can be ignored because a sense of well-being, security, and pleasure is provided by the drug intoxication (Murphy & Khantzian, 1995). In this psychoanalytic approach, the goal of treatment is to build ego strength by helping the person develop the capabilities to cope with the demands of the external world.

Despite the differences described previously, psychoanalytic formulations of addiction share a set of assumptions. According to Leeds and Morgenstern (1996), these are:

1) the act of drug use is a symptom of some type of underlying psychological disorder,
2) the psychological problems of the addict precede and cause the substance abuse—there is little recognition that psychological problems are the consequence of substance abuse,
3) addiction is seen as a uniform disorder—there is relatively little consideration given to disorder subtypes, different drugs of abuse, to the course or severity of the addiction problem, etc.,
4) the presence of addiction indicates severe psychopathology. (p. 76)

Contemporary psychoanalysts tend to view chemical dependency as a symptom of a deficient ego. Essentially, they believe that substance abuse is only the obvious and outward manifestation of deeper personality problems. The goal of treatment in such cases is to build ego strength, so that the demands of the id can be better managed.

**Two Necessary Conditions**

According to Wurmser (1974), two general factors are always present in the development of compulsive substance use. The first is described as the *addictive search*. This internal urge is a psychological hunger or craving for an entire group of activities; the urge precedes the onset of chemical dependency but accompanies it and follows it, even after abstinence has been established. The activities may include compulsive gambling, overeating, indiscriminate sexual activity, irresistible violence, compulsive shoplifting, endless television viewing, and/or running away. All these activities can be used to provide external relief from overpowering internal drives.
The second necessary factor is referred to as the adventitious entrance of chemicals (Wurmser, 1974). This is the random introduction (in terms of accessibility and seductiveness) of alcohol or drugs into a person’s life. They are typically introduced by peers, or perhaps by drug dealers in the case of illicit drugs. Without access to and experimentation with these substances, addiction is obviously not possible.

Together, these two predisposing factors (i.e., the addictive search and the adventitious entrance) set the stage for the development of chemical dependency. Both must be present for the disorder to appear. According to Wurmser (1974), some people are driven by an addictive search, but they have not been exposed to the world of drug or alcohol abuse. In such cases, “there is no compulsive drug use without this trigger factor; but there is still an overriding emotional compulsiveness directed toward other activities and objects” (Wurmser, 1974, p. 829). This may also be the case for many chemically dependent persons in recovery. That is, they have removed themselves from the drinking/drugging scene and are abstinent, but they may continue old compulsions or develop new ones. They may be said to be continuing an addictive search even though they are abstinent.

These two predisposing factors could be used to explain why some people who gain access to the world of drug or alcohol abuse never become dependent on such substances. Despite the availability of various drugs, they may not possess the psychological hunger that is necessary to initiate or maintain compulsive drug or alcohol abuse. In other words, they may not need external relief from internal cravings or urges. Of course, an alternative “disease” explanation is simply that such individuals lack the genetic vulnerability to alcoholism and other drug addictions.

**Abuse as Affect Defense**

Contemporary psychoanalytic thinking maintains that substance abuse itself is a defense mechanism (Khantzian, 1980; Wurmser, 1980). Addicts are thought to abuse alcohol or drugs to protect themselves from overwhelming anxiety, depression, boredom, guilt, shame, and other negative emotions. One contemporary psychoanalyst contends that episodes of chronic drug use are fueled by needs for feelings of omnipotence (Director, 2005). Seeking omnipotence is considered a defensive reaction. Wurmser (1974) has stated that compulsive drug use is “an attempt at self-treatment” (p. 829). That is, it represents an attempt at self-medication, a way to relieve psychic pain. For the most part, contemporary psychoanalysts do not view negative affective states (e.g., anxiety and depression) as consequences of substance abuse but, rather, as its causes. According to Khantzian (1980):
I have become convinced, as has Wurmser, that becoming and remaining addicted to drugs is in most instances associated with severe and significant psychopathology. Necessarily, some of the deserved pathology evident in addicts is the result of drug use and its attendant interpersonal involvements. However, it is my opinion that drug-dependent individuals are predisposed to use and become dependent upon their substances mainly as a result of severe ego impairments and disturbances in the sense of self. . . . (p. 29)

Wurmser’s (1978) analysis of this problem goes further. He believes that the greater the legal penalties and social stigma against a drug, the more likely its user is to have severe psychopathology. The lack of internal controls to resist engaging in conduct that society condemns is seen as pathology. Thus, Wurmser (1978) concludes that “a compulsive alcohol or nicotine abuser shows far less preexisting psychopathology than a compulsive (or even casual) user of heroin, LSD, or cocaine” (p. 9).

Wurmser (1978) refers to the link between severe psychopathology and addiction as the hidden problem. He contends that drug control bureaucrats, law enforcement officials, many physicians (including psychiatrists), and drug users themselves are in denial about this relationship. According to Wurmser (1978), this collective unwillingness to acknowledge the emotional conflict underlying addiction has led to the development of misguided drug control policy and ineffective approaches to prevention and treatment. He believes legal controls do little to address the demand for drugs and that much treatment is superficial because it focuses on the use or nonuse of substances rather than on underlying personality and emotional issues.

**Does Research Support the “Self-Medication” Hypothesis?**

For more than 25 years, the psychoanalytic belief that individuals are predisposed to substance addictions by the experience of negative affective states was viewed with skepticism by many in the addictions research field. The skepticism was based largely on comprehensive summaries of research conducted in the 1980s. For example, Cox (1985) found that there was little evidence to support the view that psychological distress (e.g., anxiety, depression, and low self-esteem) leads to addiction. Rather, Cox and others concluded that studies of young people showed that future substance abusers possessed three preexisting character traits: independence, nonconformity, and impulsivity (Cox, 1985). Thus, rather being instigated by negative affect or mood states, it was these character traits that were thought to be the important risk factors for subsequent substance use disorders. Furthermore, it was concluded that negative affective states were more likely
to be the consequences of years of substance abuse, not the precursors, as claimed by psychoanalysts.

However, recent research has reopened this debate. In a methodologically rigorous prospective study, Swendsen et al. (2010) found evidence that many mental disorders, including disorders of affect and mood, are indeed associated with an increased risk of subsequent alcohol and other drug abuse and dependence. A number of the relationships between pre-existing affective disorders and subsequent alcohol and drug problems were observed after adjusting for the influence of disruptive behavioral disorders—that is, those that involve character or personality traits. Thus, at this point in time the self-medication hypothesis cannot be ruled out as a possible etiological explanation of alcohol and drug dependence. Chapter 4 provides more contemporary perspectives on the nature of comorbid substance abuse and mood disorders.

**Specific Drugs to Correct Different Affects**

Psychoanalysts are generally disinclined to accept the notion that an addict’s drug of choice is determined by economic, environmental, or sociocultural factors. Instead, they maintain that addicts become dependent on the drug that will correct or counteract the specific negative emotional state from which they want relief. For example, Wurmser (1980) puts it this way:

> The choice of drugs shows some fairly typical correlations with otherwise unmanageable affects (moods): narcotics and hypnotics are deployed against rage, shame, and jealously, and particularly the anxiety related to these feelings; stimulants against depression and weakness; psychedelics against boredom and disillusionment; alcohol against guilt, loneliness, and related anxiety. (p. 72)

Khantzian, Halliday, and McAuliffe (1990) claimed that differing types of emotional pain lead to dependence on different types of drugs. For example, they proposed that opiate or narcotic addicts are typically the victims of traumatic abuse and violence. As a result, they eventually become perpetrators of violence themselves. Their history causes them to suffer with acute and chronic feelings of hostility and anger, for which opiates provide relief. In contrast, individuals who are anxious and inhibited use sedative-hypnotics, including alcohol, to overcome deep-seated defenses and fears about interpersonal intimacy. Cocaine addicts were thought to select cocaine for its energizing qualities. These persons are seeking relief from depression, boredom, or emptiness. Cocaine is thought to be appealing because it bolsters feelings of self-esteem and assertiveness (Khantzian et al., 1990).
As noted previously, empirical data often appear to refute psychoanalytic concepts. This seems to be the case for “specific drugs to correct different affects.” For example, it has long been recognized that alcoholism often co-occurs with antisocial personality disorder and depression (Holdcraft, Iacono, & McGue, 1998), which is somewhat inconsistent with the psychoanalytic profile of the alcoholic as guilt-ridden, lonely, and anxious. In teenagers, epidemiological data have shown that marijuana abuse is correlated with delinquency and depression (Greenblatt, 1998). These associations do not neatly fit in the psychoanalytic model either.

**STAGES OF RECOVERY FROM ADDICTION**

According to the psychoanalytic perspective, there are three stages to complete recovery, as shown in Table 5.1 (Zimberg, 1978). Stage I is characterized by the self-statement “I can’t drink or drug.” In this stage, external control (e.g., detoxification and use of Antabuse) is important. In essence, clients need protection from their own impulses. The second stage is characterized by the self-statement “I won’t drink or drug.” Here, the control becomes internalized. Many AA/NA members remain at this level indefinitely. The third stage is represented by “I don’t have to drink or drug.” Many recovering persons never complete this stage, nor do they necessarily relapse. According to the psychoanalytic perspective, insight-oriented therapy is appropriate at this stage (Zimberg, 1978). However, because a recovering client’s perception of the need for change is usually diminished at this point (life is relatively normal or manageable), few recovering persons pursue insight-oriented therapy.

**TABLE 5.1. A Contemporary Psychoanalytic View of Treatment Stages**

<table>
<thead>
<tr>
<th>Stages</th>
<th>Client status</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td>“I can’t drink or drug” (need for external controls)</td>
<td>Detoxification, directive psychotherapy, Antabuse, drug testing, AA/NA, family therapy</td>
</tr>
<tr>
<td>Stage II</td>
<td>“I won’t drink or drug” (control becomes internalized)</td>
<td>Directive psychotherapy, supportive psychotherapy, AA/NA; Antabuse and drug testing may be discontinued</td>
</tr>
<tr>
<td>Stage III</td>
<td>“I don’t have to drink or drug” (conflict over abstinence is resolved)</td>
<td>Psychoanalytic psychotherapy</td>
</tr>
</tbody>
</table>

Psychoanalytic concepts are widely employed in the practice of substance abuse counseling. However, many practitioners are not aware that they are derived from psychoanalytic theory. For example, many make attempts to identify clients’ defense mechanisms in an effort to help the clients recognize their perceptual distortions. Denial, rationalization, and fantasy are typical protective mechanisms employed by clients with addiction problems. Closely intertwined with them is the unconscious, an indisputable influence on at least some classes of human behavior.

Despite a continuing reliance on psychoanalytic notions in clinical practice, traditional Freudian psychoanalysis is now largely dismissed as a viable treatment approach for substance abuse (Rothschild, 2010). More than a decade ago, Leeds and Morgenstern (1996) observed that “it is not hard to see why there is currently a crisis of confidence from within psychoanalysis in the efficacy of psychoanalytic understanding and treatment of substance abuse” (p. 80). More recently, the respected American psychiatrist George Vaillant (2005) stated: “I think almost everything psychoanalysis has said about alcoholism has been (180 degrees) wrong” (p. 275).

This is not to say that psychoanalytic concepts have no place in conceptualizing client problems. As Leeds and Morgenstern (1996) have noted, there often has been confusion between the psychoanalytic understanding of addiction and the psychoanalytic treatment of the disorder. It should not be assumed that one necessarily leads to the other. In fact, the theory itself seems to predict that traditional psychoanalytic methods would not work well with substance abusers. Contemporary psychoanalysts have pointed out that individuals with substance dependence suffer from poor ego controls. This makes them poor candidates for psychoanalysis, a process that requires significant ego strength. Wurmser (1974), himself a leading psychoanalyst, stated that most compulsive drug users are relatively inaccessible by psychoanalysis. There are various reasons for this poor match. Many persons with substance dependence enter treatment with little initial motivation for personal change. Many others require assistance with the ordinary, mundane challenges of staying sober and “straight” a day at a time (e.g., remembering to take Antabuse and finding a ride to an AA meeting). Still others need strong guidance and structure to avoid relapse. These pressing reality-based concerns are not readily addressed in traditional psychoanalysis, with its emphasis on the intellect, the origins of problems, and protracted self-analysis.

In recent decades, psychoanalytically oriented clinicians have recommended that traditional psychoanalytic practice be modified for the treatment of persons with substance dependence in the following ways:
1. The initial stage of treatment should be supportive and didactic in nature.
2. Management issues must be emphasized in early phases of treatment (i.e., hospitalization, dangerous behavior, and withdrawal symptoms).
3. Sessions should be held once or twice a week.
4. The “couch” should not be used.
5. Interpretation should be minimized.
6. Abstinence should be encouraged.
7. AA attendance should be emphasized (see Yalisove, 1989).

In the past decade, the psychoanalytic community has made attempts to bridge the divide between their field and the field of substance abuse treatment (Director, 2002; Rothschild & Gellman, 2009). Psychoanalysts have sought to rekindle interest in the psychoanalytic treatment of substance abuse by integrating the approach with other helping strategies. One model employs relational psychoanalysis (Director, 2002). A second model represents an attempt to integrate relational psychoanalysis with harm reduction therapy (Rothschild, 2010; Rothschild & Gellman, 2009). These attempts represent an effort from within the psychoanalytic community to show that psychodynamic concepts continue to be relevant and have important contributions to make to helping persons with substance abuse problems.

Relational psychoanalysis views chronic substance abuse as arising from unresolved conflicts in the organizing relationships of early adult life. These unresolved conflicts lead persons to view life as “a series of calculated sacrifices, made to achieve marital or material ends” (Director, 2002, p. 552). Such persons cope with these sacrifices by excessive drinking and/or drug use. Alcohol or drug intoxication allows the person to temporarily escape the everyday concessions and constraints of his or her unsatisfactory relationships and to feel alive again. Alcohol and drug use essentially become an outlet for feeling an array of intense emotions that are hidden within the relationship. They may include desires for power, passion, independence, dominance, being pampered, defiance, etc. These temporary experiences of feeling alive reinforce the act of substance abuse. They also establish a relational dynamic in which the conflict remains unresolved, thereby providing a functional purpose for continued substance abuse. The goals of relational psychoanalytic treatment are to (1) help clients recognize the conflicts hidden in their relationships; (2) assist them with gaining insight into how their substance abuse is an expression of their relational binds; and (3) explore opportunities for change (Director, 2002).

Rothschild (2010) and Rothschild and Gellman (2009) extend relational psychoanalytic treatment of substance abuse by incorporating harm
reduction principles (see Chapter 11). In contrast to traditional psycho-
analysis, the therapist using a relational psychoanalytic harm reduction
approach does not remain neutral or silent, but rather takes a more active
approach by presenting discrepancies between the client’s life goals and his
or her substance abuse. The therapist and client are seen as partners. The
therapist does not only seek to stimulate self-reflection, but also may teach
relapse prevention skills. Interpretation focuses not only on the internal
psychodynamics of the client, but on his or her external environment as
well.

Chapter Summary

At this time, it is unclear whether attempts by the psychoanalytic com-
munity to reinfuse their concepts into substance abuse treatment will take
hold. One question raised by the recent attempts to integrate psychoanaly-
isis with other models is whether the new approach can be implemented
in contemporary substance abuse treatment settings where the number
of treatment sessions is often limited and emphasis is being given to brief
interventions (Botelho, Engle, Mora, & Holder, 2011). Skeptics will likely
be unswayed by these attempts to evolve psychoanalytically oriented treat-
ment unless evidence from controlled trials is produced demonstrating the
efficacy of the integrated approaches. The utility of psychoanalysis seems
to be its ability to provide a deep understanding of the etiology of addic-
tion. However, its concepts have little to offer in support of effective addic-
tion treatment and prevention strategies.

Review Questions

1. What are major features of the process of psychoanalytic therapy?
2. What are the chief characteristics of the id, ego, and superego? How do
they interact?
3. How are defense mechanisms related to anxiety and the unconscious?
4. What is meant by abuse as affect defense?
5. Is the self-medication hypothesis of psychoanalysis supported by empiri-
cal research?
6. What specific affects are different drugs thought to correct?
7. Why do addicts not recognize the risks associated with their compulsive
use?
8. What are the three stages of contemporary psychoanalytic treatment?

9. What are the criticisms of psychoanalysis as a treatment of addiction?

10. In the last decade, what approaches have the psychoanalytic community integrated into psychoanalysis to make it more useful in the treatment of substance abuse?
The principal aims of behaviorism are to elucidate the conditions of human learning and to develop a technology for behavior change. Behaviorists believe that most or all human behavior is learned, including not only adaptive but also maladaptive behavior (e.g., addiction). One of the major premises, then, is that certain fundamental laws (known and unknown) govern the initiation, maintenance, and cessation of human behavior. Alcohol or drug use is considered a behavior subject to the same principles of learning as driving a new car, acquiring job skills, or sending text messages from a newly purchased mobile device.

Behavioral psychology, for the most part, restricts itself to the study of overt behavior—behavior that is observable and measurable. There is a heavy emphasis on empirical evidence, as behaviorists are interested in building a true science of human behavior. For this reason, they are usually not interested in internal “mentalistic” constructs, such as mental illness, self-esteem, affective states, thoughts, values, personality structure (e.g., the ego), defense mechanisms, or the unconscious. These concepts cannot be directly observed or measured, and there is no way to prove or disprove their existence. It is thus believed that they are not appropriate subjects for scientific inquiry.

**Conditioned Behavior**

Learned behavior is usually classified according to whether it is the result of *respondent conditioning* or *operant conditioning*. This distinction is an important one. However, the two types of conditioning do not represent
different kinds of learning but, instead, different types of behavior (Domjan, 2010). Respondent behavior is under the control of a well-defined stimulus, whereas operant behavior appears voluntary and is not directly elicited by a stimulus situation. Most human behavior falls into the latter category.

**Respondent Conditioning**

Respondent conditioning is also known as classical conditioning or Pavlovian conditioning. It was the first type of learning to be studied systematically and was first investigated by the great Russian physiologist Ivan Pavlov. Respondent behavior is reflexive in the sense that it is under the control of well-defined environmental stimuli. Examples of respondent behavior include the following:

1. Blinking in response to a bright light.
2. Pulling one’s hand away from a hot stove.
3. Salivating at the sight or smell of food.
4. Perspiring as the result of walking into a hot room.
5. Jerking one’s leg forward when struck on the knee with a physician’s hammer.

When a dog salivates at the sight of food, the salivation is considered respondent behavior, under the control of the stimulus of food. Pavlov found that if he paired the sight of food with a neutral stimulus such as a ringing bell, the bell alone would eventually elicit the salivation. Thus, the bell became a conditioned stimulus able to elicit salivation—a strange situation, indeed. Figure 6.1 diagrams the respondent or Pavlovian conditioning model.

Interestingly, research conducted by Siegel (1982) demonstrated that drug tolerance can become partially conditioned to the environment in which the drug is normally used via respondent conditioning procedures.

![Figure 6.1](image-url)
If a drug is administered in the presence of usual cues (i.e., the paired stimulus situation depicted in Figure 6.1), the drug effect will become somewhat diminished over time. In behavioristic jargon, “the drug effect is reduced by these anticipatory conditioned compensatory responses” (Brick, 1990, p. 178). In other words, repeated drug use in the same environment will gradually produce diminishing effects. This is one process for building behavioral tolerance. Thus, although cellular adaptation (a biological process) is clearly involved in the development of drug tolerance, learning also plays an important role.

**Operant Conditioning**

Operant behavior is different from respondent behavior in that operant behavior appears to be voluntary. In most cases, it does not seem to be directly elicited, or caused by, a specific stimulus in the environment. Furthermore, operant behavior is conditioned if it is followed by a reinforcer. In other words, operant behaviors are those that are maintained by events occurring after the behavior, not before it. If a behavior is followed by a reinforcer, the behavior will probably appear again. The subsequent change in rate of behavior is considered learning.

A reinforcer is best defined as any event that increases the probability or rate of a behavior (Miltenberger, 2012). Reinforcers can be any number of things. Some examples include alcohol, drugs, food, sex, verbal praise, money, a good grade, public recognition, and job promotion. Each person finds different things reinforcing. For example, actively drinking alcoholics find intoxication to be a potent reinforcer. Furthermore, the potency of a reinforcer is determined by an individual’s state of deprivation. For instance, in all probability, a soldier who returns from 6 months of combat duty in a place where no alcohol was available is going to generate much more behavior to obtain a beer than a civilian who has ready access to alcohol.

The varying effectiveness of alcohol as a reinforcer is further illustrated by the ability of researchers to breed strains of alcohol-craving mice (McKim, 1986). Some strains show a strong fondness for alcohol; others demonstrate a dislike for the beverage. Alcohol-craving mice prefer alcohol to sugar water and will occasionally drink to drunkenness. For these mice, alcohol is a potent reinforcer. They will learn new behaviors and engage in high rates of a behavior to continue to get alcohol; in other words, they will work for it. Among the mice that do not care for alcohol, the drink cannot be used as a contingency to train them. For this group, alcohol has little reinforcement value.

An important distinction in operant conditioning involves the difference between positive reinforcement and negative reinforcement. In both situations, the rate or probability of a behavior increases. Furthermore,
negative reinforcement is not punishment. A negative reinforcement procedure begins with an aversive stimulus; the behavior generated to remove the stimulus results in relief from the noxious stimulus. Thus, in a negative reinforcement procedure, relief is the reinforcer. The use of an alarm clock is a good example of negative reinforcement. The alarm sounds until one awakens in order to shut it off. The reinforcer in this case is silence (i.e., relief from noise), and the behavior change is reaching to turn off the alarm.

With addictive behavior, the classic example of negative reinforcement is withdrawal sickness. In alcoholic withdrawal, the symptoms include tremors, irritability, restlessness, anxiety, insomnia, and cravings. These symptoms are known by the alcoholic to almost disappear immediately upon taking a drink. Thus, in chronic alcoholism where an abstinence syndrome is present, drinking is reinforced by relief from the symptoms of withdrawal. Notice that the reinforcer is not alcohol or withdrawal itself but, rather, relief from withdrawal. In cases of alcohol dependence in which there is no withdrawal sickness (among teens, young adults, heavy episodic drinkers, etc.), drinking behavior is contingent upon positive reinforcers, such as euphoria and enhanced sociability.

Punishment can be defined as any event that decreases the probability or rate of a behavior (Miltenberger, 2012). Again, punishment and negative reinforcement have opposite effects: The former decreases behavior; the latter increases it. Punishers can also be any number of things or events. They can include a disdainful look, ignoring a comment, all the way to, physical abuse.

In regard to substance use and punishment, it is known that some people have particularly negative physical or psychological reactions to small amounts of alcohol or a drug. The examples of the person who becomes flushed, dizzy, and nauseated after one drink and the person who becomes extremely paranoid and panicky after a couple of puffs on a joint of marijuana illustrate this point. Such persons are essentially punished for substance use. The punisher (i.e., sickness or a panic attack) decreases the probability of future substance use. In cases such as these, there is little likelihood that substance dependencies will develop.

**Generalization and Discrimination**

Generalization and discrimination are two types of learning that are influenced by environmental stimuli as well as by reinforcement. Generalization can be defined as the tendency of an action to occur in a new setting because of the setting’s similarity to the one in which the behavioral response was originally learned, with the likelihood of the response recurring being proportional to the degree of similarity between the settings (Miltenberger, 2012). For example, let us imagine that a cocaine addict, 4 years into recovery, goes on a business trip to a distant city. After arriving
at the airport, he heads to the subway to catch a train for a downtown meeting. While riding on the subway train, he experiences intense cravings for cocaine. The last time he can remember having such an intense desire for cocaine was when he used to snort the drug with his buddies while riding the trains in his hometown. His cocaine cravings (and use) essentially generalized to all subway trains.

By contrast, discrimination can be defined as learning distinct responses to two or more similar but different stimuli due to differing benefits and costs associated with each one (Miltenberger, 2012). The failure to discriminate contributes to many relapses during early recovery. For example, let us suppose that an addict is discharged from an inpatient treatment facility. He has many new friends whom he has met through NA, and many old friends with whom he used to get high. He insists that he can be with his old friends and not “pick up” or “slip.” Unfortunately, he soon relapses, but he gradually learns that his old friends represent a stimulus condition that he must avoid. This gradual recognition is the process of discriminative learning. This learning process is also important for understanding the dynamics of controlled drinking—an issue, discussed later in the chapter.

**Extinction**

Another conditioning principle is extinction, which is the absence or removal of a reinforcer. With regard to substance abuse, abstinence and treatment represent extinction procedures. Relapse can be considered evidence of an incomplete extinction procedure. However, the sheer availability of alcohol and drugs, and their ever-present potential for producing euphoria, make complete extinction of drug-seeking behavior difficult. Thus, from a behavioral perspective, a return to drug use (i.e., relapse) is always a possibility.

**Initiation of Alcohol and Drug Abuse**

From a behavioristic perspective, the initiation of substance use is related to three factors: (1) availability, (2) lack of reinforcement for alternative behavior, and (3) lack of punishment for experimenting with alcohol or another drug. Clearly, use cannot begin if a substance is not available; this simple fact is the basis for the federal government’s drug interdiction efforts. The second factor, lack of reinforcement, becomes operative when socially approved behavior (e.g., studying, working, attending church, and family recreational activities) that could take the place of drug-using behaviors is not sufficiently rewarded. In such cases, individuals are likely to engage in drug-taking behavior, which is accompanied by more potent or alluring reinforcers. Third, and perhaps most important, many people
who experiment with a substance do not receive immediate punishment. Following the first use of a substance, few people get arrested, suffer an adverse physical reaction, lose a job, fail an exam, or receive harsh criticism from peers. The negative consequences of drug use are almost always delayed, sometimes for years or even decades (particularly with alcoholism and nicotine addiction). Not only are people unpunished immediately; they are usually quickly reinforced by euphoria and peer acceptance. Initiation, then, is the result of the combination of availability, reinforcers, and the absence of punishers in the social environment.

**Addiction**

Some time ago, McAuliffe and Gordon (1980), offered the following behavioral definition of addiction: “an operantly conditioned response whose tendency becomes stronger as a function of the quality, number, and size of reinforcements that follow it” (p. 138). Each addict experiences his or her own set of multiple reinforcers. We can classify, reinforcers into three categories: (1) euphoria, (2) desired social variables, and (3) elimination of withdrawal sickness. The combination of reinforcements from these categories will vary for each individual and each type of drug. For example, elimination of withdrawal sickness may be a more potent reinforcer for the heroin addict than for the PCP addict. In addition, relief from withdrawal may be a stronger reinforcer for the physically dependent heroin addict than for one who is not physically dependent.

Euphoria is also important. For example, the euphoric consequence of cocaine ingestion may be more important to the maintenance of cocaine addiction than the euphoria that results from drinking alcohol. Furthermore, peer acceptance, a social variable, may be a more potent reinforcer for the adolescent marijuana smoker than for the 40-year-old marijuana user. Thus, the specific combination of reinforcing effects is that which “drives” each addiction.

For behaviorists, the difficulty of refraining from drug use merely indicates that a sufficient history of reinforcement has probably been acquired to impel a high rate of use. After a period of sustained drug use, abstinence should be expected to be challenging because self-administration is associated with immediate euphoria (and sometimes relief from withdrawal sickness), whereas non-use leads to delayed (or “down-the-road”) benefits (Dallery, Meredith, & Budney, 2012). Behaviorists do not believe that there is a single point at which an individual suddenly becomes “addicted.” Rather, the word *addiction* is simply a term used to describe an operantly conditioned behavior that occurs at a relatively high rate. The individual’s addiction develops gradually and varies continually in response to drug-related contingencies. The term *addict* merely refers to a person who engages in a
high rate of drug use and who has a sufficient history of reinforced drug taking to outweigh the more socially acceptable rewards of life (career accomplishments, family interests, material possessions, etc.).

**Relationship Between Addiction and Physical Dependence**

For behaviorists, physical dependence on a drug is neither a necessary nor a sufficient condition for the development of an addiction. This is consistent with recent versions of the addiction criteria of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2000; American Psychiatric Association, 2013). Physical dependence is simply a side effect of using certain classes of drugs at a high rate over a sufficient period of time. It merely sets the stage for experiencing withdrawal sickness and its relief. The relief is but one possible reinforcing effect that maintains addictive behavior. Euphoria and peer acceptance are equally potent, and in some cases, more potent, reinforcers. Again, this is especially true of drugs that do not produce physical dependence or do so only minimally (hallucinogens, inhalants, marijuana, etc.)

It may be readily apparent that some addictions are not driven by the reinforcing effects of relief from withdrawal sickness (e.g., marijuana dependence). However, it should also be pointed out that physical dependence can exist in the absence of addiction. The most common example involves hospitalized patients recovering from surgery. Such patients are sometimes administered large doses of narcotic analgesics after surgery, over an extended period of time. When the patients are gradually weaned off the drug, they may experience some symptoms of withdrawal (irritability, diarrhea, headache, muscle ache, depression, etc.). However, because they are not “addicted,” they typically do not engage in drug-seeking behavior or verbalize cravings for the drug. In fact, in many cases they do not even recognize the symptoms as those of withdrawal but simply as those of recovery from surgery.

Even in heroin addiction, relief from withdrawal is sometimes not an important reinforcing effect, in part because the severity of symptoms, which depend upon dosage being administered, can be quite mild (Crevecœur, 2009). Three situations involving heroin addicts illustrate the distinction between addiction and physical dependence:

1. Some heroin addicts have been described as having “ice cream habits” because when administered a narcotic antagonist, they are discovered to have no physical dependence on the drug (Ray & Ksir, 2004). They claim they cannot stop using heroin, even though they want to, and are adamant about continuing their use despite the known risks.
2. Many compulsive, long-term heroin addicts go for months, sometimes even years, without ever interrupting their use long enough to experience withdrawal. This indicates that physical dependence (i.e., relief from withdrawal) is not the reinforcer driving their addictive behavior.

3. Many detoxified heroin addicts continue to report that they still feel addicted to the drug many months after last using it. They often continue to express strong desires for heroin.

**Cessation and Relapse**

From a behavioristic perspective, cessation of alcohol and drug abuse occurs when the punishers that follow ingestion become less temporally remote. The immediate severity of punishment effects gradually builds over months or years of abusing a drug. Typically, alcoholics and addicts experience repeated brushes with the law, including perhaps longer and longer jail sentences; their sources of money become scarce, jobs become harder to find and keep, family members and friends become increasingly hostile, medical problems worsen, and so on. As these contingencies become more closely linked in time to the substance use, its rate gradually, or in some cases abruptly, ceases.

Behaviorists expect relapses to occur at relatively high rates among persons in early recovery, because drugs are widely available in our society and always retain their ability to cause euphoria. Combined with these factors is the reality that many of the rewards (i.e., reinforcement) that come with abstinence and recovery are delayed. In fact, some abstinence-related reinforcers come only after months or years of sobriety. For example, to regain the trust and respect of family members and coworkers, addicts may have to maintain a year or more of abstinence. Some cocaine addicts have not been able to stabilize their financial affairs for years as a result of the debt they incurred using the drug. Drug dealers may not be able to make progress toward life or career goals because of jail time or simply as a result of their convictions. Whenever reinforcers such as these are delayed to some distant point in the future, their effectiveness in maintaining behavior consistent with recovery is diminished. For these reasons, relapses are always a possibility, especially during early stages of recovery.

**Delay Discounting**

In the last decade, there has been growing interest in the trait known as *delay discounting*. The central principle is that when behavioral consequences or reinforcers are delayed into the future, they often lose value and
thereby become less effective in influencing behavior choices in the present (such as refraining from substance use or gambling). Under such conditions, some individuals will make choices about consumable commodities that could be deemed to be less than rational; for example, choosing to take a $100 monetary reward today over waiting for a $1,000 reward 7 days in the future. This tendency to defect to smaller but immediate rewards may be implicated in the predisposition to addictive behaviors. Steeper discounting of delayed reinforcement is thought to increase vulnerability to addictive behavior. In many studies of alcohol use, drug use, and pathological gambling, delay discounting is operationalized by measures of impulsiveness (Reynolds, 2006). Thus, delay discounting is often treated as a personality trait characterized by impulsivity, which varies in strength across individuals and can predispose one to relapse.

Several studies have found that rates of delay discounting are associated with severity of alcohol dependence. Using a computerized hypothetical measure of delay discounting, Mitchell, Fields, D’Esposito, and Boettiger (2005) found that alcoholic patients who had not consumed alcohol for at least 2 weeks engaged in more delay discounting than nonalcoholic control participants. Petry (2001a) compared actively drinking alcoholics, abstinence alcoholics, and nonalcoholic control subjects on four hypothetical discount functions. The actively drinking alcoholics were more likely to choose $100 over a $1,000 delayed amount, and 15 bottles of alcohol over a delayed provision of 150 bottles, compared to the abstinent alcoholics and nonalcoholic controls. On three of the four discount functions, the abstinent alcoholics were intermediate in rate of delay discounting, with the nonalcoholics exhibiting the lowest rate of discounting. Bjork, Hommer, Grant, and Danube (2004) also discovered, in using a hypothetical delay-discounting measure, that alcoholic subjects discounted the value of delayed monetary rewards more than nonalcoholic controls. Overall, there is compelling evidence of an association between rate of delay discounting for monetary rewards and severity of alcohol dependence. However, there is uncertainty about the direction of causation. Elevated rates of delay discounting may increase vulnerability to alcohol dependence, or it could be a consequence produced by excessive drinking.

A number of studies has examined the relationship between delay discounting and cigarette smoking. For example, in a cross-sectional study, Bickel, Odum, and Madden (1999) compared rates of delay discounting in adult current smokers, never smokers, and ex-smokers. Compared to nonsmokers, current smokers were significantly more likely to discount the value of delayed cigarettes than delayed monetary rewards. Baker, Johnson, and Bickel (2003) replicated these findings, and also found that current smokers discounted monetary amounts significantly more than never smokers. Overall, the cigarette smoking literature indicates that smokers
also are more likely to discount the value of various delayed outcomes more than nonsmokers. Again, the direction of the causal relationship remains uncertain.

Delay discounting has also been studied in users of illicit substances, primarily opiates and cocaine. Madden, Petry, Badger, and Bickel (1997) used a question-based hypothetical measure for monetary rewards to compare rates of delay discounting in 18 opioid-dependent participants in treatment and 38 control participants. Opioid-dependent participants discounted delayed monetary amounts significantly more than controls. Also, opioid-dependent participants discounted the value of delayed heroin at a steeper rate than matched monetary amounts. Madden, Bickel, and Jacobs (1999) replicated these findings in a separate sample of opioid-dependent participants (N = 18) by using hypothetical heroin prices that controlled for the price reductions that occur when purchasing the drug in larger quantities. In a novel study of injection drug use, Odum, Madden, Badger, and Bickel (2000) presented 32 opioid-dependent patients with a hypothetical choice between using a clean needle to inject heroin 1 week in the future or a used needle (from a friend who claimed that he or she did not have AIDS) to inject heroin immediately. Almost one-half of the participants (n = 15) chose the used needle from a friend (a high-risk choice for contracting disease). Furthermore, those participants who chose the used needle were more likely to discount delayed monetary amounts than those who chose to use a clean needle 1 week in the future. These findings suggest that delay discounting can influence involvement in drug-related risk behaviors.

Coffey, Gindleski, Saladin, and Brady (2003) used a question-based hypothetical measure of delay discounting ($1,000 delayed standard) to compare cocaine-dependent participants to matched nondependent controls. The cocaine-dependent participants also completed a hypothetical discounting measure assessing rewards of delayed use of crack or cocaine. Consistent with results found in other types of addicts, cocaine-dependent participants discounted monetary amounts more than controls, and they also discounted delayed crack/cocaine rewards significantly more than delayed monetary rewards. Washio et al. (2011) examined whether delayed discounting of hypothetical monetary rewards was related to duration of abstinence from cocaine use in 36 cocaine-dependent outpatients. Delayed discounting was found to be associated with the number of continuous weeks of cocaine abstinence, indicating that the steepness of discounting negatively affects treatment response in cocaine-dependent outpatients.

Petry (2002) examined the association between antisocial personality disorder (ASPD) and delay discounting. A question-based hypothetical measure of delay discounting (determining both $100 and $1,000 delayed standards) was used to compare three groups: (1) patients with a substance use disorder (alcohol, cocaine, and/or heroin abuse) and ASPD,
patients with a substance use disorder without ASPD, and (3) matched control participants with no history of substance use disorder or ASPD. For both delayed standard amounts, substance abusers with ASPD discounted more by delay than substance users without ASPD, and substance abusers without APD discounted more than controls. These findings suggest that ASPD adds to the delay-discounting effects observed in the population of substance abusers.

Delay discounting has also been examined in the population of problem gamblers. Petry and Casarella (1999) compared three groups: (1) substance-abusing problem gamblers, (2) substance-abusing non-problem gamblers, and (3) controls with neither problem. Participants in the three groups completed a question-based hypothetical delay-discounting measure for two different delayed standard amounts (both $100 and $1,000). Substance-abusing non-problem gamblers were found to discount more than controls for both delayed monetary amounts. Substance-abusing problem gamblers also discounted more than controls for both delayed amounts, and they discounted more by delay than the substance-abusing non-problem gamblers for the $1,000 delayed standard only. Petry (2001b) replicated these findings in a separate sample of pathological gamblers. Dixon, Marley, and Jacobs (2003) also determined that gamblers discounted the value of monetary rewards more by delay than nongamblers on a hypothetical question-based measure. Alessi and Petry (2003) demonstrated that rate of delay discounting is associated with severity of problem gambling, suggesting that gambling is an addictive behavior with relationships to delay discounting that are similar to alcohol and drug dependence.

In summary, it appears that persons with addictive behaviors engage in more delay discounting than nonaddicted persons. This association has been observed across addictive behaviors, including substance-related activities as well as gambling. Furthermore, the association between delay discounting and addictive behavior seems to be dose-dependent: High rates of delay discounting are linked to severe involvement in addictive activities. Future research needs to rely on methods that will allow for interpretations of causal relations between delay discounting and addictive behaviors.

**Basic Principles of Contingency Management**

The application of learning principles to the helping process is called *behavior modification, behavioral contracting, contingency contracting*, or simply *contingency management*. Based on the premise that alcohol and drug use (and addiction) are learned, a clinical practitioner’s role is to assist clients in learning more effective ways of behaving so that clients reach *their* goals. According to Miltenberger (2012), contingency management consists of a functional analysis of behavior with four primary aims.
1. **Specification of a target behavior.** What behavior is maladaptive? Specifically, which behaviors should be increased or decreased?

2. **Analysis of the current environmental events that control the behavior.** What contingencies currently maintain or support the behavior? As applied to addiction, what are the rewards that maintain the drug use? Are there punishers associated with avoiding use?

3. **Modification of current environmental events.** What changes in the immediate environment can be manipulated to alter the behavior?

4. **Measurement of behavior change.** What procedures will be used to assess the behavior before and after the environmental intervention?

In the contingency management approach, the development and maintenance of addictive behaviors are seen as involving the same components as the development and maintenance of any other behavior. This view has two important implications. First, addictive behaviors are not deemed inherently maladaptive; rather, they are defined as harmful as the result of labels that significant others assign to them. For instance, an alcoholic is simply a person whose drinking behavior has adversely affected a family member, friend, or coworker. The second implication is that addictive behaviors are maintained because other, more adaptive behaviors are not reinforced or are not possible. A typical example would include an alcoholic man in early recovery and his nonsupportive wife. As a result of several months of abstinence, he begins to demonstrate appropriate parenting behavior (e.g., helps his son with homework), which his wife criticizes. The lack of reinforcement for these new behaviors soon leads him back to drinking.

The contingency management approach is based on a somewhat unique view of human nature and the change process involving the following assumptions:

1. Human behavior is neither intrinsically good nor bad, but it is labeled as such by external observers.
2. Human behavior is both overt (observable) and covert (e.g., thinking).
3. Humans can learn to change and effectively manage their behavior.
4. Human behavior influences the behavior of others and changes the environment.
5. Human behavior is lawful, meaning that it is systematically influenced by environmental events (Miltenberger, 2012).

Contingency management approaches can be thought of as strategies that seek to teach clients to become more effective at managing their own
behavior. In this collaborative process involving client and clinician, there are six steps.

1. The first step focuses on specifying the problem behaviors. With empathic understanding, the clinician assists clients in identifying their problems in behavioral terms.

2. The second step directs attention to antecedent manipulations. Here, the clinician and client explore ways to change the environmental/social conditions in the client’s life. For example, a person addicted to video gaming may be lonely, depressed, and lack the social skills necessary for meeting new people. In teaching such skills, the clinician would assist the client in identifying the necessary stimulus and reinforcing conditions for meeting new friends.

3. The third step is goal setting, in which the clinician helps the client identify goals. The clinician does not impose goals on the client.

4. The fourth step is arranging reinforcers and punishers. Perhaps using a behavioral contract, the clinician helps the client design a system for supporting his or her behavioral change, using predetermined rewards and penalties identified by the client. For engaging in recreational behaviors that replace time spent involved in video gaming, the schedule and system for providing rewards to oneself would be identified, established, and possibly monitored by significant others.

5. The fifth step involves helping the client develop a system of social support that will help him or her monitor, progress and provide encouragement. Here, the client enlists the assistance of significant others in these change efforts, possibly by providing them with weekly progress reports on his or her attempts to reduce time spent video-gaming.

6. The sixth step involves helping the client to make a commitment to change. Typically, there are barriers to making such a commitment, particularly when existing reinforcement is already in place that maintains problem behaviors, such as gaming addiction. The use of incentives to generate and maintain motivation to adopt new behaviors is critical. Ignoring this phase or giving it little attention would likely hinder client progress.

**Applications of Contingency Management**

The following discussion shows how contingency contracting has been applied to a number of treatment issues. These include efforts to (1) establish and maintain controlled drinking; (2) initiate and maintain abstinence and encourage the adoption of recovery behaviors (taking an Antabuse [disulfiram] tablet, attending AA each day, etc.); (3) promote positive change in a
client’s vocational, recreational, social, and familial functioning; (4) reduce cocaine and other illicit drug use; and (5) enhance compliance with methadone maintenance.

**Moderation-Oriented Treatment**

Among problem drinkers who do not demonstrate severe impaired capacity to control their alcohol intake, moderation-oriented treatment, managed by contingency contracting, is a viable alternative to abstinence (Heather & Dawe, 2005). It should be emphasized that moderation-oriented treatment (also known as *controlled drinking*) is not an effort to encourage recovering alcoholics to “try drinking again.” Rather, it should be considered an option to be negotiated at the onset of treatment for those who prefer it as a treatment goal (Adamson et al., 2010). Furthermore, it is important to point out that abstinence (not moderation) is usually the preferred drinking goal among those who seek treatment for alcohol problems. One study found that when presented with the two goal options of abstinence and moderation during screening for treatment, 54.3% expressed a preference for abstinence-oriented treatment (Heather et al., 2010). Nonetheless, there is evidence that alignment of the client’s preferred goal (abstinence vs. moderation) with actual treatment services (abstinence vs. moderation) improves treatment outcomes for all clients (Adamson et al., 2010).

For more than 20 years, there have been calls for expanding the use of moderation-oriented treatment in the United States (see Sobell, Wilkinson, & Sobell, 1990). Interestingly, controlled drinking appears to be a frequent outcome of both moderation-focused and abstinence-focused treatments; for example, Sanchez-Craig and Lei (1986) and Adamson et al. (2010) found that many clients with positive outcomes adopted moderation in both goal conditions. Many successful clients benefit from abstinence-oriented treatment but apparently reject its basic goal, and at some point in their treatment or after their treatment, successfully practice controlled use instead.

As a treatment strategy, moderation-oriented treatment has long been denounced in the United States (Sobell & Sobell, 2006). Yet, in Canada, Britain, and the Scandinavian countries, it has had much greater acceptance for many years (Rosenberg, Melville, Levell, & Hodge, 1992; Walsh & Stuart, 2009). For instance, as early as 1989–1990, 75% of alcohol treatment agencies in England, Scotland, and Wales reported that moderation was an acceptable treatment goal (Rosenberg et al., 1992). About one-half of these providers thought it to be acceptable for 1–25% of their clients. At that time, the providers most frequently reported that their position on moderation-oriented treatment was based on their own professional experience, rather than on research or agency policy.
Heather and Robertson (1983) identified six possible advantages of a controlled-drinking strategy:

1. In our society, abstinence from alcohol is deviant behavior. This is unfortunate. However, the stigma and the label of *alcoholic* pose significant adjustment problems for some people.
2. Among some alcoholics, abstinence may lead to overwhelming states of anxiety or depression that are unlikely to be managed in other ways.
3. Sometimes, overall improvement in life functioning does not result from abstinence.
4. In some alcoholics, abstinence is associated with severe psychosocial problems that lead to frequent relapse.
5. Abstinence during treatment rules out the possibility for changes in drinking behavior.
6. The demand placed on alcoholics to abstain deters many from seeking help until their problem is quite severe.

*Behavioral self-control training* (BSCT) is an extensively studied treatment strategy for alcohol problems (Hester, 1995; Marinchak & Morgan, 2012). As early as the late 1970s, Miller and Hester (1980) demonstrated an effectiveness rate for BSCT of 60–80% with selected candidates. In a later study, Harris and Miller (1990) reported that 78% of problem drinkers in a self-directed BSCT group and 63% of those in a therapist-directed BSCT group were rated as maintaining improvement 15 months after initiating treatment. The improved group consisted of abstainers (confirmed by collateral reports) and controlled drinkers. The criteria for being classified as *improved* included (1) on average, no more than 20 standard drinks weekly; (2) not exceeding blood alcohol levels of .08–.10 on any occasion (verified by collateral reports); and for those who failed to meet the criteria for controlled drinking (3) succeeding in reducing their weekly alcohol intake by 30% or more (confirmed by collateral reports).

BSCT consists of the following components (Miller & Hester, 1980):

1. A functional analysis of the drinking behavior is conducted. Together, the client and the helping professional determine specific and appropriate limits for alcohol consumption; these depend upon body weight and safety concerns. Typically, limits for consumption range from two drinks to perhaps four on one occasion.
2. The client monitors and records consumption.
3. Clients are trained to control the rate of their drinking.
4. Self-reinforcement procedures are created to maintain gains.
5. Emphasis is placed on stimulus-control training.
6. In place of alcohol, clients are taught a variety of coping skills for
obtaining those outcomes they no longer derive from excessive alcohol use.

Numerous studies have demonstrated the effectiveness of BSCT in helping abusive drinkers to control their drinking. Unfortunately, it is probably not possible to apply BSCT to the broad spectrum of alcoholic clients who appear for treatment. In addition to not being appropriate for clients with certain medical conditions (discussed later), it may be ineffective for the large number of coerced clients (those who are more or less “forced” into treatment by employers, family members, the courts, etc.). Such clients often seek treatment to escape even more aversive sanctions and frequently have little interest in learning to modify their drinking behavior. The limited appeal of BSCT among many abusive drinkers is highlighted by the fact that many controlled-drinking studies have found it difficult to recruit clients (Cameron & Spence, 1976; Robertson, Heather, Dzialdowski, Crawford, & Winton, 1986). Furthermore, in the United States, community-based treatment providers have expressed relatively little interest in contingency management and behavioral approaches to treating substance abuse (Hartzler, Lash, & Roll, 2012). The reasons behind this lack of interest are complex and varied, but seem to involve barriers associated with the intervention itself, setting, clinician characteristics, and implementation impediments (Hartzler et al., 2012).

It should be noted that even the proponents of controlled drinking have long contended that it is not a viable strategy for most alcoholics (Miller, 1982). Good candidates are generally young, motivated clients who have no biomedical impairment from alcohol abuse. Lewis, Dana, and Blevins (1988) developed criteria for ruling out controlled-drinking candidates. Those who should not attempt it include the following:

1. clients with liver dysfunction, stomach problems, an ulcer, any other disease of the gastrointestinal tract;
2. clients who have cardiac problems that would be adversely affected by alcohol;
3. clients who have any physical illness or condition that would be negatively affected by alcohol;
4. clients who have a diagnosis of alcohol idiosyncratic disorder intoxication (American Psychiatric Association, 1980, p. 132);
5. clients who are committed to abstinence;
6. clients who have strong external demands for abstinence;
7. female clients who are pregnant or considering pregnancy;
8. clients who lose control of their behavior while drinking;
9. clients who have been physically addicted to alcohol;
10. clients using any medication or drug that is dangerous when combined with alcohol;
11. clients who are abstaining from alcohol;
12. those people with the following history: over 40, divorced and not in a supportive relationship, out of work, or with a family history of alcoholism; and
13. clients who have tried a competently administered moderation-oriented treatment and have failed. (p. 153)

**Contracting for the Initiation and Maintenance of Abstinence**

When abstinence has been chosen and initiated, certain behaviors are conducive to the maintenance of what is commonly called recovery. They include the following:

1. Attending AA/NA meetings.
2. Calling one’s sponsor.
3. Reading self-help literature.
4. Getting to work on time.
5. Avoiding “slipping places.”
6. Taking Antabuse as prescribed.
7. Socializing with fellow recovering addicts.
8. Practicing relaxation exercises or other coping skills.
9. Attending to one’s family responsibilities.

Contingency contracting can be used to help clients initiate and maintain these behaviors and any others found to be conducive to recovery. Reinforcers and punishers are linked to the occurrence and absence of specified behaviors, as outlined in a written contract. Of course, the contract is not legally binding; however, both client and counselor should sign it, and the client should receive a photocopy. Again, it is not forced on a client but, rather, is an agreement that a helping professional and client develop together.

Typically, contracts outline the rewards that clients give themselves if they engage in the specified behaviors. For example, if a client attends five AA meetings a week, he or she can go out for dinner on the weekend. If the client fails to make it to five meetings in a particular week, then he or she must forgo the restaurant outing. Likewise, a client may decide to “punish” him- or herself for neglecting to take Antabuse on a particular day. Such oversights can be self-penalized by arranging for donations (perhaps $5 or $10) to be given to a disliked political or religious organization.

A number of important principles is involved in effective contingency contracting. Two of these are the temporal proximity of the reinforcer or punisher to the specified behavior and the potency of the contingency (Miller, 1980). First, in brief, reinforcers and punishers are most effective when they occur immediately after the specified behavior; those that are
delayed are generally less effective. Second, individuals differ considerably in regard to rewards and punishers. For instance, ice cream might be a potent reinforcer for some recovering clients but completely ineffective for others. Thus, effective contracts will rely on contingencies that have special significance for the particular client.

Stitzer and Bigelow (1978) examined the desirability of reinforcers among a group of methadone maintenance patients \( (N = 53) \). Using a questionnaire, they found that the methadone “take-home” privilege was the most effective incentive available to methadone maintenance clinics. The second most effective reinforcer among this group was $30 per week, followed in descending order of desirability by $20 per week, opportunity to self-select methadone dose, fewer urinalyses, availability of a client representative or advocate, elimination of mandatory counseling, a monthly party, and finally the opportunity to play pool.

**The Community Reinforcement Approach**

Behavioral therapists have recognized that the application of contingency management procedures to isolated aspects of substance abuse is a narrow approach. To enhance the effectiveness of behavioral treatment, Hunt and Azrin (1973) and Azrin (1976) developed a multicomponent treatment strategy that makes reinforcement in the patient’s community contingent upon abstinence from alcohol and/or drugs. A system of contingencies is created for four areas of a client’s life: vocational, recreational, social, and familial. As long as abstinence is maintained, the recovering client receives reinforcers in these areas. Typically, the client’s significant others are involved in these contingency contracts, and their behavior may be shaped as well.

In an early study in this area, Hunt and Azrin (1973) compared a community reinforcement program for alcoholism to a standard hospital treatment program and found that the former approach produced significantly better patient outcomes over a 6-month period. Compared to patients in the standard hospital program, those in the community reinforcement program spent less time drinking alcohol, were less likely to be unemployed, and were less likely to be readmitted for treatment. In a second study, Azrin (1976) was able to replicate these findings using a 2-year follow-up assessment.

**Voucher-Based Treatment for Cocaine Dependence**

During the 1990s, the failure to adequately treat cocaine dependence, based on pharmacological and psychosocial interventions, led to a resurgence of interest in research based on reinforcement principles (Higgins et al., 2004). Much of this research has relied on a voucher-based incentives approach, which involves “the delivery of vouchers exchangeable for retail
items contingent on patients meeting a predetermined therapeutic target” (Higgins, Alessi, & Dantona, 2002, p. 888). Biochemically verified abstinence from recent cocaine use has usually been that target. The voucher-based approach has been found to increase treatment retention because clients must remain in the program to receive incentives. This is important because retention has been associated with positive treatment outcomes. In addition, a great deal of the research in this area has coupled the use of vouchers with the community reinforcement approach.

Higgins et al. (1991) conducted the first study testing the voucher incentive approach as a means to establish an initial period of abstinence in cocaine addicts in an outpatient setting. The investigation compared the efficacy of behavioral treatment to that of a traditional 12-step drug counseling program. A total of 28 patients participated in the study. The first 13 cocaine-dependent patients were offered the behavioral treatment program; all 13 accepted it. The following 15 patients were offered the 12-step drug counseling program. The authors note that 3 of the 15 patients refused this program option.

The two treatment regimens were quite different. In the behavioral program, patients and therapists jointly selected material reinforcers (Higgins et al., 1991). The goal of the behavioral program was specifically to achieve abstinence from cocaine. The program’s contingencies pertained only to cocaine use. Urine specimens were collected four times a week, and patients were breath-tested at these times as well; however, patients were not penalized for positive test results for drugs other than cocaine. The patients were informed of their urine test results immediately after providing their specimens.

Patients with urine specimens testing negative for cocaine metabolites were rewarded with points that were recorded on vouchers (Higgins et al., 1991). Each point was worth 15 cents. Money was never given directly to patients; rather, it was used to make retail purchases in the community. Staff members actually made the purchases and gave the items to the patients. The first negative urine specimen earned 10 points (i.e., $1.50). The second specimen was worth 15 points ($2.25). The third one earned 20 points ($3). The value of each subsequent negative urine specimen was increased by 5 points. Furthermore, to bolster the probability of continuous abstinence from cocaine, patients were rewarded with a $10 bonus each time they provided four consecutive negative urine specimens. Patients who remained continuously abstinent throughout the entire 12-week treatment program earned points worth $1,038, or $12.35 per day.

When the patient tested positive for cocaine or failed to provide a specimen, the value of the vouchers dropped back to 10 points (i.e., $1.50). Items that had previously been purchased did not have to be returned. Higgins et al. (1991) reported that the items purchased were “quite diverse and included ski-lift passes, fishing licenses, camera equipment, bicycle
The community reinforcement procedures focused on four broad issues: (1) reciprocal relationship counseling, (2) identification of the antecedents and consequences of cocaine use, (3) employment counseling, and (4) development of recreational activities. These issues were addressed in twice-weekly 1-hour counseling sessions throughout the 12-week program. The emphasis appeared to be placed on the first issue, relationship counseling. Eight of the 13 patients in the behavioral program participated in reciprocal relationship counseling. This counseling consisted of procedures “for instructing people how to negotiate for positive changes in their relationship” (p. 1220). The authors describe how this worked as follows:

To integrate the community reinforcement approach and contingency management procedures, the patient’s significant other was telephoned immediately following each urinalysis test and informed of the results. If the specimen was negative for cocaine, the spouse, friends, or relative engaged in positive activities with the patients that had been agreed upon beforehand. If the result was positive for cocaine use, he or she refrained from the agreed upon positive activities but offered the patient assistance in dealing with difficulties in achieving abstinence. (Higgins et al., 1991, p. 1220)

The 12-step drug treatment consisted of either twice-weekly 2-hour group therapy sessions or once-weekly group sessions combined with 1-hour individual therapy sessions (Higgins et al., 1991). In both formats, the 12 steps of NA were emphasized. The patients were informed that cocaine addiction was a treatable but incurable disease. They were required to attend at least one self-help meeting a week and to have a sponsor by the final week of treatment. The counseling sessions provided both supportive and confrontive therapy, as well as didactic lectures and videos on vital recovery topics. In the ninth week of treatment, attempts were made to involve family members in the treatment process. Finally, aftercare plans based on 12-step principles were created in the latter weeks of treatment.

After 12 weeks, the two groups (i.e., behavioral treatment vs. 12-step drug counseling) were compared on a variety of outcomes. Across all these measures, the patients in the behavioral treatment showed better outcomes than those in the 12-step group (Higgins et al., 1991). For example, 11 of the 13 patients in the behavioral treatment completed the 12-week program, compared to just 5 of 12 in the 12-step treatment. In the behavioral treatment group, one patient dropped out at week 9 and returned to cocaine use, and the other one had to be admitted to an inpatient unit because of “bingeing.” The seven unsuccessful patients in the 12-step treatment were
terminated for the following reasons: (1) lack of regular attendance; (2) refused group counseling; (3) refused to abstain from marijuana; (4) did not return after being denied a prescription for antianxiety medication; (5) following a relapse, entered inpatient rehabilitation; (6) decided no longer needed treatment; and (7) was murdered.

Patients in behavioral treatment were also more likely than those in the 12-step treatment to have longer periods of continuous abstinence from cocaine (Higgins et al., 1991). Of 13 behavioral therapy patients, 10 achieved 4-week periods of continuous abstinence; of the 12-step patients, only 3 of 12 did the same. Furthermore, 6 of the behavioral therapy patients achieved 8-week periods of continuous abstinence, whereas none of the 12-step patients accomplished the same. In the behavioral treatment group, 92% of all collected urine specimens were cocaine-free, whereas 78% were “clean” in the 12-step group. This occurred even though many more urine specimens were collected from the behavioral treatment group \( n = 552 \) than from the 12-step group \( n = 312 \).

The results from this initial study were provocative for a number of reasons. First, the findings suggested that reinforcers could be found to compete with cocaine’s intoxicating effects. At the time, the popular perception was that cocaine is so rewarding that food, sex, and all other sources of reinforcement could not compete with the drug; the Higgins et al. (1991) study suggested that money (in the form of vouchers) could be an effective alternative reward. Second, the findings suggest that polydrug abusers need not be required to stop use of all drugs at the same time. Contrary to traditional drug treatment philosophy, perhaps it is possible, even preferable, to work on eliminating use of one drug at a time. Finally, the Higgins et al. study demonstrated how important incentives are in motivating clients to stay in treatment and to adopt and maintain abstinence. It appeared that many clients drop out of traditional 12-step programs too early (i.e., before completing 3 months) because they either do not receive or do not anticipate receiving significant rewards for staying in treatment. Thus, the initial Higgins study raised the possibility that incentives may be the key to providing effective treatment for cocaine dependence.

Higgins and colleagues then conducted a series of randomized clinical trials to further test the efficacy of the combined community reinforcement training (CRT)–voucher intervention (see Higgins et al., 1993, 1994, 1995, 2003; Higgins, Wong, Badger, Haug-Ogden, & Dantona, 2000). Three of these trials were designed to assess the independent ability of specific intervention features to produce positive treatment outcomes (Higgins et al., 1994, 2000, 2003). The purpose of attempting to decompose the intervention was to possibly make the treatment more efficient to aid in its transfer to conventional treatment settings.

The first trial tested CRT in combination with voucher incentives against CRT alone (Higgins et al., 1994). Retention in treatment and
abstinence from cocaine were significantly greater in the CRT–vouchers condition than in CRT alone. This finding indicates that the voucher component of the intervention made an active contribution to the positive outcomes produced by the combined CRT–vouchers treatment. In addition, these intervention effects were observed 6 months after the termination of treatment (Higgins et al., 1995). The second trial in this research program (1) provided further support for the active contribution of the voucher program to cocaine abstinence and (2) demonstrated that the positive effects of the voucher incentives could be detected 1 year following treatment termination (Higgins et al., 2000). The purpose of the third trial was to determine whether CRT combined with voucher incentives improves treatment outcomes above and beyond that produced by voucher incentives alone (Higgins et al., 2003). Compared to voucher incentives alone, the CRT–voucher combination was found to independently contribute to improved treatment retention and decreased cocaine use, but only during the treatment period. Thus, it appears that posttreatment abstinence from cocaine is more closely associated with the voucher incentives than with the CRT.

Subsequent research further extended knowledge about the use of vouchers to treat cocaine dependence. For example, Higgins et al. (2007) showed that higher incentives are positively associated with longer abstinence during and following cocaine addiction treatment. In Spain, García-Fernández et al. (2011) documented that adding vouchers to the community reinforcement approach improved cocaine addiction treatment outcomes 6 months after the incentive program ends.

The CRT–voucher-based research presented here suggests that drug dependence is essentially a “reinforcement disorder” (Higgins et al., 2002, p. 907). Although the approach is clearly supported by evidence, the major obstacle to its widespread dissemination as a treatment option is how to cover program costs. The pioneering work done by Higgins and colleagues and other research groups is typically supported by federal research grants. Thus, the unresolved issue is how a funding mechanism can be created to support incentive-driven treatment programs for persons with substance use disorders. In the public policy arena, this issue certainly would generate a great deal of controversy.

**Enhancing Compliance with Methadone Maintenance**

Methadone is a relatively long-lasting synthetic opiate that prevents opiate withdrawal symptoms for 24–36 hours (NIDA, 1987). In proper doses, methadone does not produce sedation or euphoria and therefore has been used for several decades as a treatment for heroin addiction. Though there are positive outcomes to methadone maintenance (Mueller & Wyman, 1997), one common problem is that many clients continue to use a variety of illicit drugs while receiving methadone from a clinic (NIDA, 1987).
Contingency contracting has been found to be an effective approach to this problem. A variety of contingencies has been used to increase the rate at which methadone clients produce drug-free urine samples. Money and program privileges have been used as positive reinforcers (e.g., Stitzer, Bigelow, & Liebson, 1980). Aversive consequences, such as contracting for the termination of methadone treatment, also have been found to be effective in reducing positive urine samples (Dolan, Black, Penk, Robinowitz, & DeFord, 1985). Another effective approach has been to make access to methadone maintenance contingent upon cocaine-free urine samples during the initial phase of treatment (Kidorf & Stitzer, 1993).

The combination of a take-home incentive (a positive reinforcer) and a split-dosing contingency (an aversive consequence) appears to boost the rate of drug-free urine samples among chronic polysubstance abusers who do not comply with conventional methadone treatment (Kidorf & Stitzer, 1996). A take-home incentive allows a client to leave the clinic with a dose of methadone. This is a convenience for the client because it reduces the frequency with which he or she must travel to the clinic. A split-dosing contingency requires clients to make two daily visits to the clinic to receive their full dose of methadone. Kidorf and Stitzer (1996) implemented split dosing following a positive urine test. They found that the combined use of positive reinforcers and aversive consequences had a marked effect on 28% of a previously noncompliant sample.

In recent years, China introduced methadone maintenance treatment to address the related problems of increasing prevalence rates of HIV and intravenous opiate use (Sullivan & Wu, 2007). However, high rates of methadone maintenance dropout and relapse have plagued these programs. Hser et al. (2011) designed and tested a contingency management intervention to improve methadone maintenance retention and reduce drug use in Shanghai and Kunming, China. A total of 319 methadone maintenance participants were randomly assigned to usual care with or without incentives during a 12-week trial. In exchange for opiate-negative urine samples or consecutive attendance, participants earned the opportunity to draw for a chance to win prizes. Compared to those in the treatment-as-usual (control) group, participants in the incentive condition had better retention at the Kunming site (75% vs., 44%), but not at the Shanghai site (90% vs., 86%). Submission of negative urine samples was more common among the incentive group than the usual care (74% vs., 68% in Shanghai and 27% vs., 18% in Kunming). Hser and colleagues concluded that the contingency management system improved methadone maintenance retention and drug abstinence. However, there were considerable differences in effects across the two sites. The differential effects were attributed to uneven training of staff members, methadone dosing practices, and participant economic status.
Chapter Summary

An examination of the findings from behaviorally oriented treatment indicates that contingency contracting is an effective strategy for helping those with alcohol and drug problems. The strength of interventions based on operant principles is that they are grounded in science. Indeed, this is a principal concern of behaviorally oriented practitioners. Another strength is that these procedures rely on incentives to motivate clients. Many conventional treatment programs have failed to incorporate incentives into their intervention strategies as a means of enhancing client motivation. This is understandable because cost considerations make it a very challenging proposition.

Interest in behaviorally based interventions is likely to remain strong as long as public officials demand to know “what works.” This emphasis on accountability, evidence, and outcomes is inherent to the behavior technology approach.

Review Questions

1. How do respondent and operant conditioning differ?
2. What is the difference between positive reinforcement and negative reinforcement?
3. What are the three general classes of reinforcers in addiction?
4. Why should relapse be expected among those in early recovery (in behavioral terms)?
5. Why is steeper discounting of delayed reinforcement thought to increase vulnerability to addictive behavior?
6. What are the four aims and six steps of contingency management?
7. What is behavioral self-control training (BSCT)? Who are good candidates?
8. How can contingency contracting be used to structure and support abstinence?
9. What is the community reinforcement approach?
10. How are voucher-based procedures used to treat cocaine dependence?
11. What are the strengths of contingency management as a strategy for helping substance abuse clients?
 Substance use and abuse can be explained within a cognitive-behavioral framework. *Cognitive* in this context refers to covert mental processes that are described by a number of diverse terms, including *thinking, self-talk, internal dialogue, expectancies, beliefs, schemas*, and so on. These “hidden” variables mediate the influence of external stimuli in the production of observable human behavior. Because they represent “behaviors” that are not readily observable, cognitive models are usually distinguished from those that are strictly behavioral. This chapter draws on constructs from a number of cognitive-behavioral approaches, including self-efficacy theory (Bandura, 1997; Rotgers, 2012) and alcohol and other drug expectancy theory (Goldman, Brown, & Christiansen, 1987; Hendricks, Reich, & Westmass, 2009). The discussion shows how cognitive constructs have been used to explain the initiation and maintenance of addictive behavior; they have also been used to guide the development of relapse prevention strategies based on enhancement of coping and social skills.

**Fundamental Social-Cognitive Concepts**

Albert Bandura is recognized as a leader in cognitive psychology. In his early work, he used the term *social learning theory* (SLT), but as the theory became increasingly focused on cognition, he adopted the term *social-cognitive theory*. As the theory continued to evolve, the construct of self-efficacy became central, sometimes leading to use of the term *self-efficacy theory*. These propositions about human behavior grew out of dissatisfaction with the deterministic views of human beings as expressed by both psychoanalysis and behaviorism several decades ago. In the orthodox
Cognitive Models

psychoanalytic perspective, humans are considered to be under the control of the unconscious, whereas in the behaviorist camp, behavior is seen as controlled by external contingencies (i.e., rewards). In both of those theoretical systems, self-regulation plays no part. Bandura (1977) rejected this view and insisted that humans can create and administer reinforcements (rewards and punishers) for themselves and to themselves. He described it this way:

Social learning theory approaches the explanation of human behavior in terms of a continuous reciprocal interaction between cognitive, behavioral, and environmental determinants. Within the process of reciprocal determination lies the opportunity for people to influence their destiny as well as the limits of self-direction. This conception of human functioning then neither casts people into the role of powerless objects controlled by environmental forces nor free agents who can become whatever they choose. Both people and their environments are reciprocal determinants of each other. (p. vii)

Note that Bandura indicates that self-direction is possible within limits. These limits vary by both person and environment. For example, a cocaine addict in early recovery who lives in a suburban neighborhood is probably going to have much more control over drug-taking behavior than a similar addict who lives in an inner-city, cocaine-ridden neighborhood. Bandura’s (1977) reasoning is apparent in the following passage:

If actions were determined solely by external rewards and punishments, people would behave like weathervanes, constantly shifting in different directions to conform to the momentary influences impinging upon them. They would act corruptly with unprincipled individuals and honorably with righteous ones, and liberally with libertarians and dogmatically with authoritarians. (p. 128)

In SLT, the consequences of behavior (i.e., reinforcements and punishments) do not act automatically to shape behavior in a mechanistic manner. Rather, these external, environmental contingencies influence the acquisition and regulation of behavior. Internal cognitive processes, such as efficacy and outcome expectancies, are also important because they mediate the influence of environmental contingencies (Rotgers, 2012). These cognitive processes are based on prior learning experiences and serve to determine (1) which environmental influences are attended to, (2) how these influences are perceived (e.g., as “good” or “bad”), (3) whether they will be remembered, and (4) how they may affect future behavior. Within this paradigm, human behavior is produced by learning processes; genetic traits are not thought to be essential to understanding most forms of conduct (Rotgers, 2012).
SLT stresses that individuals are actively involved in appraising environmental events. The acquisition and maintenance of behavior are not passive processes. Furthermore, Bandura (1977) maintains that the conditions for learning are facilitated by making rules and consequences known to potential participants. By observing the consequences of someone else’s behavior, an individual can learn appropriate actions for particular situations. Bandura (1977) indicates that people create symbolic representations from these observations and rely on them to anticipate the future outcomes that will result from their own behavior. This cognitive process (i.e., symbolic representation) assists in generating motivation to initiate and sustain behavior.

**Self-Regulation**

Another central concept in SLT, and one of particular importance to the problem of substance use, is self-regulation (Abrams & Niaura, 1987). This concept refers to the capability of humans to regulate their own behavior via internal standards and self-evaluative assessments (Rose & Walters, 2012). The concept helps explain why human behavior can be maintained in the absence of external environmental rewards and why externally coerced behavior is often not sustained upon the removal of punitive contingencies. In the process of self-regulation, humans make self-rewards (and self-punishments) contingent upon the achievement of some specific internal standard of performance. If a discrepancy develops between one’s internal standards and one’s behavioral performance, the individual will be motivated to change standards, behavior, or both. The internal standards are thought to be the result of one’s history of modeling influences and differential reinforcement (Wilson, 1988).

In SLT, alcoholism and addiction are not thought to be conditions characterized by a lack of self-regulation but, rather, forms of self-regulation that are deemed problematic by society (and possibly the family). In other words, the disease model’s concept of loss of control is disputed by SLT. The alcoholic’s or addict’s lifestyle is seen as regulated (i.e., organized) around the consumption of alcohol or drugs. The person’s behavior is not random or unpredictable; it is purposeful and goal-directed. The high degree of self-regulation is clear when consideration is given to the amount of time and effort needed (often daily) to obtain the drug, use the drug, conceal its use, interact with other users, and recover from the drug’s effects. Many persons with substance use disorders manage these lifestyles for years, even while holding jobs and having families.

In this context, it should be noted that self-regulation does not imply healthy, which is a value-laden term that is, by definition, subjective. Furthermore, SLT maintains that in some cases addiction may be a means of coping (i.e., regulating the self) with internal performance standards that
are too extreme or unrealistic. For example, an alcoholic may cope with long work hours by consuming many martinis. For other addicts, their evaluation of self is not “activated” by other persons’ opinions of their substance use; that is, criticism from others has little impact on how they perceive themselves. Thus, they easily engage in behavior (alcohol/drug abuse) for which there is little external reward and perhaps much punishment (social/family ostracism, arrests, financial debt, health problems, etc.).

**Reciprocal Determinism**

In Bandura’s (1977) view, person, behavior, and environment are continually engaged in a type of interaction called *reciprocal determinism*. That is, each of the components is capable of changing the nature of the interaction at any time. Individuals are thought to be capable of reassessing their behavior, its impact on the environment, and the environment’s impact on themselves and their behavior. In a given situation, one of the three components may gain momentary dominance. Figure 7.1 illustrates the relationship among these components, where it can be seen that individuals are not driven by internal forces alone, nor do they passively respond to external forces. Instead, a set of interlocking forces is involved. Wilson (1988) describes it this way: “A person is both the agent and the object of environmental influence. Behavior is a function of interdependent factors. Thus, cognitions do not operate independently. In a complete analysis of the cognitive control of behavior, mediating processes must be tied to observable action” (pp. 242–243).

**Modeling and Substance Use**

*Modeling*, which is vicarious or observational learning, is an important concept in social-cognitive paradigms. Wilson (1988) defines it in the following manner:

![Figure 7.1](image)
In this form of learning people acquire new knowledge and behavior by observing other people and events, without engaging in the behavior themselves and without any direct consequences to themselves. Vicarious learning may occur when people watch what others (“models”) do, or when they attend to the physical environment, to events, and to symbols such as words and pictures. (pp. 240–241)

Bandura (1977) identified three types of effects on behavior that can result from observing a model:

1. **Observational learning effects.** These refer to behaviors acquired through observation of a model that did not previously exist in the individual’s behavioral repertoire (e.g., smoking marijuana from a “bong”).

2. **Inhibitory– disinhibitory effects.** These refer to increases or decreases in the intensity of a previously learned inhibition. Such behaviors usually result from observing a model’s being rewarded or punished for some specific action. Thus a teenage boy may drink a beer—an action he had previously inhibited—when he observes an admired friend (i.e., a model) receive a reward for doing so. In this case, the “reward” may be any number of social consequences (e.g., other peers voice their approval; the admired friend becomes more sociable, funny, or easy to talk to).

3. **Response facilitation effects.** These refer to the appearance of behaviors that are not novel and were not previously inhibited. Examples of such behaviors are as follows: “People applaud when others clap; they look up when they see others gazing skyward; they adopt fads that others display; and in countless other situations their behavior is prompted and channeled by the actions of others” (Bandura, 1971, p. 6).

The pace at which friends drink beer is another example of a response facilitation effect. In such a group, drinking beer is not a new behavior and it is not inhibited, but the pace of an individual’s drinking is influenced by that of the group. If most group members are sipping slowly, it is also likely that a particular individual will match that pace. Consider a wine-tasting event in which small amounts are consumed for taste and food is eaten to cleanse the mouth. In such cases, individuals rarely become drunk, as models of such behavior do not normally exist at such events. In contrast, consider a typical college fraternity party, in which models of heavy drinking abound. Again, SLT asserts that the models in both of these two drinking situations facilitate the pace of the group’s drinking behavior. The models do not cause or require others to increase or decrease their drinking; they simply influence it.

Controlled experiments using a bogus taste-rating task have systemati-
cally examined the influence of modeling on alcohol consumption. In this procedure, participants are manipulated by the investigator’s deception.
They are deceived into believing that they are participating in a procedure to evaluate the taste of alcoholic beverages. The story is concocted to provide study participants with a rationale for consuming alcoholic beverages in a laboratory setting.

In one seminal study, Caudill and Marlatt (1975) assigned heavy drinking, male college students \((N = 48)\) to one of six groups in a \(3 \times 2\) design. Without their knowledge, the participants were exposed to different types of confederate models who had been trained by the investigators. The participants were exposed to one of three types of drinker models: heavy, light, or nondrinker. In addition, prior to the taste-rating task, they had a brief interaction with a model who was trained to act either “warm” or “cold” toward the participant. The findings showed that participants exposed to heavy drinking models consumed significantly more alcohol than those exposed to light drinking and no drinking models. The latter two groups did not differ from one another. Though the prior social interaction conditions (warm vs. cold) did not influence consumption, these experimental findings indicate that modeling can be an important social determinant of alcohol consumption (Caudill & Marlatt, 1975).

Later, Collins, Parks, and Marlatt (1985) conducted two similar experiments to study modeling effects. Using male undergraduates who were moderate and heavy drinkers, students were recruited under the pretense of assessing the realism of an on-campus barroom laboratory. They were told that the assessment would involve consumption of alcohol. In one experiment, confederates, under the control of the investigators, acted in a sociable or unsociable fashion while modeling either light or heavy alcohol consumption. Heavy drinking was produced in the participants by exposure to three types of models: sociable heavy drinking, unsociable heavy drinking, and unsociable light drinking. The sociable light drinking models tended to produce light drinking in confederates. The investigators interpreted these findings in context of the camaraderie and rivalry that exist among young men under differing social conditions. In the second study, the confederates adopted different roles indicating three levels of social status: “transient laborer,” “typical college student,” and “30-year-old medical resident.” Whereas the alcohol consumption of the participants matched that of the confederates, level of status did not influence drinking behavior (Collins et al., 1985). Regardless, the findings from this study offered further support for the hypothesis that modeling can influence alcohol consumption in small groups.

**Self-Efficacy and Treatment Outcomes**

*Self-efficacy* has become the unifying construct of the social-cognitive framework (Bandura, 1997). Previously, it tended to be described as a
minitheory within the larger framework of SLT (e.g., Wilson, 1988). Regardless, self-efficacy has been defined as “a perception or judgement of one’s capability to execute a particular course of action required to deal effectively with an impending situation” (Abrams & Niaura, 1987, p. 134). Efficacy beliefs have been shown to play an influential role in many classes of human behavior, including coping with stress (Jerusalem & Mittag, 1995), educational attainment (Zimmerman, 1995), career development (Hackett, 1995), health-related behavior (Schwarzer & Fuchs, 1995), and addictive behavior (Marlatt, Baer, & Quigley, 1995).

The two components of self-efficacy are outcome expectations and efficacy expectations. An outcome expectation is a person’s estimate that a particular outcome will occur. In other words, an individual assesses the situation and the various factors involved in his or her own performance and formulates an expectation of the probability that a specific course of action will lead to a particular outcome (Monte, 1980). Of particular relevance here are alcohol and drug expectancies. The next section of this chapter discusses these beliefs more fully.

An efficacy expectation is a person’s belief that he or she can carry out the necessary course of action to obtain the anticipated outcome (Bandura, 1997). Thus, an outcome expectation is knowledge of what to do and of what will be obtained, whereas an efficacy expectation is the belief (or doubt) that one can do it. Bandura (1995, 1997) contends that people who are healthy, personally effective, and successful tend to have a high sense of perceived self-efficacy. In other words, they believe that they can achieve what they set out to do. Furthermore, people with high self-efficacy are likely to interpret life problems as challenges rather than as threats or unmanageable situations.

Psychosocial interventions can alter behavior to the extent that they affect efficacy expectations (Barry & Blow, 2012; Rotgers, 2012). Prevention, treatment, and brief intervention services that enhance a person’s sense of personal competence and autonomy are likely to lead to improved functioning. More than 20 years ago, this cornerstone of behavior change was recognized by Wilson (1988):

Unless treatment creates strong expectations of efficacy, coping behaviors may be easily extinguished following the termination of therapy. The phenomenon of relapse is a problem for all methods of psychological treatment, including behavior therapy. Self-efficacy theory is a means of conceptualizing the relapse process and suggests procedures for facilitating the long-term maintenance of behavior change, especially in the addictive disorders. (p. 243)

According to Bandura (1977), efficacy expectations are based on (and can be altered by) four sources of information. The most powerful influence
is thought to be that of *performance accomplishments* in previous mastery
situation. Past failure experiences will undermine efficacy beliefs, whereas
success will boost them. The second source of efficacy expectations con-
sists of *vicarious experiences*—that is, observation of others’ success and
failures. A third source is *verbal persuasion*; here, a person is told that he
or she can master a task. This source has a relatively weak influence on effi-
cacy expectations because it provides no personal experience of success or
failure. The fourth and last source of efficacy expectations is the *emotional
arousal* that stems from attempting a demanding task. The experience of
anxiety is a powerful cue to people regarding their possibilities for success
(or failure) and the amount of effort they will have to exert to achieve mas-
tery. High levels of anxiety and fear are likely to have a debilitating effect
on a person’s attempts at mastery.

As applied specifically to substance use, Marlatt et al. (1995) identified
five specific types of self-efficacy. *Resistance self-efficacy* concerns judg-
ments about one’s ability to avoid the initial use of a substance. This type
of self-efficacy is important for understanding the onset of substance use,
particularly in adolescents. *Harm reduction self-efficacy* involves percep-
tions of one’s ability to avoid harm following initial use of a substance.
*Action self-efficacy* pertains to one’s perceived ability to achieve abstinence
or controlled use. This type is important for understanding initial behav-
ior change efforts among people who have intensified involvement with
substance use. *Abstinence (or coping) self-efficacy* is concerned with one’s
anticipated ability to cope with relapse crises. Finally, *recovery self-efficacy*
is comprised of judgments about one’s ability to return to recovery follow-
ing lapses and relapses.

Efficacy expectations are particularly important in relapse preven-
tion. Persons with substance dependence who doubt that they can maintain
the tasks necessary for recovery (i.e., abstinence self-efficacy) are likely to
relapse. Furthermore, the sources of efficacy expectations suggest specific
relapse prevention strategies. Successful efforts will be those designed to
ensure success (i.e., performance accomplishments) by first providing sim-
ple tasks and gradually building to more difficult ones. Successful efforts
will also expose an addict to other successfully recovering addicts (i.e.,
vicarious experiences) and will teach ways to cope with negative affective
states (emotional arousal). Finally, the sources of efficacy expectations sug-
gest that verbal persuasion (e.g., “I know you can do it”) is an inadequate
intervention by itself.

Outcome studies have examined the associations between abstinence
self-efficacy and substance use lapses while in treatment. Using ecologi-
cal momentary assessment (EMA) methods, Holt, Litt, and Cooney (2012)
prospectively examined real-time changes in abstinence self-efficacy,
affective state, and urge in the hours before initial smoking and drinking
lapses among persons receiving concurrent treatment for alcohol abuse and
smoking. The EMA methods relied on real-time monitoring of participants using cellular telephones and an interactive voice response (IVR) system. The programmed IVR system called 61 participants five times per day to administer a 23-item survey for 28 consecutive days. Responses were elicited by a recorded voice and answered by the participant using the phone’s numeric keypad. Follow-up calls were made when the participant was not available to respond. Participants received $0.50 for each completed survey and an additional $5.00 for each day all five surveys was completed. The overall compliance rate with the EMA procedure was 65%, with no association between smoking/drinking lapses and EMA adherence.

Holt and colleagues found that smoking lapses were preceded by lower smoking abstinence self-efficacy as well as by stronger urges to smoke and lower positive mood. Drinking lapses were also foreshadowed by lower smoking abstinence self-efficacy, but only in participants reporting recent smoking. Holt et al. (2012) concluded that bolstering abstinence self-efficacy should be a primary feature of treatment strategies for co-occurring alcohol abuse and smoking.

In a secondary analysis of data from the COMBINE trial (COMBINE Study Research Group, 2003), Hartzler, Witkiewitz, Villarroel, and Donovan (2011) examined the extent to which changes over time in abstinence self-efficacy mediated between the client’s perceived therapeutic bond with their treatment provider and 1-year alcohol outcomes and psychiatric symptoms. The researchers analyzed data from COMBINE clients who participated in one of three treatment conditions: (1) received study medications (naltrexone, acamprosate, naltrexone + acamprosate, placebo) and enrolled in medication management (MM) only \( (n = 607) \); (2) received study medications/MM and a combination behavioral intervention (CBI) \( (n = 619) \); and (3) received CBI only \( (n = 157) \). Hartzler and colleagues found that change in abstinence self-efficacy during the treatment period was a significant mediator of the relationship between perceived therapeutic bond with the CBI therapist and the alcohol and psychiatric outcomes in those participants receiving CBI only. The mediational role of self-efficacy was not observed for those clients in the other two treatment conditions involving medication. The findings indicate that the therapeutic bond is an important determinant of treatment outcome when it strengthens client self-efficacy.

**Role of Outcome Expectancy in Alcohol and Drug Use**

Cognitive models of substance abuse rely heavily on the outcome expectancy and efficacy expectancy constructs. The former concept has been used to predict and explain drinking behavior and other drug use, whereas
both play a role in relapse (and its prevention). This section provides a detailed discussion of both alcohol and other drug outcome expectancies.

*Expectancy* refers to a cognitive variable that intervenes between a stimulus and a response. Goldman et al. (1987) defined *outcome expectancy* as the “anticipation of a systematic relationship between events or objects in some upcoming situation” (p. 183). The construction implies an “if–then” relationship between a behavior, such as drinking, and an anticipated outcome, such as relaxation.

Expectancies are dynamic cognitive variables for they embody a person’s accumulated lifetime experience of direct and vicarious exposure to stimuli of all kinds (Hendricks et al., 2009). Thus, expectancies result from family experiences, exposure to media and marketing, observations of peers’ behavioral consequences, news events, culture, etc. Prior experiences with the euphoria produced by alcohol and other drugs are important influences on the generation of substance use expectancies.

Expectancy theory maintains that drug self-administration is largely determined by the reinforcements an individual expects to obtain as a consequence of self-administering a drug (Goldman et al., 1987). Hence, expectancy theory focuses on the anticipated reinforcement of drug use.

Alcohol and other drug expectancies vary in strength from person to person, and their strength can change over time within individuals. A lack of positive alcohol expectancies should lead one to abstain from alcohol, whereas heavy drinking can be predicted by a variety of strongly held expectancies. Thus, those drinkers who consume abusively may strongly expect alcohol to make them more relaxed, more sexual, or possibly more aggressive. Moderate and light drinkers may hold weaker expectancies in these areas or expect no positive outcomes in some of them. Expectancies associated with drugs operate in much the same manner. The intriguing aspect of alcohol expectancy theory, in particular, is that it is not necessary to assume that the outcomes of drinking (tension reduction, enhanced sexuality, aggression, etc.) are produced by the pharmacological actions of ethanol. Instead, in expectancy theory, the drinker’s mood and behavior are changed largely (during intoxication) by his or her *beliefs* about the ability of alcohol to transform him or her. Whether the same can be said to be true for drugs such as marijuana and cocaine is less clear.

**Expectancy and Human Adaptation**

Early formulations of expectancy theory came close to ignoring the genetic and neuroscience aspects of substance use and abuse (Goldman et al., 1987). Today, the expectancy concept has become woven into our neurobiological understanding of addictive behavior (Goldman, 2002). In this contemporary view, addiction is not thought to be a unique pattern
of behavior or a disease, but instead represents a malfunction of human neurobehavioral adaptation. This particular adaptation, involving multiple biological and cognitive systems, is seen as expectancy-based (Goldman, 2002). Evolutionary pressures are thought to have fostered the development of a human brain and nervous system that could store information about past experiences in memory to establish a means of anticipating and navigating future events and threats that often required an immediate response. Goldman (2002) notes:

The evolutionary pressure that led to this adaptive approach derives from a little appreciated, but inexorable, feature of existence, namely, that time always moves forward. Hence, no situation, no environment, and no context in which a living organism finds itself is static. It instantly changes into the next circumstance, and that circumstance, into the subsequent one. (pp. 738–739)

In the human ancestral environment, a brain that could generate expectancies was adaptive because survival often depended upon reacting to threatening events, securing food, and having sex. Memory of past events facilitated upcoming efforts in these behavioral situations, particularly in conditions of uncertainty and incomplete information. It seems that our neurobehavioral system evolved to store information (memory) about past events to allow for judgments to be formed about whether newly encountered circumstances match memories. If they do match, then the prospect for efficient and effective behavior is maximized, at least in situations that require immediate action (Goldman, 2002).

Unfortunately, this expectancy-based adaptation that served early humans well facilitates addictive behavior today. Observations of others engaged in alcohol and drug use, as well as other addictive behaviors, and past personal experiences engaging in them, produce expectancies that often focus attention on immediate rewards and not long-term consequences. In essence, expectancies lock in memory that can trigger automatic behavioral response sequences that maintain addictive behavior (Goldman, 2002).

**Early Laboratory Research**

Empirical support for the alcohol expectancy hypothesis comes from laboratory research using placebo and balanced-placebo designs. In early laboratory research on alcohol use, placebo designs were used to control for the effects of expectancy. This was done, for the most part, as a control formality, following customary practice in pharmacological research (Goldman et al., 1987). It was not hoped that the placebo condition would produce effects similar to that of the actual condition.
One early placebo study tested the concept of loss of control in the disease model (Merry, 1966). According to this concept (which was discussed in detail in Chapter 2), alcoholics experience intense, probably biologically induced cravings for alcohol after having consumed just a small amount; this intense need for alcohol (once consumed) leads to a loss of control over drinking behavior. Merry (1966) tested this hypothesis by administering alcohol to nine inpatient alcoholics without their knowledge. During an 18-day period, each patient was given an orange-flavored beverage at breakfast. The patients were told that the beverage contained a mixture of vitamins that would help them remain abstinent from alcohol. The beverage was alternated every 2 days such that the patients received either a totally nonalcoholic drink or one that contained 1 ounce of vodka. As a routine part of their treatment regimen, patients were asked to rate their level of alcohol craving later each morning. There was no relationship between their ratings and the beverage consumed, indicating that the basis for alcohol cravings was not pharmacological. Other studies have yielded consistent findings.

In the 1970s, the placebo effects themselves increasingly became the focus of research. Investigators expanded the placebo design and developed a balanced design that included four cells:

I. Told alcohol, given alcohol.
II. Told alcohol, given only tonic.
III. Told no alcohol, given alcohol.
IV. Told no alcohol, given only tonic.

In this balanced-placebo design, an antiplacebo condition (III) is added; this condition assesses alcohol effects in the absence of the usual drinking mindset (Goldman et al., 1987).

Using the balanced-placebo design, Marlatt and his colleagues conducted pioneering research on the relationship between alcohol expectancies and drinking behavior. In one landmark study, Marlatt, Demming, and Reid (1973) investigated the loss-of-control hypothesis by presenting separate groups of male alcoholics and social drinkers with the bogus alcohol taste-rating task (as described in the discussion of modeling in this chapter). Both drinker groups had 32 members. The alcoholics (mean age = 47) were actively drinking with no intention to quit. They met at least one of the following criteria: (1) history of alcoholism treatment, (2) five or more arrests for “drunk and disorderly conduct,” and/or (3) previous membership in AA or a vocational rehabilitation program for alcoholics. Most of the alcoholics (25 of 32) met more than one of these criteria. The social drinkers (mean age = 37) did not meet the aforementioned criteria, and they were screened out if they described themselves as “heavy” or “problem” drinkers (Marlatt et al., 1973).
The subjects were told that the beverages were either vodka and tonic or tonic only. The actual beverage contents were systematically varied to be either consistent or inconsistent with the instructional set. It was found that both alcoholic and nonalcoholic men drank significantly more when they thought their drinks contained alcohol, regardless of the actual contents. This finding seriously challenged the loss-of-control hypothesis of the disease models, which held that alcoholic drinking is mediated by a physiological mechanism that can be triggered by the introduction of alcohol to the body. Rather, it appears that the subjects’ beliefs (expectancies) about beverage content were the crucial factors in determining amount of alcohol consumed.

**Psychometric Research Linking Expectancy and Substance Use**

A large body of psychometric research has specified the different types of substance use expectancies that are held by humans. The seminal research was conducted by Sandra Brown, Mark Goldman, and their colleagues, who developed the original Alcohol Expectancy Questionnaire (AEQ). This 90-item self-report questionnaire assesses whether alcohol, when consumed in moderate quantities, produces specific positive effects (Brown, Christiansen, & Goldman, 1987a). The AEQ was derived from an initial pool of 216 verbatim statements collected from 125 people, who were interviewed individually and in groups. They ranged in age from 15 to 60, and their drinking behavior varied from total abstinence to chronic alcoholism. When the items were factor-analyzed, the following six alcohol expectancy factors emerged:

1. Global positive change
2. Sexual enhancement
3. Physical and social pleasure
4. Increased social assertiveness
5. Relaxation and tension reduction
6. Arousal with power

These factors represent relatively distinct domains of anticipated drinking outcomes. For example, there exists a common belief or expectation that alcohol consumption helps a person “unwind,” that is, facilitates relaxation and tension reduction. Again, in alcohol expectancy theory, outcomes such as relaxation and tension reduction are not thought to be pharmacological effects, but instead are produced by cognition in the form of expectancy.

The six expectancy factors were subsequently used in a large number of survey research studies as variables to predict various drinking practices. In general, the research has consistently linked these expected consumption
outcomes to actual use, abuse, and related problem behavior. For example, Brown, Creamer, and Stetson (1987b) found that alcohol abusers expected more positive outcomes from drinking than did their nonabusing peers. Similarly, Critchlow (1987) found that heavy drinkers held stronger expectations of positive consequences of alcohol use than did light drinkers, and that they generally evaluated all drinking outcomes more positively. Furthermore, Brown (1985) and Thombs (1991) reported that alcohol expectancies were better predictors of heavy and problem drinking than the demographic characteristics of the drinkers.

Among young adolescents, alcohol expectancies have been shown to predict the initiation of drinking behavior 1 year later (Christiansen, Roehling, Smith, & Goldman, 1989). Among college students, one study found that problem drinkers expected more relaxation/tension reduction than did social drinkers, whereas the latter group expected more social enhancement (Brown, 1985). Another college student study found that the expectancy profile that distinguished female problem drinkers from female nonproblem drinkers was relatively distinct from the profile that separated these drinker types among males (Thombs, 1993). In this same study, the AEQ factor that had the strongest discriminating value among the women problem drinkers (and thus provided the clearest indication of what they sought through drinking) was arousal with power, whereas for the men it was physical and social pleasure (Thombs, 1993).

In the 2006 Hispanic Americans Baseline Alcohol Survey, Mills, Caetano, Ramisetty-Mikler, and Bernstein (2012) examined alcohol expectancy variation in U.S. Hispanic subgroups. Data were collected from 5,224 randomly selected persons, ages 18 and older, representing four ethnicities: Puerto Ricans, Cuban Americans, Mexican Americans, and South/Central Americans. Mills and colleagues found that Hispanic alcohol expectancies could be characterized by three factors: emotional or behavioral impairment, emotional fluidity, and social extraversion. Emotional or behavioral impairment expectancies involved drinking outcomes related to losing self-control and becoming emotional or argumentative. Emotional fluidity expectancies were represented by feeling relaxed, romantic, friendly, and sexually aroused. Social extroversion expectancies described becoming talkative and laughing. Overall, Hispanic men expected more emotional fluidity than Hispanic women as a result of drinking. Puerto Ricans and Mexican Americans generally expected greater emotional fluidity than Cuban Americans and South/Central Americans. Gender differences in emotional fluidity were greatest among Puerto Ricans, followed by South/Central Americans, and Cuban Americans. Among Mexican Americans, there was no gender difference in emotional fluidity expectancy. These results highlight how culture and life experience influence beliefs about the effects of alcohol, and illustrate that the pharmacological effects of ethanol alone do not account for the range of human responses to alcohol.
In addition to alcohol, a body of psychometric research has generated evidence in support of a 10-factor model of cigarette smoking expectancies (Brandon & Baker, 1991; Rash & Copeland, 2008). Smoking expectancies include both immediate and distal positive and negative anticipated consequences of cigarette use. The 10 smoking expectancies factors are:

1. Negative affect reduction
2. Stimulation/state enhancement
3. Health risks
4. Taste/sensorimotor manipulation
5. Social facilitation
6. Appetite/weight control
7. Craving/addiction
8. Negative physical feelings
9. Boredom reduction
10. Negative social impression

These expectancy scales have adequate to good reliability. They distinguish between current smokers and ex-smokers such that the former group has higher scores on positive smoking expectancies and lower scores on negative expectancies, compared to the latter group (Rash & Copeland, 2008).

In a study of 1,262 monozygotic and dizygotic young adult, female twins who were regular smokers, Kristjansson et al. (2011) examined the relationships between cigarette smoking expectancies and nicotine dependence, as well as the heritability of cigarette smoking expectancy. The research team found that nicotine dependence was associated with the following six smoking expectancies: negative affect reduction, boredom reduction, weight control, taste manipulation, craving/addiction, and stimulation/state enhancement. In addition, Kristjansson and colleagues found some evidence of familial transmission of smoking expectancy. However, about 70% of the phenotypic variance in smoking expectancy was attributable to individual-specific influences. The smoking expectancy factor that appeared to be most strongly associated with heritability was boredom reduction.

Compared to alcohol and cigarette smoking expectancies, considerably less research has been conducted on other drug expectancies. Limited research has been done on marijuana and cocaine expectancies (e.g., Lundahl & Lukas, 2007; Schafer & Brown, 1991). These studies have produced some counterintuitive results that appear to be inconsistent with the direction of relationships predicted by expectancy theory. In an examination of marijuana smoking, Green, Kavanagh, and Young (2003) noted that that there is considerable variation in subjective effects, and this variation takes different forms. For example, marijuana may produce opposite effects in different users. Within a single smoking episode, the effects may vary or
they may vary across smoking episodes of the same user. These variations in subjective effects suggest there are significant qualitative differences in the experiences produced by alcohol use and cigarette smoking and those associated with marijuana use and cocaine use. To better understand the motivations behind drug use, more research is needed on the subjective effects of cocaine, marijuana, and other illicit drugs (Green et al., 2003).

Evidence in Support of Causality

A fundamental question is: Does expectancy influence alcohol and other drug use or is it merely an artifact of existing substance use? This question has important implications for both prevention and treatment of substance abuse. Evidence clearly indicates that expectancy is a causal determinant of drinking behavior and possibly smoking cannabis (Goldman, 2002). For example, Miller, Smith, and Goldman (1990) sought to determine whether alcohol expectancies could be detected in a sample of 114 elementary school children, grades 1–5. The investigators developed an assessment procedure that relied on hand puppets to collect expectancy data from the first to third graders. For fourth and fifth graders, the adolescent version of the AEQ was administered in addition to the use of hand puppets. Though they were less differentiated than those of adolescents and adults, it was found that alcohol expectancies were present in this age group. As age increased, expectancies about drinking tended to increase as well. Most of the increase occurred during third and fourth grades (children ages 8½–10 years). Because these children presumably had little or no personal drinking experience, it can be assumed that their expectations were the result of exposure to family drinking models, commercial advertising, and other media messages.

In a prospective study, a sample of 422 preteens and teens (mean age at baseline = 12.8 years) were assessed twice at a 12-month interval (Reese, Chassin, & Molina, 1994). Baseline alcohol expectancies were found to prospectively predict drinking consequences (problems) 12 months later. This relationship was observed even after the effects of the following variables were controlled for: baseline drinking consequences, parental alcoholism, and age. However, expectancies did not predict alcohol use, perhaps because of the relatively high number of abstainers and light drinkers among younger participants. Another prospective study assessed 461 participants, ages 12–14, over a 2-year period (Smith, Goldman, Greenbaum, & Christiansen, 1995). A baseline assessment was followed by two 12-month follow-ups. The purpose of the study was to examine the relationship between expectancy for social facilitation and alcohol use. The investigators found that teenagers’ expectations for social facilitation had a reciprocal relationship with their past drinking behavior. In other words, the greater their expectation for social facilitation, the greater their
drinking level, followed then by the greater expectations, and so on. Two other directional models were not supported by the data: (1) expectancy influences alcohol use and (2) alcohol use influences expectancy.

In a third prospective study, Stacy, Newcomb, and Bentler (1991) assessed alcohol and marijuana expectancies among 584 participants as they moved from adolescence to young adulthood. The primary purpose of the research was to determine the nature of the relationship between drug expectancy and drug use. Three possibilities were tested by structural equation models: (1) expectancies predict future drug-taking behavior; (2) expectancies result from drug use, that is, they merely reflect personal experience with a substance; and (3) the relationship between expectancy and drug use is reciprocal.

Stacy et al. (1991) assessed their sample twice at a 9-year interval. At the first assessment interval, the cohort’s mean age was about 18. The investigators found that the adolescent measures of expectancy were predictive of adult drug-taking behavior. Furthermore, the data suggested that expectancy is not a consequence or artifact of existing drug use but, rather, a determinant of these behaviors. Little evidence was found to support the social learning proposition that expectancy and drug use have a reciprocal or bidirectional relationship (Stacy et al., 1991).

**Expectancy and Treatment Outcomes**

Young, Connor, and Feeney (2011) examined the degree to which alcohol expectancies and self-efficacy expectancies were associated with alcohol dependence treatment outcomes. A total of 298 alcoholic clients (207 males) were administered the Drinking Expectancy Profile (DEP) at intake and upon completion of a 12-week alcohol abstinence program based on cognitive-behavioral therapy. They found that baseline measures of alcohol expectancy and self-efficacy were not strong predictors of treatment outcome. However, among the 164 patients who completed treatment, all alcohol expectancy and self-efficacy factors showed change over the course of treatment. Analysis of the variables that significantly discriminated treatment completers from noncompleters revealed that the former group had positive changes with regard to social pressure drinking refusal self-efficacy, sexual enhancement alcohol expectancies, and assertion alcohol expectancies. Young and colleagues concluded that treatment response may be bolstered by giving greater attention to the social functions of alcohol in clients’ lives.

Weinberger, McKee, and George (2010) examined changes in cigarette smoking expectancies during the course of an 8-week smoking cessation trial. This study evaluated the safety and efficacy of the monoamine oxidase B inhibitor selegiline hydrochloride compared to placebo. The investigators
Cognitive Models

classified clients into three groups: “quit” \((n = 18)\), “reduced” \((n = 34)\), or “not quit” \((n = 49)\) by 1-week point prevalence abstinence at the end of treatment. Smoking expectancies were assessed at three points in time: randomized assignment pharmacological treatment, 7 days after the target quit date, and at the end of treatment. Weinberger and colleagues found that smoking expectancies assessed prior to the quit attempt were not related to cessation outcomes. However, among clients who quit smoking, reductions were observed in expectations that smoking would reduce negative affect, boredom, and cravings, and facilitate social interactions. Among clients who did not quit smoking, expectancy increases were detected in negative social impression beliefs. Some gender differences were also observed. Medication did not change expectancies. Weinberger and colleagues recommended that attention be given to designing smoking cessation treatments that are tailored to clients’ beliefs about smoking outcomes.

Tiffany’s Model of Drug Cravings

The construct of urge or craving is central to many explanations of addictive behavior. It is used to explain the maintenance of a high rate of use as well as relapse. The notion that urges or cravings prompt substance use seems to be taken for granted by laypersons, addicts themselves, and many professionals.

Many years ago, Marlatt (1985) proposed a distinction between urge and craving, noting that an urge is an intention that motivates use, whereas craving represents the anticipation of a positive drug effect (i.e., an outcome expectancy). Regardless of whether this distinction is accepted, Marlatt’s conception represents a positive reinforcement model of urge–craving. In contrast, an even earlier model by Jellinek (1955) proposed that cravings represented the anticipation of relief from withdrawal—in essence, a negative reinforcement model.

Tiffany (1990) contends that neither Marlatt’s nor Jellinek’s models are accurate explanations of the relationship between craving and substance use. His longstanding position is based on an examination of the relationship between drug urge and actual use (Tiffany & Wray, 2009). Across both self-report and physiological measures, correlations between urges and drug use were only of modest or moderate magnitude (Tiffany & Conklin, 2000). This finding suggests that drug use occurs frequently without being prompted by urges. Furthermore, many relapses were not provoked by urges and cravings. In such cases, these episodes can be characterized as “absentminded relapses” (Tiffany, 1990, p. 163). To account for these observations, Tiffany created the following cognitive model to explain drug urges and cravings.
Human cognitive processing includes both automatic and nonautomatic processes (Shiffrin & Schneider, 1977). According to Tiffany (1990), an automatic cognitive process is “a relatively permanent sequence of tightly integrated associative connections in long-term memory that always become active in response to a particular input configuration” (p. 152). Among humans, across many classes of behavior, automatic processes are revealed by the following: (1) the task is performed speedily; (2) the behavior is executed without intention and is elicited by specific stimuli; (3) under eliciting stimuli, the behavior is difficult to inhibit or curtail; (4) the behavior is easy and nondemanding to carry out; and (5) the behavior can be conducted without much conscious awareness. The common example of automatic cognitive process is driving a motor vehicle to a familiar destination, such as work. Operation of the vehicle occurs automatically and without much conscious awareness.

The same processes may guide compulsive drug self-administration, whether it be smoking, alcohol consumption, or drug injection. Tiffany and Conklin (2000) assert that with repeated practice, drug acquisition and consumption become behaviors that are produced by automatic cognitive processing. He employs the concept of drug use action plans to emphasize that, over time, the sequence of behaviors involved in using alcohol and/or drugs becomes integrated, efficient, and effortless. In typical situations in which drug use occurs unimpeded, urges do not accompany the process. It is on this point that Tiffany’s model departs significantly from traditional views of urges–cravings. To explain how urges are generated, Tiffany points to an opposite set of cognitive processes.

Nonautomatic cognitive processing is slow, and it depends on careful attention and effort. Other features of nonautomatic processing include (1) identification of strategies, (2) conscious decision making, (3) planning, and (4) monitoring of task performance. In Tiffany’s (1990) model, both abstinence-avoidance and abstinence-promotion urges are produced by nonautomatic processes. Abstinence-avoidance urges occur when drug use action plans are blocked or obstructed by external barriers (e.g., run out of cigarettes late at night), whereas abstinence-promotion urges are produced when the individual is attempting to change drug use or to maintain abstinence (e.g., while in treatment). Tiffany (1990) hypothesizes that stress and other negative emotional states give rise to both types of urges, which generate competing nonautomatic processes that can influence drug use action plans. This competition tends to inhibit the impact of abstinence-promotion urges and thereby increases the likelihood of individuals executing their automatic drug use action plans.

This cognitive processing model continues to challenge the addiction treatment community (Tiffany & Wray, 2009). It seems that some researchers and practitioners have difficulty accepting that cravings and substance use are not always closely linked. Others are perhaps concerned
that describing addiction as an automatic process trivializes the problem and fails to give proper emphasis to important features of the disorder.

**Cognitive Dynamics of Relapse**

A *relapse* can be defined as a return to excessive alcohol and/or drug use following a period of sustained abstinence. It is probably the most significant issue in treating chemically dependent clients. It is often puzzling that individuals who seem to recognize the seriousness of their addiction, who appear committed to recovery, and who have gained some mastery over their drinking or drug-taking behavior often have tremendous difficulty in remaining abstinent.

Historically, views on relapse have tended to be moralistic. Such views still predominate in many segments of our society. Relapsed alcoholics or addicts are scorned: They are thought of as lazy, irresponsible, or possibly weak-willed. Essentially, they are viewed as having a defect of character. Unfortunately, such views, especially when held by legislators, government officials, and other key decision makers, impede progress in treatment approaches by depriving treatment and research centers of much-needed financial support.

Interestingly, the disease model of addiction has traditionally had little to say about relapse prevention. AA folklore, and especially its slogans, provide various messages of caution about “slippery places” and direct members to call their sponsors, but little is provided in the way of skills. Moreover, the disease model has not elaborated on the meaning of relapse. The loss-of-control concept in alcoholism has, in fact, been cited for inadvertently contributing to full-blown relapses. The assertion that alcoholics cannot stop drinking once alcohol enters their bodies seems to establish an expectation that 1 drink must lead to 20. Thus, when many alcoholics and other drug addicts do relapse, they often seem to go on extended binges.

**An Analysis of Relapse and Its Prevention**

SLT offers a perspective on relapse that differs from the one put forth by the traditional disease model. According to Lewis et al. (1988), “The social learning perspective . . . looks at a return to substance use as a learning experience that can be successfully used to bolster gains previously made in treatment” (p. 200). In fact, clients are taught to view “slips” in just this way. Relapse is not viewed as something that is “awful” or “terrible,” and clients are not taught to fear it. Instead, they are encouraged to understand it as a response to environmental cues that constantly impinge upon them. It is not evidence that they are incompetent, stupid, or worthless. The experience of relapse can provide clients with the opportunity to learn about
their high-risk situations, or triggers, and to identify strategies that they can use to prevent them.

Much of the work done in relapse prevention has been carried out by Marlatt and Gordon (1985). They view relapse as the result of high-risk situations combined with the tendency to engage in self-defeating thinking. High-risk situations are those that may trigger a slip; they may include visiting a friend at a bar, attending a wedding reception, returning to an old neighborhood, or the like. In AA parlance, as noted, they are referred to as slippery places. Relapse prevention strategies teach clients how to cope better with high-risk situations. Thus, this approach can be viewed as an attempt to enhance coping skills. Client self-efficacy is a critical factor.

Marlatt and Gordon (1985) believe that self-defeating thinking emerges from lifestyle imbalances. These lifestyle imbalances occur when the external demands on an individual’s time and energy interfere with his or her ability to satisfy desires for pleasure and self-fulfillment. In this imbalance, recovering clients feel pressure to “catch up” for lost time and thus feel deprived of pleasure, enjoyment, fun, and so on. As a result, they come to feel that they deserve indulgence and gratification. During this state of perceived deprivation, cravings for their preferred substance tend to arise, and they begin to think very positively about the immediate effects of the drug. In other words, they generate positive alcohol or drug expectancies in which substance use is anticipated to make their immediate situation better. At the same time, they deny or selectively forget about all the negative consequences that go along with a reinitiation of use. There is often the tendency to rationalize the return to using (e.g., “I owe myself this drink”).

**Apparently Irrelevant Decisions**

In this process of covert cognitive change, recovering persons may find themselves in more and more high-risk situations prior to the first slip. As this movement begins, they start making apparently irrelevant decisions (AIDs; Marlatt & Gordon, 1985). According to Lewis et al. (1988):

> These AIDs are thought to be a product of rationalization (“What I’m doing is OK”) and denial (“This behavior is acceptable and has no relationship to relapse”) that manifest themselves as certain choices that lead inevitably to a relapse. In this respect AIDs are best conceptualized as “minidecisions” that are made over time and that, when combined, lead the client closer and closer to the brink of the triggering high-risk situation. (p. 203)

Figure 7.2 illustrates the sequence of covert cognitive events that precede a relapse.
Examples of AIDs abound. Following is a list of typical ones as they apply to recovery:

1. A recovering alcoholic begins to purchase his cigarettes at liquor stores, insisting that the liquor stores are more conveniently located than other sales outlets.
2. A recovering alcoholic begins taking a new route home from work, saying that she is bored with the old way. The new route is somewhat longer; it also has several liquor stores along the way.
3. A husband in early recovery begins to offer to run to the store for groceries. His wife is pleased. He regularly goes to the supermarket with a liquor store next door, even though it is further from home. He says that this market has better prices.

4. A recovering substance abuser goes to an old drug buddy’s house to borrow a hammer.

5. A recovering alcoholic offers to go alone on out-of-town business trips. Her supervisor says that it’s not necessary that she always go, but she says she likes to travel by herself.

6. A recovering alcoholic refuses to get rid of his liquor cabinet, saying that he needs it when entertaining friends and relatives.

7. A recovering substance abuser transfers to a new job within the company. It is not a promotion, but it happens to have little direct supervision.

**The Abstinence Violation Effect**

In the SLT perspective, there is a significant difference between a lapse (or a slip) and a full-blown relapse (Abrams & Niaura, 1987). A lapse is seen as a return to drinking that is brief, involves ingesting a small amount of alcohol or another drug, and has no other adverse consequences. By contrast, a relapse involves a return to heavy use (perhaps a prolonged binge) and is accompanied by a host of emotional and physical complications. The aim of relapse prevention is to prevent lapses from turning into relapses (Abrams & Niaura, 1987).

The abstinence violation effect is the experience of intense shame, guilt, and embarrassment that frequently occurs following a lapse or a slip (Marlatt & Gordon, 1985). It increases the likelihood that a slip will turn into a full-blown relapse. Among those recovering persons who are committed to abstinence, the slip may be interpreted as evidence of personal inadequacy or incompetence. The person can be overwhelmed by intense negative emotion directed at self. One recovering alcoholic told me (D. L. T.) that he recalls saying this to himself after he slipped: “I can’t believe I did this. I’m so stupid. What I’ve done is horrible. My wife will have no respect for me. This shows that I really am nothing but a no-good drunk—just a piece of shit. I might just as well keep drinking. It don’t matter no more.”

Early in treatment, prior to lapses, clients need to be educated about the meaning of slips and relapses. It is important that they not think of relapse as personal failure. This type of cognitive restructuring teaches that a slip is only a mistake, not evidence of inadequacy or worthlessness. Furthermore, it is helpful for the clients to attribute the slips to environmental cues rather than to themselves. By doing this, they place the focus properly
on dealing effectively with the trigger situations. Such a focus tends to build self-efficacy as clients learn skills for coping with high-risk situations.

**Chapter Summary**

The cognitive-behavioral models provide a sound conceptual base for understanding substance use. The initiation of substance use is influenced by outcome expectancies and by modeling. Young people initiate substance use as a result of observing others. They imitate parents, peers, media figures, and others, because they anticipate deriving the same rewards they observe others obtain.

Alcohol and drug abuse are self-regulated behaviors. The high degree of self-regulation is demonstrated by the time and effort required to maintain a lifestyle organized around drinking and/or drug use. The view that such behavior is “out of control” is probably inaccurate.

The concept of self-efficacy is an extremely important one in assisting persons with substance use disorders. Evidence suggests that a crucial determinant in whether treatment will be successful is the client’s belief in his or her ability to master the various tasks of recovery. Without this belief, treatment is likely to fail. In addition, research indicates that self-efficacy is most likely to be enhanced by performance accomplishments. Thus, it is imperative that clients initially be given small tasks at which success is virtually assured, before they attempt more difficult ones.

Cognitive models have shed light on how drug outcome expectancies influence drug use and related behavior, including treatment outcomes. Some of this work has attempted to tie expectancy formation to cognitive processing. These important advances in cognitive science have added precision to our understanding of such nebulous topics as alcohol use and stress and drug urges and cravings.

Relapse is often related to an inability to cope with environmental stressors (i.e., high-risk situations). It often appears to result from negative emotional states, social pressure, and interpersonal conflicts, rather than being evidence of a character flaw. Effective relapse prevention strategies anticipate these events by teaching clients specific coping skills tailored to their individual needs.

Finally, cognitive-behavioral relapse prevention considers lapses (and even relapses) to be opportunities for learning. Instead of viewing them as events to be fearful of, and as evidence of treatment failure, treatment providers should assist clients in analyzing their high-risk situations and covert cognitive processes. Helping clients to think differently about the meaning of relapse can result in a reduction of the abstinence violation effect and thus in fewer subsequent full-blown relapses.
REVIEW QUESTIONS

1. As it relates to determinism, how does social learning theory (SLT) differ from both psychoanalysis and conditioning theory?

2. How are expectancies and modeling related to one another?

3. What is self-efficacy? How is it influenced?

4. With respect to substance use, what types of self-efficacy exist? Has research found self-efficacy to be related to treatment outcomes?

5. What are alcohol and drug expectancies?

6. How are placebo conditions used to study alcohol expectancies?

7. In Tiffany’s model, when do drug urges appear in cognitive processing?

8. How has relapse been viewed historically?

9. What are the cognitive patterns that lead to relapse? What is the significance of feeling deprived?

10. What are apparently irrelevant decisions (or AIDs)? How do they lead to relapses?

11. What is the abstinence violation effect?
Systems theory and family therapy have been linked to each other for several decades; however, the two are not synonymous. General systems theory emerged from such disciplines as physics, engineering, mathematics, and biology, and is concerned with the structure and operation of whole entities, such as machines and organisms (von Bertalanffy, 1968). Rather than focusing on individual units or parts in isolation, systems theory explains the organization, composition, or network as a whole, in its entirety. This is accomplished, in part, by studying the dynamics of a particular system; that is, examining the connectivity and reciprocal influences within the system, and how the system maintains itself over time. In the social and behavioral sciences, including the fields studying addictive behaviors, the connections of interest are social (among people) and ecological (interactions between people and their environment). These systems include culture-based traditions and practices (as discussed in Chapter 9) and communities such as neighborhoods and schools. The public health model discussed in Chapter 3 is a type of systems theory in its focus on population health, rather than just individual-level health.

The family is only one system represented under the umbrella of systems theory. Early application of systems theory to the family unit was done by Bateson, Jackson, Haley, and Weakland (1956), who studied how families with mentally ill members, namely schizophrenia, functioned on an ongoing basis. They focused on communication patterns among members, specifically “double-bind” communications, or contradictory messages from the same person (e.g., parent) to another (e.g., child) that result in a guaranteed failure to please the speaker (Kaslow, Bhaju, & Celano, 2011). Bateson et al. proposed that double-bind and other distorted communication patterns among family members caused schizophrenia. Although this
etiological explanation is no longer supported, Bateson et al.’s focus on the family unit rather than the individual to explain human behavior paved the way for the emergence of family therapy as a distinct discipline (see Mangelsdorf & Schoppe-Sullivan, 2007).

The family system typically includes the subsystems of spousal or other adult couple dyads, parent–child units, and siblings; it also can span several generations as multigenerational families. Falloon (2003) describes the family as “the intimate social network that provides both emotional and physical support for an individual on an everyday basis” (p. 154) and is not necessarily confined to people who share a living space or are related by birth. Regardless of the proximity or biological connection among members, the family operates as a multilevel social system rather than simply as a collection of members who work independently (Bandura, Caprara, Barbaranelli, Regalia, & Scabini, 2011). According to Kaslow et al. (2011), principles of systems theory integral to family therapy include (1) whole-ness, meaning that families are organized wholes with interdependent components, and that the whole is greater than the sum of its parts; (2) ana-morphosis, an evolutionary concept referring to the complex changes that occur in the family unit’s composition and function over time (e.g., births, deaths, separation); (3) homeostasis, a regulatory function that seeks equilibrium or stability in patterns of family member interactions, patterns that often are not amenable or responsive to change; and (4) circularity or cir-cular causality, the principle that patterns of interaction are bidirectional, reciprocal, and circular, rather than linear, and that there is no identified beginning or end in the sequence of events in these interactions.

To help understand these and other family system concepts in this chapter, we borrow the analogy used by Miller et al. (2011)—the analogy of a mobile that hangs over a baby’s crib. Think of this mobile as a family unit. Just as any family has more than one member, the mobile has several parts. These different parts hang separately but they are all connected and held together by a fulcrum or central organizing point. In some families, this fulcrum is an authority figure (e.g., parent) or a belief system (e.g., religious faith). When the baby’s mobile is turned on, all the parts move in the circular and steady motion for which it was designed; each part may twirl in different ways, but all the parts move together. This interconnectivity may be described by some families as “the ties that bind.” When the baby tugs at one of the hanging parts on the mobile, there is a disruption in the circular motion. And, if one part is pulled too hard, the mobile becomes lopsided; it is no longer balanced.

Addiction certainly can and does disrupt familial equilibrium. Like the baby’s mobile, the entire unit is thrown off-kilter and becomes imbalanced; cohesion is compromised, and chaos and unpredictability are prominent. The fulcrum may no longer be operating and may trigger, in its dysfunc-tion, what Jackson (1962) described some time ago as “a cumulative crisis
for the family” (p. 482). In this way addiction affects all members, not just the person or persons who have a substance use problem or other addictive disorder. Persons who have grown up in a family affected by addiction know this all too well. In a recent study (Hussaarts, Roozen, Meyers, van de Wetering, & McCrady, 2011), the family member of a patient in outpatient addiction treatment reported that about four other family members or friends were directly affected by the patient’s addiction-related problems (patients reported less than three affected family members or friends). Addiction affects not only a person’s family of origin (biological and adoptive); it also affects the adult’s nuclear and extended family unit—families related by blood, marriage, legal, or life partnership, and/or shared residence. As reported by Rowe (2012), the initiation and maintenance of drug use are products of multiple interacting factors in the individual as well as in the family and other systems (e.g., peer network, community). In turn, family functioning is significantly compromised by a family member’s drug use, “maintaining a corrosive and often multigenerational cycle of addiction and related problems” (p. 60).

Addiction, however, does not necessarily “tear apart” every family. It can function, somewhat ironically, as a homeostatic or stabilizing force. This often happens over time and subtly. It is as if the family member’s substance abuse fuels or maintains, rather than disrupts, the circular motion of the baby’s mobile; it is the fulcrum that regulates family functioning. According to Steinglass (1981), many families maintain their “structural, emotional, and economic integrity” (p. 578) over the course of at least one member’s addiction. From a systems point of view, the abusive drinking or drug use has adaptive consequences. That is, it functions to keep the family “in balance”—not a “healthy” balance, but a relatively stable one nonetheless. This pathological equilibrium or rigidity is preferred over continual chaos and crisis. In essence, such families opt for low-level discomfort and “put up” with the substance abuse in order to avoid grappling with even more painful and sensitive issues. When the drinking or drug use is stopped (e.g., an attempt at recovery), the family becomes dysregulated or is thrown off balance.

It should be noted that dysfunctional families are not forever locked into maladaptive patterns of interaction. The early research of Steinglass (1981) identified phases of alcoholism in the family and cycles or periods of transition from active addiction to sobriety and vice versa (i.e., relapse). The concept of homeostasis therefore describes the tendency to regulate change; it does not describe an unalterable pattern of maladaptive interaction.

Whether addiction serves to stabilize or disrupt the family system, what explains its effects? How can addiction have so many and seemingly contradictory effects on families? This chapter responds to these questions by consulting the work of clinical practitioners and scientific investigators.
Three models of family theory in addictions are presented and corresponding approaches are described, with emphasis on evidence-based practices. We begin with a synopsis of how addiction influences the family system.

**Genetic and Environmental Influences**

Two primary sources of influence in any family system are genetic factors and environmental conditions. As described in Chapter 2, genetic factors may explain as much as 40–60% of the etiology of substance use disorders. In a recent Swedish adoption study, Kendler and colleagues (2012) found the risk for drug abuse among adopted children with at least one biological parent with drug abuse (8.6%) to be more than twice the risk for adopted children who did not have a biological parent with drug abuse (4.2%). This difference was statistically significant, and the risk for drug abuse increased significantly if both biological parents had a drug abuse problem (11.9%) compared to only one (8.2%). Of course, it should also be noted that the large majority of children with one or more biological parents with a drug problem did not develop a drug problem themselves. Genetic factors may also explain disordered gambling. After controlling for shared environments among American twins, genetic influences were found to account for about 49% of disordered gambling in men and women (Slutske, Zhu, Meier, & Martin, 2010).

Environmental influences on the family system include within-family or intrafamilial interactions (e.g., parenting practices, level of family cohesion) and extrafamilial exchanges or ways in which an individual member or the entire system is affected by forces external to the family (e.g., incarceration of family member, adolescent involvement with deviant peers). Of course there is significant overlap between intrafamilial and extrafamilial influences: parental implementation of rules, for example, is impacted by events taking place outside the family, such as adolescent involvement with friends who smoke cigarettes; the reverse is also true. Both types of environmental influences are associated with addictive behaviors. For example, in one study of male twin offspring (McCutcheon et al., 2013), having a mother who inconsistently applied rules and having friends who smoked cigarettes while growing up were found to significantly increase the likelihood of developing not only alcohol use disorders, but also comorbid disorders (e.g., alcohol dependence and major depressive disorder). In addition, parental gambling and approval of their children’s gambling practices are associated with adolescent gambling and gambling-related problems (McComb & Sabiston, 2010). In a longitudinal study of over 1,200 low-income minority children from inner-city Chicago (Artega, Chen, & Reynolds, 2010), the two factors that significantly predicted substance dependence by age 26 and exemplified intrafamilial and extrafamilial influences
were (1) frequent family conflict at ages 5–10 and (2) involvement in the child protective system by age 9. Although not tested, it is highly likely that early intrafamilial conflict contributed to later child protective service involvement.

What is clear is that adversity experienced early in life contributes significantly to subsequent substance use problems. Zimić and Jukić (2012) found that compared to adults without substance use disorders, adults with addictions experienced more psychological trauma, parental divorce and death, and poor parent–child communication (particularly with the father) in early childhood. Adults with addiction problems also reported receiving relatively low levels of parental monitoring as children. Four adverse childhood events/experiences (ACEs) were assessed in the National Epidemiologic Survey on Alcohol and Related Conditions (a national probability sample). The only ACE significantly associated with lifetime alcohol dependence was parental divorce before age 18 (Pilowsky, Keyes, & Hasin, 2009). The other ACEs were death of a biological parent, living with foster parents, and living in an institution outside the home. Experiencing any of these four ACEs, however, increased the likelihood of adult alcohol dependence. Additional ACEs associated with subsequent alcohol problems for male and female adults are childhood emotional, sexual, or physical abuse; witnessing domestic violence (e.g., having a battered mother); household drug use during childhood; mental illness in the home; and parental separation (not just divorce). Compared to their female and male counterparts who reported no ACEs, Strine et al. (2012) found that women who reported four or more ACEs were 2.7 times more likely to report alcohol problems as an adult, and men reporting four or more ACEs were 1.9 times more likely to report alcohol problems as an adult.

Caregiver Substance Abuse and Child Maltreatment

Although popular lore has linked substance abuse, particularly alcohol abuse, with child maltreatment and domestic violence for hundreds of years, it was only beginning in the mid-1980s that the problem began to receive substantial attention in the research literature (Lee & Weinstein, 1997). The accumulated body of evidence now provides credibility to the anecdotes by showing that there is a strong association between caregiver substance abuse and risk of child maltreatment (Ammerman et al., 1999; Berger et al., 2010; Besinger et al., 1999; Dube et al., 2001; Dunn et al., 2001; English et al., 1999; Forrester, 2000; Fuller & Wells, 2003; Larrieu et al., 2008; McNichol & Tash, 2001; Melchet, 2000; Scannapieco & Connell-Carrick, 2007; Walsh et al., 2003). The U.S. Department of Health and Human Services (1999) has estimated that about two-thirds of all children placed in foster homes for protective reasons had caregivers with substance abuse problems. However, even higher rates have been
observed in some samples. For example, Besinger et al. (1999) found that among a sample of 639 children who had been removed from their home for substantiated maltreatment incidents, caregiver substance abuse was present in 79% of the cases. This problem may be disproportionately concentrated in African American caregivers (Small & Kohl, 2012; Vanderploeg et al., 2007).

Although alcohol is often implicated in child maltreatment, caregiver methamphetamine use also places children at high risk for neglect and abuse. Messina and Jeter (2012) studied 99 children who had been removed from home-based methamphetamine laboratories in Los Angeles County during the years 2001–2003. Child neglect was documented in 93% of the cases. Also alarming was that 80% of the children received a medical diagnosis, which in most cases was related to exposure to the chemicals used to manufacture methamphetamine in their homes.

It is important to note that the relationship between caregiver substance abuse and child maltreatment is correlational and not necessarily causal. In some cases, alcohol and drug use may facilitate child maltreatment among caretakers who have a prior proclivity for such behavior; in other cases, there may be mechanisms that mediate between substance use and maltreatment of a child. Abusive caretakers are often stressed by multiple life problems including poverty, inadequate social support, and a personal history of child maltreatment (Young-Wolff et al., 2011b). In addition, it should be recognized that many substance-abusing caretakers do not neglect or abuse their children (Scannapieco & Connell-Carrick, 2007). Regardless, the problem of child maltreatment attributable to caretaker substance abuse has not been adequately addressed because of the lack of linkages between the child welfare system (i.e., child protective services, juvenile justice, delinquency and violence prevention, family counseling) and substance abuse treatment services (U.S. Department of Health and Human Services, 1999; Young, Gardner, & Dennis, 1998).

When both genetic vulnerability and adverse environmental stressors appear in families, addiction is likely to occur. It is the confluence of these influences within the family context that fosters addictive behavior. That one or both biological parents have problems with addictive behavior does not guarantee that their offspring will have such problems as adults. Their child’s vulnerability to addiction is higher than persons without parental addiction, but genetic susceptibility is not destiny. Similarly, familial environmental influences can increase a child’s susceptibility to addictive behaviors, but these influences, even any number of ACEs, do not cause addiction for an adult. How addiction is transmitted and maintained among family members—even over generations and during end-of-life care (Bushfield & DeFord, 2010)—is explained in many ways. Three of them are discussed in the following sections.
McCrady, Ladd, and Hallgren (2012) identify three models that dominate contemporary family substance abuse treatment: family disease models, family systems models, and behavioral models. We believe these models apply to the range of addictive behaviors (e.g., substance dependence, gambling), not just substance abuse. Each of these models is described in the following sections. Although there is overlap among these three models, we highlight characteristics that are more illustrative of one model than another. There is more empirical support for the family systems models and the behavioral models than the disease models, the latter having developed in early substance abuse treatment settings. In the second half of the chapter, several evidence-based or empirically supported family-based approaches are discussed, each of which is informed by either the family systems models or behavioral models.

**Family Disease Models**

The earliest model of family theory in the addictions is the family disease model. It had its beginnings in the 1950s when the accounts of wives of alcoholics and the stages of family adjustment to an alcoholic member were explored (Jackson, 1954). This represented a shift in focus from the individual alone (i.e., the person with a substance use problem) to the relationships with this individual. Addiction was no longer thought of as confined to one person, but was a condition shared among all family members. As Jackson (1962) observed, “Members of the alcoholic’s family are no longer regarded simply as innocent victims but may be seen, for instance, as etiological agents or as complicating the illness” (p. 472). This was also a time when family members of alcoholics established their own support groups, namely Al-Anon, the autonomous arm of AA for the spouse and relatives of an alcoholic, established in 1951.

The familial network of interest at this time in history consisted of a male alcoholic husband and father and his wife and children. The initial focus thus was on husband–wife, father–children, and mother–children relationships; sibling relationships also were explored (Steinglass, Weiner, & Mendelson, 1971). The families studied were primarily white and middle- to upper-middle-class, and were characterized as alcoholic families or alcoholic systems (Steinglass et al., 1971). Research involving direct observations of daily interactions among family members at home (Steinglass, 1981) or in laboratory conditions (Steinglass et al., 1971) revealed distinct and predictable patterns of within-family regulatory behavior over time, such as considerable time spent in separate rooms, rarely being equally drunk simultaneously (i.e., a relatively sober member protecting the
drunken family member), and lack of extrafamilial engagement (i.e., few or no visitors to the home). From these observations an *alcoholic family identity* (Steinglass, 1987) could be discerned.

Specific reference to alcoholism or addiction as a family disease did not occur until the 1980s, concurrent with the burgeoning research on family systems, the growing acceptance of addiction as an illness or disease, the growth of Al-Anon, and the development of the Adult Children of Alcoholics (ACOA) movement (see Brown, 1991) that espoused the “damage model” that “all children are affected” by parental alcoholism (Black, 1982, p. 27). Although Steinglass (1981) described chronic alcoholism as “a unique disease” for families (i.e., unique in its “tenacity and its fluctuating, cyclical life course” [p. 583]), it is Wegscheider-Cruse (1989) who is credited with popularizing the concept of addiction (namely alcoholism) as a family disease. She described it as “both *personal* and *systemic*; it affects each family member as an individual and the family system as a whole” (p. 80; italics in original). As a family disease, it is not so much that addiction is a member of the family; rather, it is that *all* members share in addiction and are “afflicted with complementary and interlocking illnesses” (Miller et al., 2011, p. 201). It is manifested in how members interact with one another—how their roles, responsibilities, and communication styles develop and adjust when at least one family member has an addictive disorder. In this way, addiction in the family also can be considered “a disease of lifestyle” (Kumpfer, Alvarado, & Whiteside, 2003, pp. 1760–1761).

**Codependency**

One interactional style that fits with the family disease model is that of *codependency* or *codependence* (or *co-alcoholism*, when alcoholism is involved). It describes an unhealthy relationship pattern typically between two adults; often one of these persons has substance use problems and the other does not (the *codependent*). Children of alcoholic parents can exhibit what some have termed *para-alcoholism* (Greenleaf, 1984). The codependent person often protects the alcoholic or addict from the natural consequences of substance abuse (Koffinke, 1991). Such behavior is referred to as enabling. Examples include calling in sick to a dependent spouse’s employer when the spouse has been out drinking or using drugs all night, or cleaning up after a spouse or parent who has vomited during the night from too much alcohol. Hence, *codependency* is considered an unhealthy relationship pattern, whereas *enabling* is a common behavior arising from it.

From their systematic analysis of the literature on codependency, Dear, Roberts, and Lange (2005) identified four key features of it. First, the person who is codependent has an *excessive external focus* and is overly involved with other people, namely a significant other with substance use problems. There is an abnormal reliance on this other person’s
approval and acceptance, resulting in self-sacrificing behavior on the part of the codependent person, the second core feature of codependency. The codependent person neglects his or her own needs in order to please the partner and, in the process, loses all sense of self or identity. It is as if the codependent person has become emotionally dependent on the addict. The addict’s mood dictates the codependent person’s mood, implying that the codependent person has great difficulty experiencing emotions for him- or herself. This is the third defining feature of codependency. In a sense, the codependent becomes an appendage to the addict and the substance abuse. Both share an addiction-like condition. In the words of Conyers (2003), it is as if the codependent person has become “addicted to the addict,” exhibiting denial, obsession (i.e., preoccupation with family member’s actions, feelings), and compulsion to control the family member’s behavior. This controlling behavior is the fourth core feature of codependency. It is as if the codependent person has assumed full responsibility for resolving the problems of the other.

According to Beattie (1992), the concept of codependency was coined in the late 1970s or early 1980s by clinicians in the addictions field. It resembles earlier and more sophisticated concepts that had been used in family systems theory to describe dyadic relationships that lacked emotional maturity or healthy differentiation (e.g., an adult child’s inability to attain independence from his or her family of origin). Several of these concepts are reviewed by Scaturo, Hayes, Sagula, and Walter (2000). These include pathological complementarity, interlocking pathology, and overadequate—inadequate reciprocal functioning—all of which describe the dysfunctional relationship of two partners who do not hold equal positions of power, but remain rigidly intertwined in a system that maintains equilibrium or balance over time. It may be that the term codependence gained a wide audience among family members in addictions treatment because of its brevity, its use of a recognizable addiction-related word, and its promotion by clinicians (many of whom were in recovery from a substance use problem or had a family member with an addictive disorder). Today, codependency remains a popular term in self-help groups and in the self-help literature, as well as in some clinical settings, even though one of its most staunch proponents acknowledges its “fuzzy definition” (Beattie, 1992, p. 47).

The vague definition of codependency is but one of the many longstanding criticisms of it. Two others include its lack of empirical support (Dear et al., 2005; McCrady et al., 2012; Sandoz, 2004) and the failure of its proponents to affiliate with and practice according to family systems therapy (Scaturo et al., 2000). Although there is substantial evidence supporting an association between the active and problematic drinking of a spouse (often male) and the distress of his or her partner (often female), “there are no compelling empirical data indicating causal evidence for the
full construct of codependency” (McCrady et al., p. 230; italics added). And despite their identification of four core features of codependency, Dear et al. (p. 203) are adamant that “this does not mean that we have established that a syndrome of codependency actually exists.” Furthermore, practitioners with little training in family systems theory who use the terms codependency or codependence with clients as jargon or in a cavalier fashion may underestimate or overlook entirely the complexities involved in a severely dysfunctional family system. According to Scaturo et al., this kind of practice can have “deleterious effects” (p. 65). One of these is that continued reference to a person and an unhealthy relationship as codependent “often encourages the person to excuse his or her own behavior in relations with others rather than trying to find solutions” (Sandoz, p. 37). Another is that labeling someone as codependent (or not refuting a client’s self-label as codependent) can prevent healthy self-exploration, thus inhibiting the process of emotional growth (Scaturo et al.).

**Family Roles**

Over the years, therapists in addictions treatment have created a variety of schemes for classifying the types of role behavior in the chemically dependent family. For example, based on her work with children, Black (1982) proposed three roles that children of an alcoholic parent adopt: the very responsible child (often the oldest or only child), the adjuster (follows directions, adjusts to circumstances of the day), and the placater (the family comforter, tries to make others in home feel better, feels responsible for pain of others). Wegscheider-Cruse (1989) later developed five family roles: the enabler, hero, scapegoat, lost child, and mascot. Along with the chemically dependent family member, these five family roles are described in this section.

As with the concept of codependence, these typologies are derived from clinical practice, not from research. They are therefore not empirically validated (Sher, 1997). They have been criticized because they assume a rather stable pattern of family functioning and have not been applied across cultures (Vernig, 2011). Nevertheless, family role schemes continue to be relied upon in clinical settings because of their heuristic appeal to clinicians and clients alike. Vernig acknowledges that they have “entered into the folk wisdom of the field of substance abuse counseling and self-help support groups” (p. 535). Because they remain well recognized and applied in clinical settings, we believe that addictions practitioners should have an understanding of these concepts. The following discussion presents one of the common classification schemes.

In this scheme, the family is assumed to be a nuclear one, with two parents and four or more children. Also, because one of the parents is assumed to be chemically dependent, the scheme emphasizes the adaptive roles of the
children in the family. Furthermore, it should be noted that although some chemically dependent families have members who clearly fall into a specific role, other families have members who exhibit characteristics of more than one role; others have members who shift from role to role as time passes; and in the life of some families certain roles never appear. Thus, the roles are probably too “neat” for most chemically dependent families. However, for sake of discussion, each one is presented in its stereotypical form.

THE CHEMICALLY DEPENDENT PERSON

Within a family systems perspective, the chemically dependent member is not diseased but is playing a role, which is to act irresponsibly. This role has a homeostatic function. Typically, it serves to suppress more basic marital conflict or to divert attention from more threatening family issues.

An important aspect of the chemically dependent role is emotional detachment from the spouse and the children. One consequence of this distancing is the abandonment of parental power. The power is often assumed by the nondependent spouse and an older child (to be described later). The “first love” of the alcoholic or addict becomes the bottle or the drug. Over time, the self-administration of the substance becomes the central activity in this person’s life; family life diminishes in importance.

THE CHIEF ENABLER

The second role is often referred to as the chief enabler or simply the enabler. Often, numerous enablers exist in the family; however, the chief enabler is usually the nondependent spouse. Enabling is a behavior that inadvertently supports the addiction process by helping an alcoholic or addict avoid the natural consequences of irresponsible behavior. Most addicts have at least one enabler in their lives, and many have three, four, or more who help maintain their addiction.

From a family systems perspective, the chief enabler reduces tension in the family (i.e., maintains family balance) by “smoothing things over”—that is, making things right. The enabler often faces a dilemma: If he or she (and more often she) does not bail the alcoholic/addict out of a bad, sometimes dangerous, situation (e.g., a drunk husband alone at a bar), the substance abuser could do serious harm to self or others. A wife of an alcoholic once told one of us that she knew she was enabling her husband by picking him up from their snow-covered yard, but she had no choice, as otherwise he would have frozen to death.

In many cases, the chief enabler is unaware that the enabling behavior is contributing to the progression of the alcoholism or drug addiction. Enablers believe that they are simply being helpful and holding their families together, even though anger is their primary feeling (Wegscheider-Cruse,
Although well intended, their efforts often have destructive long-term consequences for their chemically dependent spouses (Deutsch, 1982). Enablers also incur physical, emotional, mental, and spiritual difficulties (Wegscheider-Cruse, 1989).

THE FAMILY HERO

The role of the family hero is usually adopted by the oldest child. This role is also referred to as the parental child, the superstar, and the goody two shoes (Deutsch, 1982). This child attempts to do everything right. He or she is the family’s high achiever, and as such appears quite ambitious and responsible. Given the family circumstances (i.e., a chemically dependent parent), the child is often admired for excelling under difficult conditions.

The family hero often takes on parental responsibilities that the chemically dependent parent gave up. He or she provides care for younger siblings by cooking for them, getting them ready for school, putting them to bed, doing laundry, and so on. The nondependent spouse (i.e., the chief enabler) usually does not have much time for these chores because his or her time is divided between working and caring for the alcoholic or addicted spouse.

Family heroes frequently do well in academic and athletic pursuits (Deutsch, 1982). They may be class presidents, honor students, starters on the basketball team, or the like. They are achievement oriented and frequently develop well-respected professional careers. Deutsch (1982) suggests that many of them later become workaholics. Their achievements, however, are not to satisfy their own needs, but to fill the self-worth deficit of their parents or other family members (Wegscheider-Cruse, 1989). This exemplifies the selfless heroism of the hero. The family hero reduces tension in the family simply by doing everything “right.” The hero is the source of pride for the family, inspiring desperately needed hope and giving the family something to feel good about. The hero’s accomplishments are distinctions around which the family members can rally and say to themselves: “We’re not so bad after all.”

THE SCAPEGOAT

The scapegoat role is often adopted by the second oldest child. The scapegoat can be viewed as the reverse image of family hero (Wegscheider-Cruse, 1989). This child does very little right and is quite rebellious, perhaps even antisocial. Scapegoats may be involved in fights, theft, or other trouble at school or in the community; they are often labeled juvenile delinquents. Male scapegoats may be violent, whereas female scapegoats may express themselves by running away or engaging in promiscuous sexual activity. Scapegoats of both genders most often abuse alcohol and drugs themselves.
A child in the scapegoat role seems to identify with the chemically dependent parent, not only in terms of substance abuse but in other ways as well (e.g., attitude toward authority, attitude toward the opposite sex, vocational interests). The scapegoat typically feels inferior to the family hero; still, the two of them are usually very close emotionally, despite the differences in their behavior. This special bond may continue throughout adulthood.

This child is referred to as the scapegoat because he or she is the object of the chemically dependent parent’s misdirected frustration and rage. The child may be abused both emotionally and physically by this parent. This is especially true when the chemically dependent parent is the father and the scapegoat his son. In effect, the scapegoat becomes, in common parlance, “his father’s son.” Although the son may despise his father, the father is his role model and the son adopts his father’s self-destructive and antisocial tendencies.

The scapegoat expresses the family’s frustration and anger. The child in this role maintains family balance by directing some of the blame from the chemically dependent parent to him- or herself. This allows the chemically dependent parent to blame someone else for his or her own drinking and drug use. It also shields the chemically dependent parent from some of the blame and resentment that would have been directed at him or her; this process of diversion allows the addiction to progress further (Deutsch, 1982).

THE LOST CHILD

Even in functional families, the middle children are thought to get less attention than their siblings, and they seem less certain of their contribution to the family. This tendency is exacerbated in chemically dependent families (Deutsch, 1982). The lost child may be a middle child but may also be the youngest. The chief characteristic of the lost child is seeking to avoid conflict at all costs. These children maintain balance in the family by simply disappearing; that is, by not requiring any attention. In essence, the youngster in this role supports the family equilibrium by causing no new problems and requiring minimal attention. Such children tend to feel powerless and are described as very quiet, emotionally disturbed, depressed, isolated, withdrawn, and so on. These children tend to be forgotten, as they are very shy. Indeed, this role is often referred to as the forgotten child (Wegscheider-Cruse, 1989). They are followers, not leaders. They engage in much fantasy. If they stand out in school in any way, it is by virtue of poor attendance (Deutsch, 1982). If asked to do something they fear doing, they may pretend not to have heard the instructions or claim not to understand them (Deutsch, 1982). These behaviors point to a great deal of insecurity.
According to Deutsch (1982), the lost child is probably the most difficult child in a dysfunctional family to help. This child has never felt close to either parent and has been deprived of healthy adult role models (Wegscheider-Cruse, 1989). He or she may not have close friends or other supports outside the family. Also, the child’s behavior is usually not disruptive in school; hence, teachers and counselors do not identify this child as needy.

As adults, lost children exhibit a variety of mental health problems. They may complain of anxiety and/or depression and seek counseling. They have difficulty with developmental transitions because they fear taking risks. Thus, they may put off making decisions about careers or where to live. They may also back out of intimate relationships once someone starts to get too close. According to Deutsch (1982), lost children may or may not abuse alcohol and drugs. If they do, their drug of choice is usually different from the substance used by their chemically dependent parents.

THE MASCOT

The last commonly described role is that of the *mascot*. This role is also referred to as the *family clown*. The youngest child in the family often adopts the role of the mascot, arriving in the family after circumstances have deteriorated considerably (Wegscheider-Cruse, 1989). Everyone in the family likes the mascot and is comfortable with having him or her around. The family usually views the mascot as the most fragile and vulnerable; thus, he or she tends to be the object of protection. Deutsch (1982) notes that even the chemically dependent parent treats the mascot with kindness most of the time.

Mascots often act silly and make jokes, even at their own expense. The clownish behavior acts as a defense against feelings of anxiety and inadequacy. They often have a dire need for approval from others. As adults, they are very likable but appear anxious. Deutsch (1982) believes that they may use alcohol and/or tranquilizers to lessen their anxiety.

The child in the mascot role helps maintain family homeostasis by bringing laughter and fun into the home. By “clowning around” and making jokes, the mascot brightens the family atmosphere, becoming a counterbalance against the tension that is so prevalent and oppressive in dysfunctional families. The mascot may be the one family member about whom no one has a complaint.

*Family Systems Models*

Unlike the disease models, the family systems models in addictions treatment originated from family systems theory. Whereas the disease models developed in addictions treatment, the family systems models developed in
mental health treatment, specifically couple and family therapy. Although similarities exist between the two, such as family members operating according to certain roles, they differ with respect to the prominence of paradigms, differences attributed to their separate origins. For the disease models, addiction is the starting point; what is primary is the concept of addiction as a disease—a disease that happens to be relational in nature or a disease shared by all family members, but a disease or a chronic condition first and foremost. By contrast, the family systems models start with the structure, network, assemblage, or unit of the family—it is these interconnections and relationships that are primary; addiction is somewhat secondary and it is not necessarily a disease or a chronic condition.

There are quite a few family therapy models. Kaslow et al. (2011) review several. Among these are psychodynamically informed and intergenerational-contextual family models that emphasize past rather present interactions and intrapsychic more so than interpersonal dimensions. The Bowen family model, named after the work of Murray Bowen, also considers multigenerational patterns, but its primary construct is differentiation of the self (Bowen, 1976). People who are differentiated are able to distinguish emotional states from intellectual processes, within themselves and from their experience of family members. People whose emotional functioning and intellectual functioning are relatively well separated are more autonomous, more flexible, and better able to cope with stress; they demonstrate more independence of emotions. In essence, they possess a high level of emotional maturity. The opposite of differentiation is fusion. Fusion is the state of nondifferentiation; that is, no differentiation exists between the emotional and the intellectual self. Emotion, at this extreme, completely dominates the self. Persons who are fused are extremely dominated by automatic emotional reactions. Their relationships with other family members, namely a spouse, are characterized as emotional stuck-togetherness (Gurman, 2011), similar to the concept of codependency.

Experiential and humanistic family models define dysfunctional systems as those that have prevented members from fulfilling their personal growth. This applies to the well-being of parents as well as children. An only child’s longstanding alcohol and drug addiction, for example, can delay or interrupt his parents’ retirement because of the emotional and financial support they have invested in him for more than 40 years. Important in these models is direct, open, and immediate communication among family members in an atmosphere of healthy spontaneity and respect for the contributions of each member. Strategic and structural family models are two separate models, but both focus on communication patterns and strategies used among members. The strategic family model considers the metacommunication strategies, symbolic communication patterns, or rituals used among members, and how these covert, nonverbal messages (e.g., shoulder shrugs, isolating behavior) exaggerate or change the meaning of
verbal communication. In the structural family model, the focus is on the organizational structure of relationships and the source, function, and manifestation of power in the family unit. Concepts such as boundaries, hierarchy, alignment (e.g., who spends time with whom), and coalitions are integral to this model.

All family systems models operate according to the four principles described at the beginning of this chapter: (1) wholeness, (2) anamorphosis, (3) homeostasis, and (4) circular causality. When addiction is present, it serves a specific role (or has several roles) and influences the entire system. For example, substance use may serve as a lubricant, keeping the family unit assembled, operating, and relatively stable over years or even over generations.

**Boundaries**

Across all of the family systems models, not just the structural family model, there is a focus on the organization of the family system. This organization is consistent with the systems principle of wholeness. Several concepts typically are used to describe the nature of the organization. One such concept is that of boundaries, which are invisible lines that define and separate one subsystem from another. Although certain demographic variables can determine boundaries (e.g., age, sex), from a family systems perspective, boundaries often are established and maintained through behavioral interactions and other forms of communication. In this way they can be thought of as rules of engagement and methods of functioning. This is true in most cultures.

Like visible walls and fences, boundaries can be clearly delineated, highly restrictive or impenetrable, and therefore rigid. The spoken or unspoken messages sent to family members operating within these boundaries include “Do not enter,” “Stay away,” and “Leave me (or us) alone.” Similar messages can be conveyed to persons outside the family. The purpose of these rigid boundaries is to prevent change and to maintain the status quo. In families where addiction is present, rigidity is evident in specific commands that govern family functioning. These include the rules that Black (1982) first identified: “Don’t talk, don’t feel, and don’t trust.” Three related, although slightly different, rules that Lawson and Lawson (1998) observed are (1) “Do not talk about the alcoholism,” (2) “Do not confront drinking behavior,” and (3) “Protect and shelter the alcoholic so that things don’t become worse” (p. 58).

The result of such messages and rules is isolation and separation—among family members as well as within the entire family unit and with people outside the family. Another result is stagnation. Unfortunately, rigid boundaries enable an alcoholic or addict to keep drinking or using drugs and inadvertently contribute to the progression of addictive behavior. A
vicious cycle develops in which the isolation imposed by the three rules perpetuates the alcohol or drug abuse, and, in turn, the substance abuse maintains the need for isolation. This is an example of the principle of circular causality.

Far different from rigid boundaries are vague and permissive boundaries. These are known as diffuse boundaries. Relationships that operate according to these boundaries are characterized by overinvolvement. Differentiation of self from others is minimized. There is no room for separateness or individual uniqueness; an overemphasis is placed on sameness and unity (Lawson & Lawson, 1998). Families with very diffuse or enmeshed boundaries do not allow adolescents to pull away from the family. They discourage the development of exceptional or unique talents. Some adolescents may rebel against this “smothering” by abusing alcohol or drugs. When spousal relationships are characterized by overinvolvement, the individuality of each partner is “sacrificed” for the “sake of the marriage” (Lawson & Lawson, 1998, p. 58).

Boundaries have been described on a continuum from very diffuse to very rigid; in the middle of this continuum lie clear boundaries. Within most family systems, boundaries lie at some point in the middle, although they may be closer to one extreme or the other. Optimally functioning family relationships are characterized by clear boundaries that support autonomy and yet promote intimacy; the members show genuine love and concern for one another without attempting to control or coerce one another. These relationships evince mutual respect; freedom and flexibility are evident, and communication patterns are clear and direct.

When one spouse is an alcoholic or addict, the spousal relationship may be disengaged at a fixed distance. That is, the partners may remain together, but they lead relatively separate lives. The alcoholic or addict may work and spend much time with drinking or drug-using affiliates rather than at home. The nondependent spouse may carry the full parenting load and pursue other interests without the chemically dependent spouse. Children of these disengaged families typically feel rejected and unloved. They may develop emotional problems or “act out.” Either way, their maladaptive behavior represents a plea for help.

Subsystems and Hierarchies

Subsystems and hierarchies also contribute to the organization of the family system. There are several subsystems within the family. The original subsystem is the spousal one, including domestic and same-sex partners. Within this subsystem, certain privileges, communication patterns, and behaviors are appropriate (financial decisions, career decisions, sexual relations, etc.). When children are brought into this subsystem through adoption, birth, or marriage (e.g., stepchildren), a new subsystem is created (the
Within this subsystem, decisions about how to raise the children are made. This power rests with the parents; thus, a hierarchy appears in which parents have more power than the children. In chemically dependent families where the alcoholic or addict is a parent, the nondependent spouse typically assumes most of the parental power. The addicted spouse gives up or turns over power as a parent. This shift in role obligations places a heavy burden on the nondependent spouse and usually creates feelings of resentment. Sometimes a grandparent or older sibling may assume some parental power (as demonstrated by cooking meals, shopping, doing laundry, etc.); in this way, subsystem boundaries may become blurred.

A sibling subsystem also evolves. According to Lawson and Lawson (1998), its complexity depends on the number of children, their age differences, their gender, their common interests, and their familial relationship to one another (e.g., step-, half-, or adoptive sibling). Kendler et al. (2012) studied over 18,000 adopted children born between 1950 and 1993, and over 51,000 adoptive parents and siblings. They found that the risk for drug abuse in adopted children was more strongly predicted by drug abuse in the adoptive siblings than in the adoptive parents. They concluded that “social influences (e.g., peer deviance and drug availability) shared with adoptive siblings are more potent environmental risks for [drug abuse] than direct psychological transmission of [drug abuse] from parent to child” (p. 695).

Sibling subsystems may distinguish the sons from the daughters, the oldest from the youngest, or the athletic from the nonathletic. In functional families, these subsystems remain somewhat fluid and dynamic as time passes and the children mature. In dysfunctional families, the subsystems may remain static as the children are required to assume inappropriate roles, such as that of a parent. Forcing a child into the spousal subsystem (e.g., incest) is another example in which subsystems are likely to remain static (Lawson & Lawson, 1998).

**Family Rules**

Another characteristic of family organization pertains to the rules that govern interactions between and among members. Several of these rules were mentioned in the previous section. Often these rules are implicit rather than explicit; however, most or all members somehow seem to know them. They define appropriate conduct within the family system and function to provide order, stability, consistency, and predictability in family affairs. They also serve to restrict behavioral options (e.g., “incest is unacceptable”). Families usually have rules governing the manner in which different emotions are expressed. In some families anger is not allowed, whereas in others shouting is permissible. In some families affection is demonstrated with hugs and kisses, whereas in others physical contact is minimized.
Barnard (1981) has noted six areas in which families usually formulate rules:

1. To what extent, when, and how family members may comment on what they see, feel, and think.
2. Who can speak to whom and about what.
3. How a member can be different.
4. How sexuality can be expressed.
5. What it means to be male or female.
6. How a person can acquire self-worth, and how much self-worth is appropriate to possess.

In chemically dependent families, certain family rules are typical. For example, it is usually prohibited to talk openly about the substance abuse, to reveal family secrets and break confidences and loyalties. Two rules often found in alcoholic families are that (1) anger can only be expressed when the alcoholic is drinking and (2) affection and intimacy can only be expressed when one or both partners has been drinking (Lawson & Lawson, 1998).

**Behavioral Models**

Behavioral models of family substance abuse treatment are primarily based on the principles of operant conditioning discussed in Chapter 6. These include the principles of positive and negative reinforcement, as well as punishment. It is worth repeating that these are principles of learned behavior, not simply principles of learning, and consistent with operant conditioning, they describe volitional or proactive behavior. This means that the behaviors of family members serve a purpose, whether they are aware of it or not; there is a payoff to the family system, not just to an individual. The payoff to the family unit may be homeostasis or balance, keeping all the parts of the family “machinery” intact and working in sync. This payoff may be preferred to any type of family disruption, such as divorce, separation, or other forms of estrangement (e.g., shunning, disowning). As discussed earlier in this chapter, for families in which addiction is present, disruption also may include the initiation of abstinence and the beginning of recovery for one of its members, because the system had accustomed itself to that family member’s substance abuse over a considerable period of time. In this instance, sobriety would not reinforce family cohesion.

The focus of behavioral models is the observed behaviors of family members, including nonverbal and verbal forms of communication. Although social learning or social-cognitive models (e.g., expectancies, self-efficacy) and other cognitive models (e.g., rational–emotive) apply, it is the effect of these belief systems on family behaviors that is of interest. It
is the influence of family rules on family roles, for example, or the effect of shared values on family traditions, that is of concern. Think of observed, concrete, and measurable behaviors as the visible “evidence” of rules, values, and other beliefs and cognitive processes. The behaviors are the verification of beliefs. Behavioral models thus give primacy to what can be seen and heard, not simply what is implied. Take, for instance, the words resistant and manipulative, words often used to describe interpersonal behaviors. From a behavioral perspective, however, these are not behaviors because they do not describe specific observable, measurable, or verifiable activities; instead, they describe the intent of another person (e.g., to influence or control another person) and, for that matter, an intent that is assumed by someone else and that may lack empirical justification. In these two examples the demonstrable behaviors might be disagreement with a recommendation (“No, I’m not going to do that”), not completing a particular task, or repeating a specific behavior (e.g., drinking in the garage) because it has been negatively reinforced (e.g., “calms me down and gives me peace and quiet after another stupid argument in the house with my girlfriend”).

The focus on observed and measurable behaviors is what explains the empirical or scientific strength of behavioral models. Of the attributes of a good theory described in Chapter 1, it is the attribute of empirical support that makes behavioral models a good theory. Compared to the disease models and the family systems models, behavioral models are the most recent and only in the past 10–15 years have they received increased attention since their introduction in the early 1970s. Dattilio (2001, 2010) provides three explanations for their slow start. First, the behavioral approach has been perceived by some practitioners as too rigid and rigorous in its implementation to capture the nuances of family interaction. The focus on observable behaviors more so than feelings, for example, might be considered stringent and limiting by some. Highly specified intervention plans, such as those involving parents monitoring the daily activities of their adolescent and then following a strict system of reward and punishment, might also be considered too “sterile” or “laboratory-like” for many practitioners. Second, the popularity of family systems approaches (e.g., strategic, structural) has overshadowed the more empirically tested behavioral approaches. Research data can be less compelling than the charismatic style of family systems therapists such as Murray Bowen. Third, the traditional view that behavioral approaches are linear in perspective is thought to be contrary to systemic constructs, such as circular causality. This is one myth that Dattilio (2001) dispels. He acknowledges, however, that the strength of behavioral approaches is their ability to address specific behavior problems rather than to explain the comprehensive system of family dynamics. Behavior problems targeted include inadequate stress reduction skills, poor
communication, and emotion dysregulation. Some of the first behavioral interventions applied to families were for the problem behaviors of bedtime tantrums and bedwetting among young children (Falloon, 2003).

**Reinforcing and Protective Family Behaviors**

When behavioral models are applied to the family system, and a system in which at least one member abuses substances, the behaviors of family members are the antecedents to substance use and they also reinforce its consequences (McCrady et al., 2012). The consequences can be either negatively or positively reinforcing, meaning that the behaviors of family members can either increase or decrease the likelihood of a family member’s future substance use. For example, the behavior of a non-substance-abusing partner (often referred to as the concerned significant other, or CSO) can inadvertently reinforce ongoing substance use in his or her partner (Fals-Stewart, Lam, & Kelley, 2009). These behaviors include avoiding conflict with the substance-abusing partner when he or she is intoxicated, or assuming the role of caretaker during or after drinking or drug use episodes.

Reinforcing behaviors, however, are not limited to the CSO and other non-substance-abusing family members. The reverse is also true. The substance-abusing family member’s behaviors can reinforce the behaviors of other family members. As McCrady et al. (2012) note, behavioral models conceptualize couple and family relationships in terms of the balance and the exchange of reinforcers in the relationships. Reinforcing behaviors are thus reciprocal in family relationships, consistent with family systems principles. The substance-abusing partner’s behavior may reinforce caretaking behaviors in the CSO, for example. An adult child’s substance misuse also may reinforce continued caretaking behavior in parents, such as paying off their child’s jail and court fines and assuming responsibility for raising their grandchildren. Templeton (2012) conducted a qualitative study of 21 grandparents raising their grandchildren because of parental substance abuse. She reports that several grandparents believed their increased involvement in their grandchildren’s care had actually worsened the substance abuse of their adult child, the parent of their grandchildren. This is another example of reciprocal and positive reinforcing behaviors in families.

The reciprocity of reinforcing behaviors in a family unit may explain several of the findings in the study conducted by Hussaarts et al. (2011) of 32 family dyads. Each pair comprised a patient in substance abuse treatment and his or her non-substance-abusing family member, a first-degree relative, spouse, intimate partner, or someone living with the substance abuser who was described as the CSO. One major finding of this study was that CSOs reported distress and dissatisfaction with their quality of life, and, compared to their substance-abusing partner, they were discontent with
their intimate relationship. The second major finding was that substance-abusing partners reported satisfaction with two areas of their spousal relationship—engaging in joint pleasant activities and affection—and these were positively correlated with their years of substance use. This latter finding goes against extensive anecdotal and empirical evidence that continued substance abuse and its increasing severity are associated with increased problems in many life areas. Certain reinforcing behaviors of family members therefore can shield the substance abuser from adverse consequences of the substance abuse and, as a result, make it possible for him or her to enjoy and be satisfied with life. This is one example of family system homeostasis at the expense of non-substance-using family members.

Specific family behaviors can serve to protect against problematic substance use. For example, maintaining family rituals, such as eating together at set times and attending religious activities together, is associated with reduced substance use (Fife, McCreary, Brewer, & Adegoke, 2011). This is true across cultural groups, including Asian American families with early-adolescent girls (Fang, Barnes-Ceeney, & Schinke, 2011) and rural African American adolescents (Nasim, Fernander, Townsend, Corona, & Belgrave, 2011). Other family practices include parental monitoring of child and adolescent behaviors. Some have suggested, however, that parental monitoring may not be the best indicator of caregiving quality for culturally diverse families. For disadvantaged Hispanic/Latino immigrant parents, for example, Bacio, Mays, and Lau (2013) explain that their “often-taxing work demands . . . may interfere with their ability to be present in their homes to closely supervise the activities of their offspring” (p. 19). However, the perception among both European American and Mexican American adolescents of strong parental control (i.e., their parents set rules and monitor their behavior) has been identified as a key protective factor in reducing the probability of alcohol and other drug use problems (Kopak, Chen, Haas, & Gillmore, 2012).

Functional Analysis and Family Coping Responses

Dattilio (2010) maintains that family systems models have focused almost exclusively on intrafamilial dynamics, viewing extrafamilial influences (e.g., stressors outside the family unit) as almost irrelevant. This focus also may characterize family disease models. Behavioral models, by comparison, offer a more contextualized approach to family functioning, examining dynamics occurring beyond or outside the boundaries of the family system (e.g., school behavior, natural disasters, neighborhood crime). The family system is therefore regarded as an open system rather than a closed system in the behavioral models.

Identifying all influential intrafamilial and extrafamilial dynamics for a particular family unit is the primary task of behavioral family therapists.
This is known as conducting a *functional analysis* or a *behavioral analysis*. Its goal is to determine all of the systems operating on each spouse or family member that contribute to presenting problems (Dattilio, 2010). This approach includes determining the probability or the likelihood of behavioral patterns under certain conditions, and it begins with the basic question “What happens when . . . ?” (Drossel, Rummel, & Fisher, 2009, p. 16). In the case of substance abuse, the goal is to understand how all systems affecting family behaviors contribute to and maintain the addictive behavior of a family member.

For example, what is the function of a single mother’s intermittent employment and the three part-time jobs she now holds on her 15-year-old son’s truant behavior and recent drug trafficking charges? What happens when she is not home and is not able to share in mealtimes with her children? What happens when school officials or the probation department contact the mother? Furthermore, how does their subsidized housing environment, repeated school levy failures, lack of funding for a community sports league, and recent factory closings in the area function to reinforce his problematic behavior? What function does this teenager’s behavior serve for his two younger siblings and their maternal grandmother? How is the family system responding to these intra- and extrafamilial dynamics and for what purpose? What is the probability of family behavior patterns continuing or being altered now that school officials and a probation officer are involved in the family system? The purpose of these and other questions asked during a functional analysis is to target potential interventions for the family (Falloon, 2003).

The first step in a functional analysis is to identify “patterns within the reciprocal relationship of behavior and context” (Drossel et al., 2009, p. 16). For a family unit, *context* broadly refers to the family’s history and current circumstances, including cultural conditions and the involvement of people external to the family unit (e.g., employer, drug and alcohol counselor, school counselor). According to Falloon (2003), patterns of family behavior observed at any point in time represent the optimal response or the best attempt of each family member to resolve an existing problem. He writes: “Even when chaotic, distressing responses are observed, every family member is attempting to resolve the problem (or achieve the goal) in the manner he or she considers most rewarding (or least distressing), given all the constraints imposed by the biopsychosocial system at that time” (p. 157).

In a family system where addiction is present, these responses or behaviors are referred to as *coping responses*. From their interviews with 29 persons with one or more family members with an addiction, Moriarty, Stubbe, Bradford, Tapper, and Lim (2011) identified four coping strategies: (1) minimizing or normalizing the addiction, viewing heavy drinking as acceptable; (2) making allowances by continuing with their daily tasks; (3)
turning away from the substance abuser by emotional distancing or physical relocation; and (4) carrying on with their own lives as if prior experiences had been forgotten and attempting to demonstrate their resilience or ability to overcome the negative influences of their family member’s addiction. McCrady (2006) describes three general coping responses to addiction that family members assume, regardless of their age, sex, and other cultural variables (e.g., race, ethnicity): (1) tolerant coping that accepts the substance use, (2) engaged coping that attempts to change the behavior of the substance abuser, and (3) withdrawal coping wherein the non-substance-abusing family member withdraws from the substance abuser and spends considerable time in separate activities and with other people (p. 171). Think of each of these coping responses as a family member’s best effort at any given time to resolve the problem of addiction in the family.

Case Example

The following fictional case of the “O’Connor” family illustrates several reciprocal, reinforcing, and coping behaviors. We invite you to read through the case and conduct your own functional analysis, noting such factors as extrafamilial and intrafamilial dynamics and the function or purpose of the behaviors of the four family members. We offer our own functional analysis at the end of the chapter (pp. 223–225).

Early in their 35-year marriage, Marge believed that Hank’s regular and often heavy drinking was in response to her emotional instability and “clingy-ness.” She never complained about his drinking and did what she could to keep the house in order. Once their children were in school and Marge learned that Hank’s job at the university would allow her to go to school for free, she enrolled in a bachelor’s degree program. Going to classes helped Marge gain new independence, and once she earned her degree, she got a full-time job for the first time. She now leaves the house every weekday at 7:30 A.M. and doesn’t return until 6:00 P.M. Hank wasn’t thrilled at first with Marge working full-time because she was no longer thorough in housecleaning or meal preparation, but he did like the extra income. Now that he’s retired from the university, he thinks Marge should retire, too, because he doesn’t like being home most of the time by himself. Although he is bored, he’s relieved to no longer have anyone telling him what to do during the day.

Pam, their oldest daughter, stops by most days with her young son, Todd, and fixes Hank lunch and does some light cleaning. Hank enjoys playing with Todd and doesn’t drink as much on the days that Pam and Todd stop by. Pam knows that her dad still drinks (she can sometimes smell it on his breath when she and Todd arrive in the late mornings or early afternoons), but she hasn’t said anything to him or to her mother. It’s a relief to Hank that no one has said anything to him about his drinking, something he believes he “deserves” to do now in retirement anytime he
wants. Pam wants Todd to have contact with his grandfather (his paternal grandfather is deceased) and she wants her dad to spend time with Todd, the “only son” she says her dad will “ever have.” Marge loves her job (she’s been working full-time for 10 years now) and has established a strong support system among her coworkers. Since Hank’s retirement, she has been spending more time away from home on weekends with friends. She is grateful that Pam helps out at home during the week and that Pam provides her dad with company so that Hank isn’t as “grumpy” and “critical” when she returns home during the week.

**Family-Based Approaches to Substance Abuse Treatment**

Involving family members in prevention and treatment efforts of an adolescent or adult who is struggling with problematic substance use is now standard practice in the addictions field (O’Farrell & Fals-Stewart, 2008). In their meta-analysis of 15 studies investigating the effects of drug abuse treatment programs for adults and adolescents, Stanton and Shadish (1997) found that family-based approaches demonstrated more favorable results (i.e., reduced drug use) when compared to individual counseling or therapy, peer group therapy, or family psychoeducation.

Most family-based approaches reflect a combination of two or all three of the family models described in the previous sections. There are commonalities across the family models with respect to family member roles and rules, as well as their terminology. Similar interventions also are used, such as training in coping skills, communication skills, and parenting skills, and spending time together in non-substance-abusing activities.

The majority of family-based approaches have addressed either solely or primarily problematic alcohol use within a family unit. However, a considerable number of approaches targeting drug abuse (beyond and including alcohol) have been developed over the past 25 years. These are reviewed by Rowe (2012). Whether alcohol or other drug use is the problematic behavior in a family system, the fourfold purpose of family-based interventions is generally to (1) engage the partner or other family members in a plan for systemic change, (2) clarify and reinforce family roles and responsibilities (e.g., parental discipline), (3) achieve and maintain abstinence, and (4) improve relational dynamics and satisfaction.

It is worth mentioning that not all persons are amenable to, or will benefit from, family-based approaches. In a study of 158 women with an alcohol use disorder (Hunter-Reel, McCrady, Hildebrandt, & Epstein, 2010), individual cognitive-behavioral therapy (CBT) rather than couple CBT was associated with greater motivation to change drinking at 3 months posttreatment. More women also chose the individual format at treatment
entry. McCrady (2006) explains, however, that successful family-involved treatment is more likely when the family has at least some members who do not have alcohol or drug problems themselves, the individual client is experiencing more severe alcohol or drug problems, there is a certain level of stability in social functioning (e.g., employment) and relational commitment (e.g., no threats of divorce or abandonment), and counseling has been initiated following a crisis (e.g., arrest for drug-related offense), especially when the stability of the family unit has been threatened. For indigenous populations (e.g., Native American/Alaska Native), it has been recommended that treatment not automatically exclude family members who are themselves problem drinkers (Calabria, Clifford, Shakeshaft, & Doran, 2012). Their exclusion may not be practical because alcohol problems often cluster in racial minority groups. Couple or family counseling clearly is not appropriate when there has been significant domestic violence that has resulted in injury or the need for medical assistance.

In the following sections we review six evidence-based practices for working with couples and families in which problematic alcohol or drug use is present. The first two approaches are reviewed more extensively and separately; the remaining four are reviewed as a group because they all address adolescent substance abuse and related behavioral problems. Of the first two, one is a comprehensive approach designed for families in which there is an adult or adolescent with a substance use problem; the other is intended for adult couples only. All six approaches—to varying degrees—have considerable research support and are informed by one or more of the three family models of addiction presented in this chapter.

**Community Reinforcement and Family Training**

Community reinforcement and family training (CRAFT; Smith & Meyers, 2004) is an evidence-based practice for family members (first-degree relative or intimate partner) or friends of individuals with substance use problems who refuse to get help from peers (e.g., AA) or from professionals. It is an adaptation and an extension of the community reinforcement approach (CRA) described in Chapter 6. CRAFT was developed from research on the CRA that identified family members, or concerned significant others (CSOs), as influential reinforcers of their family member’s behavior (Meyers, Villanueva, & Smith, 2005; Miller, Meyers, & Tonigan, 1999). It was thus proposed that prevention and treatment methods target CSOs rather than intervene directly with the family member with the substance use problem. This is a form of unilateral family therapy because it is designed to work with family members other than the one with the identified problem, such as substance abuse (Smith, Meyers, & Austin, 2008).

Roozen, de Waart, and van der Kroft (2010) describe CRAFT as “a rigorous treatment package” (p. 1730). CRAFT practitioners work directly
with CSOs in individual sessions, teaching them behavioral skills to alter their interactions with their loved one, designated in CRAFT as the identified patient (IP). CSOs also are taught self-care practices. Specifically, CRAFT teaches CSOs how to (1) influence the IP to get help, preferably by entering a drug and alcohol treatment program; (2) help the IP reduce his or her substance use; and (3) procure and maintain psychological well-being for themselves, whether or not the IP reduces or abstains from substance use or enters treatment. The eight major components of CRAFT (Smith & Meyers, 2004) are teaching motivational strategies, conducting a functional analysis (i.e., learning the purpose of the IP’s substance use behaviors from the perspective of the CSO), addressing potential for violence in the CSO–IP relationship, providing communication training, providing reinforcement training (e.g., reinforcing non-substance-using behavior, removing a reinforcer for substance use behavior, allowing natural consequences of substance-using behavior to occur), engaging in self-reinforcement training (i.e., self-care practices), and preparing the CSO to encourage his or her loved one to enter treatment.

CRAFT follows operant conditioning principles, and, although CRAFT practitioners do not meet jointly with the CSO and the IP, they endorse family systems principles, such as reciprocal causality. Unlike family disease models, however, CRAFT does not regard CSOs as helpless or powerless to effect change in the IP or in the family system. Rather than recommending that CSOs distance or withdraw themselves from the IP (what is often recommended in Al-Anon), CRAFT is designed to empower CSOs to become actively involved in the process of helping the IP initiate change by entering treatment. The primary outcome measured in CRAFT studies is treatment entry by the family member. A review of CRAFT studies conducted over 25 years indicates that 55–86% of treatment-refusing family members enter treatment as a result of their CSO participating in CRAFT (Manuel et al., 2012).

Teaching CSOs to encourage their loved one to enter treatment does not mean that the CSO uses confrontational skills consistent with the Johnson model of intervention (Johnson, 1986) and depicted on the reality television show, Intervention. From their review of the first six seasons of this popular television show, Kosovski and Smith (2011, p. 853) conclude that Intervention conveys “contradictory and misleading messages” about addiction and family functioning and “grossly exaggerates and misrepresents both treatment approaches and outcomes.” They propose (p. 857) that the “exaggerated narratives” featured on the show “have the potential to do harm” by (1) fostering a false sense of optimism about the success of family-based interventions and the availability of desired treatments, (2) creating backlash from viewers and reduced public support for treatment and research because of the overly narrow definition of addiction portrayed, and (3) influencing viewers with addictions to not get treatment.
because their experiences of addiction may not be consistent with the experiences of addiction among family members on the show. Unlike the confrontational methods shown on *Intervention*, CRAFT uses a motivational style (Smith et al., 2008) and teaches CSOs to engage in positive communication skills with their loved one, such as avoiding blaming and name calling, and stating what is wanted rather than what is not wanted. These are practiced routinely in CRAFT sessions through role plays. The seven CRAFT guidelines for positive communication are listed in Table 8.1.

From their review of four trials of CRAFT, Roozen et al. (2010) found that CRAFT was 3 times more effective than Al-Anon and 2 times more effective than the Johnson model of intervention in getting the IP to enter treatment (i.e., completing at least one treatment session after assessment). CSOs also demonstrated improvement (e.g., lower levels of depression and anger, higher levels of relationship happiness), but this was equally true for CRAFT and Al-Anon; there was limited evidence for CSO improvement in the Johnson model. In one of the early studies of CRAFT (Miller et al., 1999), CSO self-improvement occurred whether or not their loved ones entered treatment. This also was reported in a study of parent CSOs who attended an average of 10 CRAFT sessions to encourage their adolescent to enter treatment (71% of whom did enter treatment; Waldron,

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**TABLE 8.1. CRAFT Guidelines for Positive Communication Skills**

1. Be brief. Avoid lengthy communications with your loved one because they are a “turn-off” and often include irrelevant and emotionally charged information that diverts attention away from the main point.

2. Be positive. Avoid blaming, name calling, and overgeneralizations. Use language that indicates what is wanted rather than what is not wanted (e.g., behavior that needs to stop).

3. Refer to specific behaviors. Do not make vague requests. Rather, describe specific and observable behaviors (not thoughts or feelings) that are desired.

4. Label your feelings. Describe your own feelings in a calm, nonjudgmental, and nonaccusatory manner.

5. Offer an understanding statement. Verbalize understanding and empathy, even though it may be very difficult to do so.

6. Accept partial responsibility (for the non-substance-using behavior being addressed). Identify a small piece of the problem situation for which you can accept some responsibility. This reinforces your role in the relationship and conveys your willingness to consider change of your own. [It is very important to note that although CSOs are instrumental in creating positive changes with and for their loved one, they are not held accountable for their loved one’s substance use or other negative behaviors.]

7. Offer to help. Ask generally, “How can I help?” in a manner that is genuine and supportive.

*Note.* Adapted from Smith and Meyers (2004). Copyright 2004 by The Guilford Press. Adapted by permission.
Kern-Jones, Turner, Peterson, & Ozechowski, 2007). And although CSOs did not report self-improvement in a more recent study of CRAFT (Manuel et al., 2012), they did report significantly improved family functioning at both 3- and 6-month follow-up. In this same study, CRAFT was delivered in a group format (12 weekly sessions with four CSOs per group) and a self-directed format (CSOs received a self-help book only). IP treatment entry rates (within a 6-month window) were 40% for the self-directed format and 60% for the group format, the latter format demonstrating comparable rates to those of individually delivered CRAFT in previous studies. Furthermore, 71% of CSOs who attended only one group session were able to encourage their loved one to enter treatment. These findings of Manuel et al.’s study suggest that effective CRAFT delivery can be flexible and cost-effective.

**Behavioral Couple Therapy**

Behavioral couple therapy (BCT; O’Farrell & Fals-Stewart, 2006) is another evidence-based practice designed to help married or cohabitating substance abusers and their partners. The intervention approach seeks to strengthen relationship stability and support abstinence from drinking and drug use. The BCT strategy is based on two assumptions: (1) the substance abuser’s partner can reward abstinence and (2) the likelihood of substance use and relapse are reduced when relational distress is low. The three primary objectives of BCT are to (1) eliminate abusive drinking and drug abuse; (2) engage the family’s support for the client’s efforts to change; and (3) change couple and family interaction patterns in ways that are conducive to long-term, stable abstinence and a happier and more stable relationship. BCT consists of 12–20 weekly couple sessions. In most cases, the substance abuser is also involved in a 12-step program and possibly individual therapy.

The BCT clinician’s first aim is to engage the non-substance-abusing partner in the process of helping the substance abuser. This is done after the therapist obtains the substance-abusing client’s permission to contact the partner, so that he or she can be invited to a conjoint interview. In the initial conjoint session, the couple is asked to make a commitment to therapy and to not threaten separation while in the treatment program (Ruff, McComb, Coker, & Sprenkle, 2010).

Once both partners have committed to the treatment program, daily sobriety contracts are presented and reviewed by the clinician with the couple. The contracts require the couple to commit to maintain daily sobriety, participate in a 12-step program, and hold trust discussions that facilitate the substance-abusing partner’s expression of commitment to abstinence and the partner’s offer of emotional support. In addition, BCT clinicians teach effective listening skills and conflict resolution strategies and provide
guidance on how to solve problems together. Furthermore, homework exercises are assigned to couples. For example, one commonly used assignment encourages partners to initiate affectionate interactions. BCT often relies on disulfiram (Antabuse) medication to bolster daily sobriety. The act of swallowing a disulfiram tablet in the presence of one’s partner may be a component of the daily sobriety contract. (Note: Disulfiram produces unpleasant physical effects if taken with alcohol.)

In the continuing recovery stage, the clinician helps the couple create a posttreatment plan that identifies how the partners are going to promote sobriety after their BCT sessions end. The plan is intended to help couples anticipate challenges to maintaining sobriety and avoiding relapse. The plan also provides guidance about actions to take if a relapse occurs. Post-treatment follow-up visits with couples can be scheduled for as many as 5 years (Ruff et al., 2010).

Compared to individual- and couple-based treatments, BCT has consistently produced better outcomes in the area of improved marital relations (Fals-Stewart, Birchler, & Kelley, 2006; Kelley & Fals-Stewart, 2008). Improvements in marital relations following BCT have been observed at 1- and 2-year follow-up assessments (Kelley & Fals-Stewart, 2008; O’Farrell, Choquette, & Cutter, 1998). However, these treatment gains sometimes are not sustained posttreatment (Fals-Stewart, Birchler, & O’Farrell, 1996; Winters et al., 2002). Thus, O’Farrell et al. (1993) added relapse prevention sessions to the BCT intervention. A comparison of the efficacy of BCT-only versus BCT-plus relapse prevention found that the latter combined intervention produced improvements in marital relations for 2 years following treatment. The BCT-only intervention improvements had disappeared at the 2-year follow-up.

In addition to marital relations, BCT has been shown to be effective in reducing drinking problems (Fals-Stewart et al., 2005, 2006) and other drug use (Fals-Stewart et al., 2000, 2001; Kelley & Fals-Stewart, 2007). Furthermore, BCT appears more effective in reducing alcohol and drug use than other individual and couple treatment programs (Fals-Stewart et al., 2005, 2006). Consistent with outcomes in the area of marital relations, alcohol and drug use following completion of BCT are sometimes not sustained over time (O’Farrell et al., 1992, 1998; Winters et al., 2002). Although BCT plus relapse prevention may improve alcohol use outcomes (O’Farrell et al., 1998), it seems that the positive effects of relapse prevention sessions start to wane at 2-year follow-up.

The effectiveness of BCT in reducing intimate partner violence is more equivocal. O’Farrell and Murphy (1995) found that during the 12 months following BCT, there was a reduction in intimate partner violence in couples where alcoholism was present. However, violence remained higher compared to a demographically matched national sample of nonalcoholic married couples. Further inspection determined that the prevalence and
frequency of violence following BCT was associated with alcohol use. A subgroup of male alcoholics who had relapsed after BCT accounted for much of the violence. In couples with drug abuse, Fals-Stewart, Kashdan, O’Farrell, and Birchler (2002) found that BCT reduced intimate partner violence at a 12-month follow-up. Compared to those in individual-based treatment, BCT couples reported a significant reduction in male-to-female physical aggression (43 vs. 18%). In addition, it was discovered that marital relations, frequency of heavy drinking, and frequency of drug use after treatment ended mediated between treatment condition and reductions in intimate partner violence. Subsequent studies have shown that BCT reduces intimate partner violence in couples with a female alcohol abuser and a male partner who is not a substance abuser 1 year after treatment ends (Fals-Stewart et al., 2006).

In the research community, BCT is considered one of the most effective treatments for alcohol and drug addiction (Carroll & Onken, 2005; Morgenstern & McKay, 2007; Rowe, 2012). The BCT approach has produced better outcomes than individual-based treatment (Powers, Vedel, & Emmelkamp, 2008). It also appears to be the treatment of choice for improving relationship functioning in couples with substance abuse (O’Farrell & Clements, 2011).

**Family-Based Approaches for Adolescent Substance Abuse**

The four family-based approaches briefly discussed in this section have the largest research base of any family-based therapy for adolescent substance abuse (Baldwin, Christian, Berkeljon, & Shadish, 2012). They are brief strategic family therapy, functional family therapy, multidimensional family therapy, and multisystemic therapy. From their meta-analysis of 24 studies investigating the effects of one of these four approaches on measures of substance abuse and delinquency, Baldwin et al. reported significant ($p \leq .05$) combined effect sizes of 0.21 when compared to treatment as usual, and 0.26 when compared to an alternative treatment (e.g., individual therapy, parent groups). When any one of these four approaches was compared to a control group, the combined or average effect size was sizable (0.70) but not significant. Based on the results of this meta-analysis, Bean (cited in Baldwin et al., 2012, p. 301) argues “there is no clear evidence to favor one program over another, so there is no wrong choice if an educational program or agency was to select a model for implementation.” We interpret these comments as an endorsement of all four approaches.

**Brief Strategic Family Therapy**

As its name suggests, brief strategic family therapy (BSFT) is a brief intervention (delivered in 8–24 sessions) developed from the two family systems
approaches of structural therapy and strategic therapy (Szapocznik, Hersvis, & Schwartz, 2003). It is intended to treat child and adolescent problem behaviors (including drug and alcohol use) in the context of the family system (Briones, Robbins, & Szapocznik, 2008). It originated from research and practice at the University of Miami Center for Family Studies and has been found to be particularly appropriate for, and effective with, cultural groups that emphasize family and interpersonal relationships, such as Hispanics/Latinos (Santisteban et al., 2003). Waldron and Turner (2008) indicate that BSFT research represented some of the first systematic efforts to establish an empirical basis of support for adolescent substance abuse treatment.

The focus of BSFT is on inappropriate family alliances (e.g., parent–child coalition that challenges another parent, parents “triangulating” a child), excessively rigid or permeable boundaries between family members, and the identification of individual family members (often the adolescent) as the source of familial dysfunction. What is referred to in BFST as the principle of complementarity assumes that for every action by a family member, there is a corresponding reaction from the rest of the family (Szapocznik et al., 2003). This means that a substance-using adolescent will improve his or her behavior when the family learns how to behave adaptively. BSFT sessions often are conducted with as many family members as possible, and sessions are held weekly for 1 hour. Although initially delivered only in an office or clinic setting, BSFT has expanded its delivery settings to the home and school.

Strategies used are categorized as joining, diagnosing, and restructuring (Szapocznik et al., 2003). Joining involves the BSFT practitioner assuming a position of leadership in the family while supporting the existing family power structure. It is as if the BSFT practitioner has been accepted as a “special temporary member” (p. 26) of the family. Joining is critical to family engagement in treatment. Diagnosing strategies identify and track repeated maladaptive interactional patterns. Family problems are diagnosed in such areas as power distribution, boundaries, and conflict resolution. Restructuring involves change-producing strategies intended to help family members develop new and more adaptive relational patterns. These include cognitive reframing, role reversals (e.g., coaching a family member to do or say the opposite of what he or she would customarily do or say), and boundary shifting (e.g., rearranging seating in therapy sessions to either loosen or strengthen certain alliances between family members). Consistent with its brief and strategic philosophy, only interventions determined to be practical, problem-focused, and deliberate are delivered in BSFT.

Compared to a group treatment, BSFT was found to significantly reduce marijuana use among Hispanic youth (Santisteban et al., 2003). This finding was criticized, however, because the differences were small
Drug use reductions were not found in a more recent multisite trial (Robbins et al., 2011) of multiracial/ethnic adolescents who received either BSFT or treatment as usual (TAU). The one significant difference in this study was that TAU adolescents were 2.5 times more likely to fail to engage in treatment and 1.41 times more likely to fail to remain in treatment compared to adolescents who received BSFT.

Functional Family Therapy

Functional family therapy (FFT) is described as “an integrative ecological model that combines a family systems view of family functioning with behavioral techniques and a multi-systemic emphasis” (Waldron & Turner, 2008, p. 240). It was developed more than 30 years ago by Alexander and Parsons (1982) for youth with disruptive externalizing behaviors (“acting-out,” e.g., aggression, oppositional and conduct disorders) involved in the juvenile justice system. It is only in the past 10–15 years, however, that FFT has been recognized as an emerging evidence-based intervention program (Sexton & Turner, 2011). According to Sexton (2011), increased attention given to FFT by practitioners and researchers alike came in response to the 1999 Columbine High School shootings in Colorado. Local, state, and federal agencies at that time committed to investing in prevention and treatment programs with proven results, programs that could be easily replicated in communities. FFT was one of these.

From its start, FFT has focused on engaging adolescents (typically between the ages of 11 and 18) and their families in therapy (Sexton, 2011; Waldron & Turner, 2008). The rates of successful engagement of adolescents in FFT are reported to be between 78 and 89%, considerably higher than engagement rates for other treatments that service youth (Sexton, 2011). Engagement is done in part by having family members focus on how their interactions with one another function to regulate their relationships. The premise is that relationships serve specific functions; that is, relationships generate interpersonal results or payoffs. According to Alexander and Parsons (1982), family members use “the best means they have available to define their relationships in order to meet their functional needs” (p. 25). Three of the primary functions of relationships and their corresponding payoffs are (1) merging (to increase closeness and contact), (2) separating (to increase distance and independence), and (2) midpointing (a combination of merging and separating functions, as in “Listen to me!” and “Go away!”). The task of the FFT practitioner is to help family members recognize that it is their relationships that cause problems, not specific behaviors, feelings, or thoughts. Engagement in treatment takes place when family members are able to “see themselves and each other as recipients rather
than malevolent causes and to recognize that there will be benefits for each of them in the change process” (Alexander & Parsons, 1982, p. 48).

FFT is conducted in clinical and home settings, as well as in correctional and mental health settings. It is considered a short-term approach, with an average of 12 family-based sessions provided over a 3- to 6-month period. The three phases of treatment and their corresponding functions are assessment (deciding what to change), therapy (instituting change), and education (maintaining change).

The majority of studies on FFT thus far have examined its effects on criminal behavior alone, even though the vast majority of adolescents (80–85%) in these studies report substance use. In a recent study, Sexton and Turner (2011) reported significant reductions in felony (35%) and violent crimes (30%) at 12 months posttreatment for youth probationers who participated in 12 family-based and high-adherence FFT sessions conducted in the home over 3–6 months, compared to youth who received customary probation services. In one of the few studies that has investigated FFT for substance use problems (Waldron, Slesnick, Brody, Turner, & Peterson, 2001), youth who participated in FFT with their primary caregiver demonstrated significant reductions in their marijuana use (particularly from heavy to minimal use) from pretreatment to posttreatment (after 4 months) compared to youth who participated in a group alcohol and drug skills training. These reductions, however, were comparable to those of youth who participated in either individual CBT or a combination of FFT and CBT, although at 7-month follow-up (3 months after treatment completion) reductions were greater for youth in the combined FFT and CBT program compared to those in individual CBT only. Further study of FFT’s effects on substance use is warranted.

**Multidimensional Family Therapy**

Multidimensional family therapy (MDFT) is a family-based outpatient treatment for adolescents with drug and behavioral problems. It has since been revised and adapted to numerous settings and for varied concerns. Its most well-known version to date is that used for the Cannabis Youth Project (CYP; Liddle, 2002) sponsored by the Center for Substance Abuse Treatment. For the CYP, services were delivered over 3 months, and the first 2 months comprised intense services of two to three weekly 1- to 2-hour sessions with various combinations of family members (e.g., adolescent seen alone in individual counseling, joint adolescent and parent sessions). In most applications of MDFT, the majority of sessions occur in a clinic setting, but face-to-face and frequent telephone contact with family members and extrafamilial systems (e.g., personnel from school and juvenile justice) in natural settings occurs throughout the week.
The theoretical foundation of MDFT is family and developmental psychology. The model presumes that adolescent substance abuse and delinquent behaviors begin and are maintained by a complex set of interrelated and mutually reinforcing risk factors, such as family management difficulties (Rowe & Liddle, 2008). Treatment must therefore be multidimensional, meaning that it operates according to a number of dimensions, such as maintaining an outcome orientation (e.g., focusing on long-term, intermediate, and short-term goals), addressing parent–adolescent relationship development, and understanding the multiple psychosocial ecologies of teens and their families. The 10 principles of MDFT are presented in Table 8.2.

As a comprehensive program, MDFT has been found to reduce high-severity substance-related behaviors among ethnic minority youth more so than a peer-based CBT group (Henderson, Dakof, Greenbaum, & Liddle, 2010). Results of a 3- to 4-month home-based version of MDFT were superior to a clinic-based adolescent CBT peer group up to 12 months postintake on measures of treatment completion, abstinence from alcohol and drugs, academic performance, and delinquent behavior (Liddle, Rowe, Dakof, Henderson, & Greenbaum, 2009). A version of MDFT that began while youth were in juvenile detention and then followed them to postrelease (4–6 months total) also produced outcomes superior to a clinic- and group-based treatment up to 9 months postintake, particularly for youth with more frequent drug use (Henderson et al., 2010). Subsequent analyses of data generated from these studies (specifically for youth with cannabis use disorders) suggest that, compared to CBT, MDFT is conducive for younger adolescents (13- to 16-year-olds) with conduct disorders (Hendriks, van der Schee, & Blanken, 2012).

### Table 8.2. Ten Principles of Multidimensional Family Therapy

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
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<tbody>
<tr>
<td>1.</td>
<td>Adolescent drug abuse is a multidimensional phenomenon.</td>
</tr>
<tr>
<td>2.</td>
<td>Problem situations provide information and opportunity.</td>
</tr>
<tr>
<td>3.</td>
<td>Change is multidetermined and multifaceted.</td>
</tr>
<tr>
<td>4.</td>
<td>Motivation is malleable.</td>
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<tr>
<td>5.</td>
<td>Working relationships are critical.</td>
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<tr>
<td>6.</td>
<td>Interventions are individualized.</td>
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<tr>
<td>7.</td>
<td>Planning and flexibility are two sides of the same therapeutic coin.</td>
</tr>
<tr>
<td>8.</td>
<td>Treatment is phasic, and continuity is stressed.</td>
</tr>
<tr>
<td>9.</td>
<td>The therapist’s responsibility is emphasized.</td>
</tr>
<tr>
<td>10.</td>
<td>The therapist’s attitude is fundamental to success.</td>
</tr>
</tbody>
</table>

*Note. From Liddle (2002).*
Multisystemic Therapy

Multisystemic therapy (MST; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009) is a comprehensive, intensive, and team-based treatment approach for adolescents and their families. It is based on the social ecology theory of Bronfennbrenner (1979) that views human development and functioning from a number of overlapping and nested systems or ecological environments. Unlike traditional family systems theory, the theory of social ecology considers broader and more numerous systemic influences on the individual and his or her family system, including contexts and persons not in direct contact with family members (e.g., school board members, ancestors of indigenous families, members of city council). This theory has been used to explain substance use behavior among Asian American youth (Hong, Huang, Sabri, & Kim, 2011), with consideration given to, among others, chronological systems or contexts affected by the passage of time (e.g., acculturation). The social ecological theory proposes that human development and behavior can be fully understood only from the perspective of the natural settings in which human development and behavior occurs. This is known as ecological validity. MST practitioners therefore meet and work with clients and their families in their natural environments or real-world settings, such as the home, school, and neighborhood. Services are typically provided over 3–4 months.

MST was developed in the late 1970s for serious juvenile offenders and their families. Today, MST is appropriate for adolescents (typically 12–17 years old) who struggle with both mental health and substance use concerns and, in the process, have become involved in the legal system. According to Henggeler (2011), there are now over 450 MST programs in operation in more than 30 states and in 11 countries. The implicit goal of MST is to restructure the adolescent’s overlapping environments to reduce antisocial (including substance use) behavior. The evidence base of MST (see Henggeler, 2011) includes 19 randomized clinical trials on a number of behavioral outcomes: reductions in criminal behavior (including decreased incarceration or residential placement and reduced drug-related arrests), improved family relations, decreased drug use and increased abstinence, decreased psychiatric hospitalizations, and increased school attendance. MST outcomes specific to alcohol and drug use are reviewed by Sheidow and Henggeler (2008). An adaptation of MST specifically targets problem sexual behavior (see Letourneau et al., 2009), and it has recently been applied to address a range of health concerns such as adolescent diabetes, asthma, obesity, and HIV infection. Of the four family-based approaches for adolescent substance use reviewed in this chapter, MST has the most extensive and perhaps most rigorous evidence base.

The beneficial effects of MST tend to be long-lasting. For example, Sawyer and Borduin (2011) located 176 adults who had received either
MST or individual therapy as adolescents 18–24 years earlier (average of 21.9 years earlier). Compared to adolescents who had participated in individual therapy only, MST graduates were significantly less likely to have been (1) arrested for felony or misdemeanor crimes and (2) involved in family-related civil suits during adulthood. Demographic characteristics (e.g., race, gender, social class) did not moderate these effects, lending further support to MST’s already established effectiveness with a broad range of cultural groups (e.g., African Americans) from varied geographic settings (e.g., rural). Although MST is a multisystem approach, the family is the primary focus of services. Parents and other caregivers are viewed as full collaborators with MST therapists and as crucial change agents for their adolescents. MST therapists work directly with caregivers to equip them with the necessary skills (e.g., discipline, monitoring, empathy, and validation) to help alter their adolescent’s behavior, somewhat similar to the practice of CRAFT. Critical to caregiver empowerment is recognizing and reinforcing family and extrafamilial strengths and resources, such as the adolescent’s interest in sports and desire to finish school, and the caregiver’s commitment to raising and supporting the adolescent. These strengths are considered the key levers for change.

Henggeler (2011) lists the key components of MST that help explain its effectiveness: (1) providing treatment services in the home, at school, and in other community locations; (2) scheduling appointments at the family’s convenience, including evening and weekend hours; (3) offering 24-hour-per-day, 7-day-per-week availability of therapists to address crises that might interfere with the success of treatment; (4) maintaining caseloads of four to six families per therapist on an MST team so that intensive services can be modified to accommodate family needs; and (5) including two to four full-time therapists on each MST team so that there is continuity of treatment (e.g., therapists can rotate an on-call schedule during evening, weekend, and holiday hours). Additional practices integral to MST are continuous tracking of the targeted behavior (e.g., parents administering urine drug screens at home, MST therapists observing parent–adolescent communication at their home, parents evaluating MST therapist behavior) and the sequences of behavior within and between multiple systems that maintain the identified problems (e.g., links between parental practices and school behavior), promoting responsible behavior among family members, and adapting services to fit the cultural context of each family (Henggeler et al., 2009).

**Chapter Summary**

It is imperative that practitioners be familiar with the principles of systems theory and the three family treatment models in the addictions presented in
this chapter. As the primary social unit, the family exerts a powerful influence on an individual's drinking or drug use. The emphasis on reciprocal causality is unique among the theories of addictive behavior. It proposes that substance abuse is functional in a certain sense; that it is a manifestation of other concerns, such as relational conflict; and that it helps the individual to minimize, distract from, or cope with interpersonal problems.

The emerging body of research on family-based approaches for substance abuse that we have reviewed in this chapter is encouraging. The six approaches highlighted at the end of this chapter are only a sample of the range of programs and interventions available. It is wise, however, to entertain caution when interpreting results because many of the research studies that have informed these practices vary in terms of methodological rigor, implementation and treatment delivery protocol (e.g., many family members seen together or in unilateral therapy), and sample size and ethnic/racial diversity. In addition, substance use is often only one of many variables measured. Despite this caution, the integration of systems theory and behavioral practices offers much promise for the prevention and treatment of addictive behaviors for individuals and their families. The sequential development of family models of addiction—and their corresponding interventions—mirrors the evolution of the addictions field. It remains an exciting and hopeful time for practitioners, researchers, and family members alike.

**Review Questions**

1. What are the four principles of systems theory? Specifically, what is meant by *reciprocal causality*?

2. How can substance abuse in a family unit serve to regulate or to stabilize the functioning of family members? What is the name of this principle in systems theory?

3. For a child or adolescent, what are the intrafamilial influences for later addictive behavior? What are some of the extrafamilial influences?

4. Identify five adverse childhood events or experiences. How are these associated with later addictive behavior?

5. Describe the concept of addiction as a family disease. How was this concept helpful to certain family members in the early and mid-1990s? How has it proven less helpful in recent years?

6. What are the criticisms of the concept of *codependency*?

7. Describe the five family roles that are often associated with the family disease model. How might identifying with one of these roles assist a
family member to understand the patterns of interpersonal relationships over a period time in the family’s history?

8. From a family systems model of addiction, describe the types of boundaries that may exist between a couple or among multiple family members. What about addiction may contribute to rigid and diffuse boundaries?

9. How are subsystems in the family unit affected by substance abuse? What alliances or coalitions may explain the initiation and maintenance of substance abuse, as well as its recovery?

10. How is addiction in a family understood from a behavioral model? What behaviors serve to negatively reinforce and to positively reinforce substance use?

11. Construct a timeline that includes the three family models of addiction discussed in this chapter? Which developed first in the United States? Which followed? How does their developmental sequence explain the state of addiction prevention, treatment, and research today?

12. What are the principles and distinguishing characteristics of CRAFT? For whom is it appropriate? How does it differ from the potentially harmful practices featured on the popular television show Intervention?

13. What are the primary objectives of behavioral couple therapy (BCT)?

14. Name the four family-based approaches for adolescent substance abuse reviewed in this chapter. What is unique about each one? How are they similar? Which one would you recommend to someone who has an adolescent family member with a substance use problem? Explain your reasons for this recommendation.

15. Match the six family-based approaches reviewed in the second half of this chapter to one of the three family models of addiction discussed in the first half of this chapter. What principles of each model inform each practice?

O’Connor Family Case Functional Analysis

The O’Connor family case presented on page 208 illustrates several reciprocal, reinforcing, and coping behaviors among the four members mentioned. From a behavioral framework, we offer our own functional analysis of this particular system. Several principles of family systems theory are woven into our analysis, and family roles derived from the family disease models also are included.

Hank has been drinking for what appears to be the entirety of his 35-year marriage to Marge. His drinking seems to have had a stabilizing rather than a destructive influence on the marriage and the family system.
He and Marge remain married and living together and their one daughter, Pam, is a frequent visitor to the house, bringing along her young son, Todd. A certain degree or type of cohesion exists.

Early in their marriage Marge’s behavior seems to have negatively reinforced Hank’s heavy drinking: She didn’t complain about his drinking, and she kept the house clean. These actions removed or at least minimized stressors for him. She also may have assumed primary responsibility for childcare, thereby freeing Hank from engaging in certain tasks he may have found distasteful (e.g., helping children with homework, taking them to doctor’s appointments). From a family disease perspective, Marge fulfilled the role of chief enabler. Reciprocally, Hank’s drinking may have reinforced Marge’s caretaking tendencies, especially prior to the arrival of their children. She may have found her domestic duties rewarding, including those duties that catered specifically to Hank’s needs.

Once the children were no longer at home full-time and Marge was no longer engaged in full-time childcare behaviors, the benefits available as part of Hank’s employment provided the impetus for Marge to work outside the home—first by attending school and then by securing out-of-home employment. The additional family income appears to have been more reinforcing to the family stability (including perhaps Hank’s drinking) than Marge’s absence from the home and the disruption to certain routines (e.g., prepared meals) and conditions (e.g., cleanliness). Now that Marge has been employed for 10 years, a new relational pattern has been established. Her coping style appears to have shifted from tolerant coping to withdrawal coping. There is no evidence that Marge participated in engaged coping at any point in their marriage, whereby she attempted to change Hank’s drinking. This does not mean, however, that she did not try. Her decision to spend more time away from home (as a student and now as an employee) may have been in response to some incident that made her realize she would never be successful in changing Hank. She decided to pursue reinforcements outside of the home and to improve herself whether or not Hank changed his behavior. She is now spending more time away from home than she used to and has established positive and rewarding relationships with persons at work.

It is not clear how long Hank has been retired, but it seems Marge’s absence from home is reinforcing several behaviors even though he says he is “bored.” It may be that Hank’s drinking is a function of his boredom and also an expression of his perceived hierarchical position and decision-making role in the family. He can do what he wants even though he apparently cannot influence Marge to retire as well.

Marge’s absence also reinforces Pam’s behavior. Pam appears to have assumed the role of family heroine, a role she may have assumed early in her life to maintain some order in the family. Her arrival at her parents’ home several days during the week is welcomed by her retired father,
particularly because she does not say anything to him about his drinking. Her silence on the issue is a negative reinforcement for Hank, supplying him with relief from the frustration or even anger that he possibly has experienced from those who have questioned his drinking in the past (perhaps his other children).

Pam is engaged in a tolerant coping with her father’s drinking. The function or payoff of this behavior may be the recognition she receives from her father for providing him “the son” he will “never have.” This male heir in the form of her son Todd is an achievement for someone who remains in the heroine role.

Although Hank does not drink as much on the days he knows Pam and Todd will stop by, it is unclear the function of this behavior. It may be that Todd’s behavior relieves Hank’s boredom in ways that drinking does when Hank is home alone. Todd therefore serves as a substitute and natural reinforcement for Hank, replacing drinking on those days.
This chapter examines the macro-level determinants of addictive behaviors (Boyce & Olster, 2011; Connors & Tarbox, 1985; Westermeyer, 1999). Macro-determinants are social, cultural, and economic factors, including but not limited to introduction of new illicit drugs to the “streets,” changing trends in drug use; the role of government regulation, laws, and tax policy (on cigarettes and alcoholic beverages); attempts by professions to make claims for controlling the problem of substance abuse; drug subcultures and crime; and, in general, the social values, beliefs, and norms that influence drug use. These concepts form the social and cultural foundations of addictive behavior.

**The Influence of Culture on Diagnostic Determinations**

From a sociological perspective, the problems of excessive drinking and drug abuse have become *medicalized* (Moynihan, Doran, & Henry, 2008; Patnode, 2007); that is, because of their vested interests, the medical and mental health communities have redefined the problem as one of *illness* or *disease*. This labeling process functions as a means of social control and has been described as a sophisticated form of propaganda that is advanced by medicine and other helping professions (Gambrill, 2010). Medicalization gives credibility to physicians’ and mental health professionals’ efforts to control, manage, and supervise the care given to persons with substance abuse problems. It makes legitimate such potentially lucrative endeavors as hospital admissions, insurance company billings, expansion of the client pool, consulting fees, and so forth. It also serves to restrict the number and
type of practitioners who are permitted to assist people with these problems. In fact, the acceptance of the term *treatment* in the substance abuse field reflects the dominant influence of medicine and the medical model.

The social process of labeling also functions to restrict alcohol consumption practices in the community. It defines, for the average citizen, appropriate and inappropriate drinking practices. For example, in our culture, conduct norms typically discourage obvious drunkenness, drinking before noon, drinking at work, impaired driving, and binge drinking. It is interesting to note that many of these popular, “man-on-the-street” notions of alcoholism have found their way into widely used “clinical” assessment instruments, such as the Michigan Alcoholism Screening Test (MAST).

A *diagnosis* is the formal label given to problem behaviors by medicine and the mental health professions. To justify this labeling process, the helping professions have created elaborate sets of criteria based mostly on clinical experience. Of course, the most prominent examples in the mental health arena are the various versions of the *Diagnostic and Statistical Manual of Mental Disorders* (see American Psychiatric Association, 2000, 2013). Labeling theorists have described these professional practices as the *medicalization of deviant behavior* (Conrad, 1992; Conrad & Schneider, 1992). From a sociological perspective, it represents a longstanding effort by medicine and mental health community to redefine deviance from *badness* to *sickness*. Thus, the control of deviance shifts from the religious community and the criminal justice system to medicine and the substance abuse treatment system.

More recently, Conrad (2005) has argued that the social forces driving the medicalization process have shifted and are no longer directed primarily by the profession of medicine. Although physicians remain the gatekeepers for medical treatment, their role in expanding medicalization has become subordinate to three other forces: the biotechnology industry based on genetic and pharmaceutical research, consumer demands, and managed care pressures. Conrad argues that the process of medicalization will continue, but the modern engines will be driven by commercial and market interests, particularly those based on new pharmaceutical and genetic treatments.

In the sociological perspective, clinical diagnostic criteria for addiction are derived largely from cultural norms. Thus, those drinking, drug use, and problem behaviors considered *addictive* are those that deviate from socially acceptable standards. Addictive behaviors are considered forms of social deviance rather than medical problems. Sociologically, *treatment* is seen as an effort to persuade the addicted individual to conform to socially “correct” standards of conduct.

The cultural foundations of diagnoses were recognized by prominent alcoholism researcher George Vaillant (1990, 1995), a proponent of
the disease conception. Vaillant (1990) stated: “Normal drinking merges imperceptibly with pathological drinking. Culture and idiosyncratic viewpoints will always determine where the line is drawn” (p. 5). The sociocultural origins of diagnoses force us to consider certain possibilities. First, a diagnosis, as applied to a particular client, may not be very different from a personal opinion: It may be based not so much on scientific evidence as on the values and beliefs of the addiction practitioner. The practitioner’s own history, relative to his or her involvement in addictive behavior, clearly influences the opinion.

Time and place also play important roles in the sociocultural origins of diagnoses. For example, drinking that is considered alcoholic in one period of time or place may not be viewed similarly in another temporal or geographic context. Heath (1988) noted that 150 years ago, Americans consumed three times more alcohol (per capita) than they consume today. Clearly, the notion of what an alcoholic was then would have differed substantially from our conception today.

These cultural factors also should sensitize clinicians as to the consequences, both positive and negative, of applying the diagnosis (i.e., label) of addiction to a particular client. In the best of cases, the diagnosis will motivate the client to change his or her behavior. However, a positive diagnosis also could lead to overly intrusive treatment, social stigma, estrangement from family members, loss of employment, feelings of worthlessness and humiliation, or even exacerbation of existing problems in living. Obviously, the addiction diagnosis should be made with caution. One can legitimately question the value of making a positive diagnosis (even when one is clearly appropriate) if there is reason to believe that it will have an adverse effect on a client.

**Sociological Functions of Substance Abuse**

From a sociocultural vantage point, abuse of alcohol and drugs can be described as having four broad functions. One is the facilitation of social interaction. That is, the use of alcohol (and some illegal drugs as well) enhances social bonds. It makes communication involving self-disclosure easier. Interpersonal trust is strengthened, whereas barriers or guards are diminished. In addition, the intoxicated state and the attending rituals and jargon allow users the opportunity of a shared experience.

A second function is to provide a release from normal social obligations. In anthropology, alcohol and drug abuse have been characterized as *time-out* periods (Heath, 1988). The purpose of intoxication is to permit people to withdraw from responsibilities that society normally expects teenagers and adults to carry out. In this view, substance abuse is an effort to
escape temporarily from the roles thrust upon individuals (parent, spouse, employee, student, etc.). Intoxication allows for a temporary respite from the stresses and strains inherent in these roles.

A third function of alcohol and drug abuse is to promote cohesion and solidarity among the members of a social or ethnic group. The use or nonuse of a drug can be viewed as a means of group identification. It also establishes group boundaries. That is, substance abuse serves as a social boundary marker, defining who we are and who they are.

A fourth function of substance abuse, from a sociocultural perspective, is the repudiation of middle-class or “establishment” values. A substance abuse subculture consists of abusers of a particular drug that all hold similar antiestablishment values. In essence, members of drug subcultures “thumb their noses” at conventional mores and norms, particularly those related to morality and economic productivity. Lifestyles are characterized by hedonistic pursuits, spontaneity, and freedom from responsibilities. This is a value structure at odds with that middle-class America.

**Social Facilitation**

Some illicit drug use (e.g., LSD) is associated with motivations unrelated to increased sociability. Alcohol, in contrast to the illegal substances, has a distinctive social function. Because its consumption is legal, alcohol is more closely associated with good times, parties, and fun with others.

**Distinctive Social Function of Alcohol**

The use of alcohol to facilitate social pleasure and interactions with others has been reported for thousands of years among most of the cultures of the world. For example, the Code of Hammurabi, the earliest known legal code (promulgated circa 1758 B.C.E. in Babylon), contains laws governing the operation and management of drinking establishments (King, 2005). At another time, the Greek philosopher Plato expressed concern about the drinking of his countrymen, so he established rules for conduct at “symposia,” which, in reality, were drinking parties. He directed that at each symposium a “master of the feast” must be present. This person was to be completely sober. His responsibilities included deciding how much water should be added to the wine and when to bring on the dancing girls. Plato observed:

When a man drinks wine he begins to feel better pleased with himself and the more he drinks the more he is filled full of brave hopes, and conceit of his powers, and at last the string of his tongue is loosened, and
fancying himself wise, he is brimming over with lawlessness and has no more fear or respect and is ready to do or say anything. (Jowett, 1931, p. 28)

Drinking has been thoroughly integrated into mainstream U.S. culture today. Alcoholic drinks have come to be known simply as a drink. If a person invites a neighbor “to come over for a drink,” everyone usually recognizes that alcohol is being offered. Alcohol consumption is expected behavior at various social, family, and business gatherings, both formal and informal. Though individuals are not usually directly pressured to take a drink in such gatherings, a subtle pressure to do so often exists. A blunt refusal often invites puzzlement, covert speculation, or even suspicion as to one’s motives.

Frequently, refusing to drink is interpreted as passing on an opportunity to meet and talk in an informal way. This is particularly true in business or other work settings characterized by formal or professional relationships. In such settings, people often desire to escape from the restrictive confines of stiff or rigid professional roles. Drinking together is seen as the way to loosen up.

**Time Out from Social Obligations**

**The Basic Hypothesis**

The time-out hypothesis applies to both alcohol and drug abuse. It maintains that the abuse of intoxicants serves to release individuals temporarily from their ordinary social obligations. By becoming intoxicated, they are excused from their obligations as parents, spouses, students, employees, and so forth. Many years ago, MacAndrew and Edgerton (1969) came upon this notion by observing that many cultures exhibit a certain flexibility in norms that allows for suspension of certain role obligations during times of drunkenness. They were careful to point out that the option of time out does not suspend all the rules. In all cultures, certain behavior, even while intoxicated, is considered inexcusable; thus, intoxicated persons are viewed as less responsible rather than as totally unresponsible (Heath, 1988). According to MacAndrew and Edgerton (1969), “the option of drunken time-out affords people the opportunity to ‘get it out of their systems’ with a minimum of adverse consequences” (p. 169). Heath (1988) notes that the concept is more of a descriptive tool than an analytic one. However, he adds that it may be useful as an early sign of alcoholism. Young people who get intoxicated to avoid, or escape from, social role expectations may be susceptible to developing more serious drinking problems.
Achievement Anxiety Theory

The time-out hypothesis essentially describes *escapist drinking*—that is, drinking to escape role obligations of any sort. Misra (1980) has outlined a model that describes substance abuse as an effort to escape a specific class of role obligations. As Misra sees it, the substance abuser is attempting to evade the pressures placed on him or her to achieve and produce income. Blame is not placed on the individual who abuses drugs but, rather, on U.S. culture and its obsession with materialism, financial success, and personal achievement.

Achievement anxiety theory maintains that drug abuse is a response to a “fear of failure” (Misra, 1980, p. 212). It allows the abuser to withdraw from the pressures placed on the individual to achieve. At the same time, substance abuse induces and maintains a sense of apathy toward standards of excellence that U.S. culture defines as important. According to Misra (1980), one of the chief characteristics of technologically advanced countries such as the United States is anxiety about achievement. Obtaining or reaching socially prescribed goals can become a compulsion in itself (i.e., *workaholism*). Many Americans have a dire need to “be somebody.” Such competitive conditions cause people to feel anxious, fearful, inadequate, and self-doubting. As a result of these modern pressures, many Americans, in Misra’s view, are likely to rely on alcohol and drugs as a way to cope.

According to achievement anxiety theory, drugs are initially used to seek relief from the pressures of achievement and productivity. In effect, they provide a quick chemical vacation from the stresses of contemporary life. This conceptualization is quite similar to that of *time out*. However, Misra (1980) further develops the concept by noting that continued abuse of drugs tends to reduce the difference between work life and leisure-time activities. In essence, the chemical vacations gradually change from being infrequent, temporary respites to full-time pursuits (i.e., addiction).

In addiction, the primary goal becomes freedom from productivity; Misra applied the label *antiachievement*. In this state, relief from achievement anxiety is no longer the goal. Instead, the goal is to maintain a sense of apathy or even hostility toward recognized and socially prescribed standards of excellence. This is the work ethic in reverse. According to Misra (1980):

> Drug abuse is, in a sense, a silent protest against the achieving society. It protects us from a sense of failure: “I may not be achieving what my neighbors and colleagues are, but I do attain a unique feeling of relaxed carelessness.” Addictions form the nucleus of a subculture of people who all have the same feeling of nonachievement, and friendships evolve around this theme as efforts are made to create and maintain fellowship among the addicts. (p. 368)
In achievement anxiety theory, leisure, as pursued in technologically advanced countries, has a special relationship. Americans have to plan to relax. This plan is typified by arranging well in advance, elaborate, action-packed vacations. Each day is planned out, including hectic travel itineraries. This situation is exacerbated by the fact that U.S. holidays are relatively short in duration and rigidly defined.

Misra was critical of this approach to leisure. Doing something rather than nothing has become the hallmark of relaxation in the United States. As Americans creatively jam their leisure time with activity, they become as anxious about their vacations as they are about work. People often come to believe that relaxation must be achieved, here and now. This sense of immediacy for relaxation encourages the adoption of time-saving techniques. Of course, substance abuse fills this perceived need. Alcohol or drug abuse becomes a quick, easy procedure for “getting away from it all.”

**Promoting Group Solidarity/Establishing Social Boundaries**

For hundreds of years, the use of alcohol and drugs has been an important feature of identification with one’s ethnic or racial group. With the mainstreaming of various sociodemographic groups into U.S. culture, drinking and drug use practices have served to promote solidarity and cohesion within groups (Heath, 1988). The use of substances also demarcates the boundaries between ethnic and racial groups. It is one source of identity. It solidifies a person’s social identity and helps the person define him- or herself in reference to others. The use of alcohol or drugs also shapes the images that individuals want or expect others to have of them (Heath, 1988).

**Alcohol as a Boundary Marker**

Anthropologists have identified numerous examples of how drinking has functioned to separate social groups and to promote cohesion within themselves. The American Temperance movement (1827–1919) is one such example. During the 19th century, temperance groups were widespread in the United States. Initially, temperance groups sought to reduce the consumption of hard liquor and to promote drinking at home, as opposed to saloon drinking. This emphasis on temperance gradually gave way to one demanding abstinence. As could be expected, this led to quarrelsome disputes between “wets” and “drys,” and eventually to Prohibition (1919–1933). However, the dispute actually represented deeper ethnic and social class conflict. According to Ray and Ksir (2004):
Prohibition was not just a matter of “wets” versus “drys” or a matter of political conviction or health concerns. Intricately interwoven with these factors was a middle-class, rural, Protestant, evangelical concern that the good and true life was being undermined by ethnic groups with a different religion and different standard of living and morality. One way to strike back at these groups was through Prohibition. (p. 274)

For those involved in the Temperance movement, abstaining (vs. drinking) was a social boundary marker. It served to promote a self-righteous pride within movement workers and was taken as proof that they were morally superior to those who did drink.

For the Temperance movement, abstinence was the source of group identification. In other social/ethnic groups, drunkenness was and is the social boundary marker. Heath (1988), in a description of drunkenness among Native Americans, notes that “some Indians embrace the stereotype and use it as a way of asserting their ethnicity, differentiating themselves from others, and offending sensibilities of those whites who decry such behavior” (p. 269). Lurie (1971) has suggested that alcohol abuse by Native Americans is one of the last ways that they can strike back or rebel against white America. He referred to their drinking as “the world’s oldest ongoing protest demonstration” (p. 311).

Situated between the extreme conditions of abstinence and drunkenness are a variety of culturally distinct drinking practices. Again, these practices serve to facilitate group identification and boundary marking. One widely recognized example, as mentioned earlier, is the Jewish tradition of moderation (Heath, 1988). Alcohol plays a significant role in Jewish family rituals (Lawson & Lawson, 1998); however, excessive consumption, particularly drunkenness, is viewed as inexcusable behavior. Within the Jewish culture, conduct norms allow for frequent but sensible use. According to Glassner and Berg (1980), these beliefs and conduct norms “protect” Jews from developing problems with alcohol. The Yiddish expression “Schikker ist ein Goy” translates to “Drunkenness is a vice of Gentiles” (Glassner & Berg, 1980, p. 654). The Jewish tradition of moderation and sobriety reflects basic values emphasizing rationality and self-control (Keller, 1970). Thus, Jews perceive drunkenness as being irrational and out of control.

It is generally accepted that Irish Catholics have relatively high rates of alcoholism (Lawson & Lawson, 1998). For example, Vaillant (1983) found that Irish subjects in his sample were more likely to develop alcohol problems than those of other ethnic backgrounds; in fact, they were 7 times more likely to be alcoholic than those of Mediterranean descent. In the same study, Irish subjects were found to be more likely to abstain in an effort to manage a drinking problem. Vaillant (1983) observed: “It is consistent with Irish culture to see the use of alcohol in terms of black and white, good or evil, drunkenness or complete abstinence, while in Italian
culture it is the distinction between moderate drinking and drunkenness that is most important” (p. 226). It has been suggested that the Irish have distinctly ambivalent feelings about the use of alcohol (Lawson & Lawson 1998). Viewing alcohol use dichotomously, as either good or bad, eliminates the middle possibility (i.e., moderate, sensible drinking).

Drinking has never been healthfully integrated into Irish family rituals (e.g., drinking at family wakes) or religious traditions (Lawson & Lawson, 1998). Rather, in Irish tradition, drinking has been viewed as a means of coping with oppression and hard times. In the 19th century, the oppression was largely political in nature and came at the hands of the British. Poverty and famine were widespread, and many an Irishman turned to alcohol in an effort to cope (Bales, 1946). At this time, the terms *Irishman* and *drunkard* became synonymous (Bales, 1946).

What appears to have evolved in Irish culture is the shared norm that alcohol is an effective way to deal with our hard times that so commonly befall us” (Bales, 1946). Bales (1946) has proposed that cultures such as the Irish, which are characterized by suppression of aggression, guilt, and sexual feelings and which condone the use of alcohol to cope with these impulses, will probably have high rates of alcoholism. Alcohol use is seen by the Irish as their way of coping with personal distress. Although on one hand drinking is viewed as the “curse of the Irish,” on the other it is seen as the quintessential Irish act, one embodying all that is *Irish*. In a symbolic way, drunkenness connects the Irish to all of their similarly anguished ancestors. Though this is probably an overly sentimental portrayal of Irish drinking customs, to some degree it captures the socially unifying aspects of drinking within the culture.

**Misperceived Peer Norms: Explaining Alcohol Abuse among Young People**

Alcohol abuse is a serious problem on college campuses in the United States (Wechsler et al., 2002). Binge drinking, blackouts, drinking and driving, and an assortment of other alcohol-related problems are more prevalent in this group than in society at large. Though these are not new problems, frequent media reports of unintentional alcohol-related deaths, fraternity-hazing incidents involving alcohol, and celebratory rioting in college towns maintain a high level of public concern about the problem. Why is it a severe problem?

One explanation that is commonly relied on today is the *misperceived norms hypothesis* (Baer, Stacy, & Larimer, 1991; Perkins & Berkowitz, 1986; Thombs, Wolcott, & Farkash, 1997). This model maintains that excessive drinking among young people is maintained by misperceptions of peers’ drinking practices. Biased drinking norms tend to develop in relatively insular social environments, such as schools and colleges (Baer et
The perceptions of peer drinking norms tend to become biased or exaggerated because students interact mostly with other students, and less with older adults, and because in these situations, stories about recent drinking episodes tend to be embellished and bragged about in social conversations (see Berkowitz, 1997).

As a result, a large majority of students develop exaggerated perceptions of the extent to which their fellow students are drinking and engaging in related misbehavior. The belief develops that “everybody is drunk on Thursday, Friday, and Saturday nights,” or “if I’m not drinking—I’ll miss out on the fun.” In other words, students come to perceive that their campus environment is very permissive. Students who hold norms that are more conservative tend to increase their drinking over time to conform to the false norm (Prentice & Miller, 1993). These perceptual biases fuel alcohol abuse. Students begin to think that “heavy drinking is what we do at ________ University” and “everybody at ________ University knows how to party.”

I (D. L. T.) conducted research with middle school, high school, and college students and found that perceived norms are highly correlated not only with alcohol consumption but with drinking and driving and riding with alcohol-impaired drivers (Thombs et al., 1997). Young people who perceived that these behaviors were prevalent among their peers tended to drink heavily as well as to engage in drinking and driving and riding with impaired drivers. Interestingly, relatively large majorities of students (66–79%) perceived that other students at their school engaged in these alcohol behaviors more than they did (Thombs et al., 1997). Only a handful of students thought that they engaged more frequently in these behaviors than did their peers. Another study found that among middle school and high school youth who had not yet initiated use of a drug (tobacco, alcohol, or marijuana), elevated scores on peer norm measures were associated with holding intentions to begin using these substances within the next 6 months (Olds et al., 2005).

**Illicit Drugs as Boundary Markers**

Illicit drugs have also been used to promote group identity and to establish ethnic boundaries. One frequently described example involves the Chinese laborers who were brought to the western United States in the last half of the 19th century to build the railroad system. Large numbers of Chinese were imported at this time to complete the arduous task of constructing new track; they brought with them their practice of opium smoking. Opium dens were created as places to spend nonworking hours.

The practice of opium smoking never spread to other social groups. Local community leaders in many jurisdictions (who, of course, were white) passed legislation to forbid the practice. In general, most Americans viewed
the use of opium by the Chinese with distaste and repugnance. Thus, for the white majority, opium smoking served as a significant social boundary. It was useful to them as a means of identifying who we (the good people) were and who they (the Chinese, the bad people) were. Furthermore, the drug experience (opium smoking) itself made apparent the distinctive value structures of the Chinese versus the white Americans. Opium smoking was consistent with the Chinese emphasis on reflection and introspection. It was at odds with the American orientation toward productivity, action, and settling the West.

**Drug Subcultures:**

**Repudiation of Middle-Class Values**

Middle-class U.S. culture is characterized by a broad set of rather diverse values and conduct norms for adults. It is essentially a parent culture that includes expectations for what youths can and cannot do. In general, parents expect young people to avoid tobacco, alcohol, and illicit drug use. This expectation is reflected in laws that prohibit youths from purchasing cigarettes and alcohol before the ages of 18 and 21, respectively. To various degrees, the values and conduct norms of the parent culture are internalized by youths. Of course, the extent of this socialization varies from youth to youth and across particular classes of values as well.

The youth culture defines what peers or friends expect each other to do or not to do (Steinberg, 2008). In its attempt to control and influence young people, the parent culture competes with the youth culture. This competition is an ongoing, dynamic process. The parent culture usually attempts to defend traditional values, whereas the youth culture encourages experimentation with new or novel forms of expression. According to B. D. Johnson (1980), the youth culture emphasizes the following conduct norms:

1. The person must be loyal to friends and attempt to maintain group association.
2. Social interaction with the peer group should occur in locations where adult controls are relatively absent.
3. Within such peer groups, a veiled competition exists for status and prestige among group participants and leads to new forms of behavior or operating innovations. (p. 111)

*Youth culture* and *peer group* are closely related but distinct concepts. A young person’s close circle of friends is his or her peer group. The term *youth culture* refers to a much broader influence—one that touches all peer groups via community, school, church, online, and media messages. The
pervasive influence of the youth culture explains the great similarity among geographically distant peer groups. This is particularly the case today with social networking utilities (e.g., Facebook.com).

A subculture consists of a culture within a larger culture (B. D. Johnson, 1980). It is characterized by values, conduct norms, social situations, and roles that are distinct from, and often at odds with, those of the middle class. The term drug subculture refers to these same components as they pertain to nonmedical drug use (B. D. Johnson, 1980).

Excluded from this conceptualization are the values and conduct norms associated with medical and most legal drug use. Thus, psychoactive drugs prescribed by a physician are not included, nor is use of over-the-counter medications or cigarettes. The moderate social use of alcohol is also excluded from a drug subculture analysis, because such drinking practices are clearly part of middle-class culture. However, in the subsequent discussion, the values and conduct norms of the alcohol abuse subculture are explored.

A relatively unique constellation of values define a subculture. According to B. D. Johnson (1980), “the most important elements of a subculture are its values and conduct norms. Values are here understood to be shared ideas about what the subgroup believes to be true or what it wants (desires) or ought to want” (p. 113). The most significant value of a drug subculture is the intention or desire to alter consciousness, or to get “high.” This value (i.e., the wish to get high) is the organizing theme of all drug subcultures and their activities. The corresponding conduct norm is an expectation that all subculture participants will partake in the use of a drug, or at least express a desire to do so. Within subcultures, certain behavior is expected of persons in particular social positions. These performances are referred to as roles. In drug subcultures, there are three primary roles: seller, buyer, and user (B. D. Johnson, 1980). Performance of these roles is almost always illegal, so the execution of them is generally covert, or hidden from the public at large. Thus, the public is generally ignorant of the behavior needed to carry out the role of seller, buyer, or user (B. D. Johnson, 1980), which in part, explains the great fascination and curiosity nonsubculture members often express about these activities.

Also characteristic of drug subcultures are rituals involving highly valued objects. The objects are usually instruments for self-administration of drugs and may include mirrors, spoons, special pipes, vials, and straws or rolled-up dollar bills for snorting. For example, the heroin subculture favors the use of the hypodermic syringe and incorporates it into rituals in which several addicts may share the same needle (e.g., in shooting galleries). The marijuana subculture values such objects as roach clips, water pipes, and rolling papers. These symbolic objects and drug rituals are rarely known outside the subculture but are widely known within it. They serve to bolster group identity and solidarity.
By the time most illicit drug addicts have reached their mid-20s, they have developed a preference for one drug over others. This preference may simply be a function of their participation in a particular drug subculture. The addicts may have an elaborate set of reasons for why their drug is superior to others. Heavily influencing their attachment to one drug are their bonds and identification with their peer group. B. D. Johnson (1980) has noted that subculture participants tend to ignore great similarities in the behavior of drug addicts and tend to emphasize the importance of differences that seem very small to outsiders. For example, alcoholics may perceive heroin addicts as *lowlifes*, while many heroin addicts view alcoholics as *weak crybabies*.

**Drug Laws as a Means of Striking Back at Low-Status Groups**

Drug subcultures are dynamic. Historical, political, economic, and sociocultural factors influence their formation and dissolution. However, some of trends are quite predictable. Some time ago, B. D. Johnson (1980) noted with insight:

> When patterns of drug use are limited to low-income and low-status groups, societal reaction tends to be punitive, and government pursues a prohibitionist policy. When drug use becomes common in many segments of the youth population, public reaction is one of temporary alarm with later adjustment and easing of enforcement effects and legal punishments. (p. 115)

A good example of how cultural biases and fears shape U.S. drug laws involves the legal distinction between crack cocaine and powder cocaine (Caulkins et al., 1997). Until November 1, 2011, under federal law a person convicted of possessing just 1½ grams of crack was subject to a 5-year minimum sentence, whereas 150 grams of powder cocaine were needed for the same sentence (U.S. Sentencing Commission, 1998). Thus, depending on the form of the cocaine, the mandatory minimum sentence for cocaine varied by a factor of 100!

In 2010, the U.S. Congress passed legislation to reduce this 100 to 1 sentencing disparity to 18 to 1 (U.S. Sentencing Commission, 2011). The U.S. Supreme Court, in a 5–4 decision, later upheld the government’s decision to apply the reduced penalties retroactively to over 12,000 prison inmates convicted under the old cocaine guidelines. Regardless, the current 18 to 1 sentencing disparity that provides more severe penalties for crack violations continues to be questioned by drug law reform advocates.

Who tends to be arrested on crack cocaine charges? According to Motivans (2011), 75% of those arrested by the U.S. Drug Enforcement
Administration on crack cocaine charges in 2009 were African American and 9% were European American, even though most crack users in the United States are European American. In powder cocaine cases during the same year, African Americans comprised only 29% of these arrestees. Thus, critics have charged that the sentencing disparities continue to be racist. The situation illustrates how drug laws are sometimes used to strike back at groups that are feared by the dominant culture.

Changes in drug use, shifts in public opinion and public debate, and new government initiatives are among the dynamic social forces that spur the development of drug subcultures. Therefore, they are not static social groups; subcultures are always changing. Though identification of their chief features can become quickly dated, key aspects of five of today’s drug subcultures can be delineated and are described next.

**The Alcohol Abuse Subculture**

Alcohol is a powerful mood-altering drug. Yet it is legally available and its use is widespread, even expected, in U.S. middle- and upper-class cultures. Alcohol is viewed as both a beverage and an intoxicant—one that is principally used to facilitate social interaction and relief from stress. There is significant social pressure in this society to drink, at least in moderation. Abstention from alcohol is considered almost as deviant as binge drinking.

In contrast to the sensible, “social” use of alcohol stands the alcohol abuse subculture. The conduct norms of this subculture expect participants to get wasted, totaled, smashed, or bombed. The emphasis is on excessive consumption. Alcohol is not used as a beverage but as a drug; that is, drunkenness is intentional or purposely sought. Such drinking contrasts sharply with that of the larger middle class, where drunkenness is viewed with embarrassment and met with social disgrace. Many high school and college students become participants in the alcohol abuse subculture, although a sizable proportion seem to “mature out” of it as they assume full-time jobs, get married, and/or have children.

Certain reciprocity conduct norms exist in the alcohol abuse subculture. It is expected that participants will share in the pooling of money to buy relatively large quantities of alcohol (e.g., a case or keg of beer). There is the expectation that one member will buy drinks for other members, and that the favor will later be reciprocated. In some social groups, bottle passing is expected. In others, drinking games (e.g., quarters, pass out, and others) or reliance on special paraphernalia (e.g., beer funnels) is encouraged. Again, these rituals and objects serve to promote group identity and solidarity.

These social functions become clear when one considers the very high rate of alcohol abuse in college fraternities and sororities (Capone, Wood,
Borsari, & Laird, 2007; Cashin, Presley, & Meilman, 1998). These Greek-letter organizations are at the center of the alcohol abuse subculture on campus. It is well established by research that members of fraternities and sororities consume substantially more alcohol prior to enrolling in college (Capone et al., 2007) and during their college years than non-Greek students (Capone et al., 2007; Cashin et al., 1998).

Greek student conduct norms for drinking appear to be established to a great extent by the fraternity and sorority leaders (Cashin et al., 1998). Thus, on many campuses, some fraternities come to resemble alcohol-dispensing outlets—particularly for underage drinkers. Drinking games have long been significant features of fraternity parties (Engs & Hanson, 1993). They organize binge drinking and ensure participant intoxication. Well-known campus rituals include the practice of keg standing and consuming jello shots.

Participants of the alcohol abuse subculture are not always young people. Older adults may also be participants of this subculture. The middle class tends to label such adults alcoholics. Their drinking may also be ritualized (e.g., three drinks before dinner, never drinking before noon, and stopping at a bar each day after work). Elaborate liquor cabinets or even full-size bars may be set up at home. Large quantities of alcohol may be kept in reserve (e.g., a keg of beer on tap in the refrigerator or a dozen or more cases of beer bought at wholesale prices stored in the garage). Decorative mirrors, pictures, posters, clocks, ashtrays, and other “knickknacks” from alcohol retailers may adorn their homes. Heavy drinking is clearly a central activity in their lives. That is, they organize much of their lives around the consumption of alcohol.

The Marijuana Subculture

Among young adults, the marijuana subculture thrived in the 1960s and 1970s. The sharing of marijuana was promoted. Rock music lyrics reinforced this conduct norm (e.g., Bob Dylan emphasized in one song that “everybody must get stoned”). It should be understood, though, that the predominant values were not ones of aggression and pressure; rather, values emphasized peace, love, understanding, and social harmony. Yet a subtle form of peer pressure did exist within the subculture to use the drug.

Usually, no money was exchanged in the sharing of marijuana. Group participants were trusted to reciprocate at some future date. Those who bought relatively large amounts of “pot” were expected to share small amounts with friends and to sell to friends at cost. There was an expectation that marijuana buyers and sellers were not supposed to turn large profits. Typically, buyers and sellers within this subculture were expected to socialize and smoke together. The business aspects of the transactions were deemphasized.
In this era, there was the naive but persistent belief that marijuana use could correct many of the social ills of the United States. The middle class, particularly the parent culture, was perceived as obsessed with material things as well as racist, sexist, corrupt, and hypocritical. Marijuana use was naively thought to be the single answer to all social problems. This conviction (among others) helped to forge the youth–parent culture conflict (i.e., the *generation gap*) of the 1960s and 1970s.

These social values promoted the acceptance of marijuana, and its use was relatively high among youth. However, the 1980s saw a reversal in this trend with fewer and fewer young people experimenting with it or using it regularly (Johnston, O’Malley, & Bachman, 1989). By 1992, marijuana use among youth had fallen to its lowest level in the 23 years of the national Monitoring the Future Study; about 22% of high school seniors reported using marijuana one or more times in the previous 12 months (Johnston, O’Malley, Bachman, & Schuelenberg, 2005). Then, in 1993, there appeared a second reversal in the trend. Marijuana use among youth increased each year: 1993–1997. By 1997, the annual prevalence of marijuana use among high school seniors reached a rate of about 39%. This peak was followed by small steady declines until 2006, when about 32% of seniors reported use of the drug in the past year (Johnston et al., 2012). Beginning in 2007, the annual prevalence rate of marijuana use among high school seniors began, once again, to increase each year; by 2011, the rate had increased to 36%. The reasons behind these decade-long trends are not known.

A new marijuana subculture has emerged in the United States, Europe, Australia, and other countries. Popularly referred to as the *cannabis counterculture*, it is not so closely linked to the youth culture as it was in the 1960s and 1970s. Today, participants are often aging baby boomers (people born between 1946 and 1964) who used marijuana throughout their life, and those who picked up the habit again in midlife, after stopping use (Gfroerer, Penne, Pemberton, & Folsom, 2003; Willesee, 2008; Wu & Blazer, 2011). Results from the National Survey of Drug Use and Health indicate that 2.5 million Americans, ages 50 and older, used marijuana in the past year, representing 2.8% of this age cohort (Office of Applied Studies, 2009). Indeed, baby boomers have become a part of the engine driving the medicinal marijuana movement that is now at the center of the marijuana subculture. Although questions exist about its effectiveness as an analgesic, some midlife and elderly persons prefer to smoke marijuana than to use pain medication for conditions such as arthritis (see Medical Marijuana for Rheumatoid Arthritis?, 2011).

**The Polydrug Abuse Subculture**

B. D. Johnson (1980) identified a drug subculture characterized by polydrug abuse. Front-line practitioners working in the field today are keenly
aware of the use of multiple substances, either simultaneously or on different occasions. Although polydrug abuse is prevalent among young adults, this is not a new problem. These patterns have been well documented in the research literature for some time (Chen & Kandel, 1995).

One can consider the polydrug abuse subculture to be an outgrowth of the marijuana subculture. One distinguishing conduct norm of this subculture is that participants are expected to use almost any substance in an effort to alter consciousness. In addition to alcohol and marijuana, the use of cocaine, crack cocaine, tranquilizers, sedatives, narcotics, ketamine (Special K), inhalants, methamphetamine, hallucinogenic mushrooms, MDMA (Ecstasy), and other designer drugs is encouraged. Conduct norms also require that members be willing to smoke and inhale (snort) a drug, as well as administer it orally. Usually, conduct norms do not expect participants to inject a drug; this is a boundary marker that distinguishes this group from the heroin abuse subculture. Polydrug abuse subculture participants frequently perceive self-administered injection as “going one step too far.” They may be heard to say, “That [injection] is the one thing that I would never do.”

Sharing drugs and using combinations of drugs are important in this subculture. A participant who has pills is expected to share with someone who has cocaine, for example. Some drugs are more highly coveted than others; typically, crack cocaine is more highly valued than a drug such as PCP (Thombs, 1989). Drug sellers (dealers) are not necessarily expected to socialize with buyers in the polydrug abuse subculture.

The popularity of drug combinations is always in flux. For example, in the late 1990s, one drug combination involved the use of nitrite inhalants (poppers), Viagra (the medication used to treat erectile dysfunction), and sometimes methamphetamine as well (Zamora, 1998). This potentially lethal combination was reported in some circles in the gay community in California. Apparently, users believe that Viagra can improve sexual performance while under the influence of other substances.

The rave (dance festival) and after-hours party scenes are also manifestations of the polydrug abuse subculture (Fernandez-Calderón et al., 2011; Lovett, 2011; NIDA, 2005). These all-night dance parties are typically attended by older teens and those in their early 20s. Loud “technomusic” is accompanied by laser and light shows. Raves were considered a forum for so-called Generation X. Rave and after-hours parties are promoted on Facebook and Twitter and by word of mouth. Clubs that hold rave parties usually check identification at the door, but fake IDs are reported widely used by underage ravers. Some rave and after-hours parties promote themselves as alcohol free, but others serve alcohol, and some allow participants to bring their own. Nonalcoholic drinks are typically sold, including smart drinks comprised of fruit juice, vitamins, amino acids, and caffeine. The club drugs most commonly associated with raves and dance parties are
LSD, Ecstasy, GHB (gamma hydroxybutyrate—Rohypnol), methamphetamine, and ketamine (Kiyatkin & Sharma, 2012; Maxwell, 2004), though the use of other drugs has been reported as well. Participants are reported to freely share drugs with one another, and use of multiple substances is common. Over the years, media reports have alleged that at some large parties, organizers have distributed substances with the claim that they are legal herbal preparations (e.g., Canto, 1997).

The Narcotic Pain Medication Subculture

Over the past decade, the nontherapeutic abuse of narcotic pain medications has soared in the United States and other countries (Manchikanti et al., 2012; Paulozzi, Weisler, & Patkar, 2011). These medications, also known as opioid analgesics, include OxyContin, Vicodin, Percodan, Dilaudid, Kadian, and a number of other pain-relieving drugs normally dispensed from pharmacies in tablet form. Findings from the Drug Abuse Warning Network (DAWN) show that oxycodone products (including OxyContin) were associated with a 255% increase in hospital emergency department visits from 2004 to 2010—the greatest percent change of any drug category over that period (SAMHSA, 2012a). In the United States, overdose deaths related to narcotic pain medications now exceed those associated with heroin and cocaine combined (CDC, 2011). The drivers of this epidemic appear to be (1) consumer demand for improved treatment of pain; (2) campaigns claiming that pain is an undertreated condition; (3) liberalization of laws governing the prescription of narcotic pain relievers; (4) aggressive marketing of these medications by the pharmaceutical industry; and (5) insufficient prescription monitoring and law enforcement resources directed to the problem.

According to Manchikanti et al. (2012), in the United States over 238 million prescriptions were written for narcotic pain medications in 2011. Among nonmedical users of narcotic pain medication in the U.S. population, 56% are male, and 74% are European American, 12% Hispanic, and 9% African American (SAMHSA, 2011). OxyContin (43.8%) is the most preferred opioid among nonmedical users, followed by Dilaudid (15.6%) and fentanyl (9.4%) (Katz, Fernandez, Chang, Benoit, & Butler, 2008). Participants in this subculture obtain these drugs through multiple prescriptions from different physicians, from illegal dealers, from persons who have a prescription for the medication, and from poorly informed or unscrupulous physicians. Only about 17% of nonmedical users receive their drugs from prescriptions provided by a single physician, however (Manchikanti et al., 2012). The primary diversion methods that illegal dealers use to obtain narcotic pain medications include (1) visiting multiple pain clinics to obtain multiple prescriptions; (2) persuading pharmacy employees to steal these medications; and (3) purchasing them from poor patients (Rigg, Kurtz, &
Surratt, 2012). Though it is limited at this time, existing evidence suggests that online suppliers are not making a major contribution to the illegal trade in narcotic pain medications (Inciardi et al., 2010).

The Methamphetamine Subculture

Methamphetamine is a potent stimulant known on the street as *meth*, *ice*, *crank*, and *crystal*. The drug can be smoked, injected, or inhaled (snorted). The methamphetamine “high” is similar to that produced by cocaine, except it has a long high-life of about 12 hours—that results in an intense, prolonged drug action (Julien et al., 2011). Under the influence of the drug, users report feeling powerful, confident, and energized, with no sense of fatigue. However, paranoia often develops after chronic use. During the 1940s and 1950s, methamphetamine was used by physicians to treat a wide range of disorders, including narcolepsy, obesity, asthma, morphine addiction, head injuries, tobacco smoking, epilepsy, and other conditions (Vearrier et al., 2012). Today, virtually all use is illicit, as the drug is clearly recognized to be a neurotoxic agent (Julien, Advokat, & Comaty, 2011).

In 1996, the U.S. Congress passed federal legislation that restricted large-volume sales of methamphetamine precursor chemicals, such as red phosphorous, iodine, and hydrochloric gas (Vearrier et al., 2012). The legislation also allowed law enforcement agencies to monitor and track large purchases of pseudoephedrine, another precursor chemical. These steps appeared to have reduced the number of methamphetamine “super labs,” but has done little to slow illicit production in clandestine “mom and pop” laboratories, sometimes referred to as *cookers*, which are often located in modest homes, trailers, barns, and storage units. In many cases, these clandestine labs are located in rural areas to prevent detection associated with the strong odors emitted during methamphetamine production. Methamphetamine labs are often dirty and garbage-littered settings made dangerous by the presence of toxic chemicals that are sometimes absorbed into carpet, furniture, and drywall.

In this subculture, the methamphetamine lab operator plays the roles of both user and seller. Frequently, barter is relied upon in these transactions instead of money. According to media reports, a two-day methamphetamine high may cost only $25 (Martin, Roarke, & Gaddy, 2012).

Media and law enforcement reports are filled with stories of bizarre behavior carried out by chronic methamphetamine users. These stories often describe unusual hoarding practices, strange patterns of compulsive behavior, and paranoia. This latter consequence of drug use may account for the guns and other weapons that are a prominent feature of the subculture. These behaviors are consistent with the cognitive deficits and psychiatric problems of chronic methamphetamine abuse reported in the medical literature (Vearrier et al., 2012).
A total of 5.1% of the U.S. population (≥ 12 years of age) is estimated to have used methamphetamine at least once (SAMHSA, 2011). Methamphetamine use is found throughout the United States, including in both rural and urban areas. However, rates of abuse appear to be concentrated in many western areas of the United States as well as in some rural areas of the eastern United States (Weisheit & White, 2009). Methamphetamine use appears to be most concentrated in American Indian/Alaska Natives, Mexican Americans, and European Americans. Low rates are observed in Asian Americans and African Americans (Weisheit & White, 2009). Rates of methamphetamine use appear to be nearly equal among men and women. Many chronic users are not high school graduates, do not hold full-time jobs, and do not have medical insurance (Weisheit & White, 2009). Despite the popular perception that methamphetamine is primarily a drug used by working class men and women in rural areas, the drug has also been linked to the urban gay sexual subculture in large U.S. cities (see Green & Halkitis, 2006).

The Heroin Injection Subculture

The heroin injection subculture expects participants to self-administer heroin via hypodermic injection. Although users may share heroin from time to time, they have strong expectations that peers will reciprocate at a later time. In addition, participants in this subculture are often involved in all three drug subculture roles: buyer, user, and seller. Participants provide other participants with information (connections) regarding where to secure more of the drug. Most participants of the heroin injection subculture were previously involved in the polydrug abuse subculture, and they may continue their contacts with this network to maintain access to substitutes for heroin when its availability on the street is low (Lankenau et al., 2012). Heroin injectors may also use prescription opioids and tranquilizers to boost a heroin high; to self-treat pain and symptoms of heroin withdrawal; to moderate frequent injection of heroin; and to lessen risks associated with injecting drug use, such as contracting HIV from a shared needle (Lankenau et al., 2012).

More than 35 years ago, Zinberg and Jacobson (1976) reported on a practice dubbed chipping. This is the practice of controlled heroin use for a sustained period of time. They indicated that they had tracked 54 heroin chippers who had maintained the practice for 2–23 years and concluded that “chipping can be a stable pattern of use, time, a fact not altered by the likelihood that many of our sample may discontinue opiate use over time” (Zinberg & Jacobson, 1976, p. 40). Today, the term chipping is still used to refer to the highly controversial practice of injecting heroin on an occasional basis.

Unfortunately, there are no reliable estimates of the prevalence of heroin chipping in the population, and no documentation of the rates of
success with maintaining occasional heroin use for extended periods of time. Many critical observers believe that chipping is rarely a stable, long-term practice, and is more likely one that sets the stage for heroin addiction.

Heroin and other injection drug use are implicated in the co-transmission of HIV and hepatitis C virus (HCV); that is, both viruses share injection drug use as a route of disease transmission. HIV infections can result in AIDS, whereas HCV infections can cause fatal liver disease. HIV–HCV co-infection related to heroin and other drug injection practices has become a global public health problem (Wang, Zhang, & Ho, 2011). In the United States, chronic HCV infection is now a major burden on the medical system as there are more than 3 million Americans with the disease (Klevens et al., 2012). Furthermore, HCV now accounts for more morbidity and mortality in the United States than does HIV/AIDS. For example, in a sample of 18- to 40-year-old injection drug users living in San Diego (2009–2010), the prevalence rate of HCV was found to be 27%, compared to 4% for HIV (Garfein et al., 2012). One troubling trend in HCV infection rates is an increase in young heroin injectors who were initiated into opioid use by nontherapeutic use of oral opioid medications (Klevens, Hu, Jiles, & Holmberg, 2012).

**Chapter Summary**

Sociocultural perspectives suggest that prevention and treatment practitioners must be aware of basic human values in working with individuals and communities. Though sociologists and anthropologists are subject to personal biases and value judgments, as Light and Keller (1975) noted some time ago, “For generations sociologists have labored under the eleventh commandment, ‘Thou shalt not commit a value judgement’ ” (p. 36). Sociocultural analyses do not pass judgment on the “correctness” of addicts’ values; instead, they serve as relatively impartial analyses of the social phenomena under scrutiny. If sociologists describe a drug subculture as placing a low priority on economic productivity, they are not insisting that addicts are “lazy.” They are simply pointing out that their value structure emphasizes other pursuits, and that this structure deviates from that of the larger middle-class culture.

Many times the so-called resistance demonstrated by persons with substance abuse problems reflects conflicts between their value structure and those proposed by helping professionals. From a social interaction perspective, this may not be as much an unconscious defense as a refusal to adopt the values of the mainstream culture. For instance, a client who indicates that he or she “cannot” attend 90 AA meetings in 90 days is revealing a preference for spontaneity over structure in organizing day-to-day life. A
client who will not make a commitment to abstinence may be demonstrat-
ing a preference for short-term gratification and excitement over long-term
gains (e.g., economic security and family stability) and improved health.
Peele (1985), in particular, noted that many addicts place relatively little
group value on their personal health. The old maxim, “Eat, drink, and be merry,
for tomorrow we may die,” seems to apply here.

Substance abusers may balk at attempts to encourage serious intro-
spection and self-assessment of their behavior. This response may reflect
a value structure that elevates social relations, fun, and amusement over
rational self-control and serious self-understanding. These conflicts are
crucial issues to be uncovered, clarified, and discussed when attempting to
help a person with a substance abuse problem. Many, perhaps most, clients
are unaware of their value priorities and of how these relate to their sub-
stance abuse. Though it may be painful, practitioners should help clients
bring these issues to the foreground of consciousness while maintaining an
objective attitude toward the clients’ value structure.

As a basis for prevention programming or treatment planning, there
are two major limitations to sociocultural concepts. First, many of these
concepts do not seem salient to the practice guidelines of medical and
human services professions. In particular, this may be true of concepts such
as social boundary markers, subcultures, conduct norms, time out, and so
on. Critics have occasionally charged that sociocultural theorists are the
sideline observers of the drug scene. Their concepts provide intellectual
insight but are not helpful in enhancing the direct delivery of treatment
services.

The second limitation pertains to the relative inability of prevention
and treatment practitioners to significantly alter the social, cultural, and
environmental factors that cause substance use and abuse. In this vein,
sociocultural perspectives may be viewed as interesting but of little practi-
cal value because these social variables cannot be readily addressed. This
lack of practicality is likely to prevent sociocultural perspectives from gain-
ing more prominent status among theories on addictive behavior.

### REVIEW QUESTIONS

1. What is meant by the medicalization of addiction?
2. What are the four basic sociological functions of substance abuse? How
do they support substance abuse?
3. What is time out?
4. How does alcohol and drug use serve as a social boundary marker?
5. What is the misperceived norms hypothesis?
6. What is a drug subculture? How is it distinct from middle-class culture?
7. How are drug laws used to strike back at low-status groups?
8. What particular values and conduct norms characterize different drug subcultures?
9. What are the drivers of the narcotic pain medication epidemic?
10. How should values be dealt with in substance abuse counseling?
11. What are the limitations of applying sociocultural concepts to substance abuse prevention and treatment?
History teaches us that the concept of addiction is in a continual state of flux. In the last decade or so, one of the most important changes to the concept is the diminishing role assigned to tolerance and withdrawal symptoms. In traditional definitions of addiction, these neurobiological features were centrally positioned, with great emphasis placed on the need of the brain to adjust to chronic, repeated exposure to high doses of alcohol and/or other drugs. This emphasis waned as more attention was directed to drug self-administration as conditioned behavior; that is, a class of activities maintained by the pharmacological rewards provided by drugs. Understandably, as focus shifted to reinforcement mechanisms and the brain’s reward circuitry, questions began to be raised about whether addiction can be defined apart from drug taking, and how far the concept should be expanded to encompass other pathologies associated with excessive reward seeking, including gambling, eating, having sex, shopping, etc. (Davis & Carter, 2009). This fundamental shift in scientific and clinical perspective ushered in the new notion of behavioral addiction.

Behavioral addiction, also referred to as process or non-substance-related addiction, can be defined as a pathological involvement in a drug-free activity that exposes persons to mood-altering stimuli that produce pleasure or relieve pain. More simply, these are activities that have potential for producing excessive reward seeking without drug ingestion. According to Shaffer’s (2009) conceptualization, behavioral addiction can be thought to have three primary features:
1. Presence of aberrant psychophysiological responses when exposed to specific environmental cues.
2. Continued involvement in the behavior despite experiencing negative consequences.
3. A perceived inability to reduce engagement in the activity (perceived loss of control).

**The Evolving DSM Nomenclature and Diagnostic Criteria for Addiction**

The *Diagnostic and Statistical Manual of Mental Disorders* (DSM) is the most widely used nomenclature for classifying mental disorders in the United States. All disorders recognized by the American Psychiatric Association have specific diagnostic criteria identified in the manual. In addition to use in clinical settings, researchers rely on the diagnostic criteria to study the etiology and treatment of mental disorders, and to document the prevalence and incidence of these disorders in the population.

A major aim of the American Psychiatric Association’s (2013) current edition, DSM-5 is to establish a stronger scientific basis for the diagnosis and classification of psychiatric disorders. The revision process involved experts from a range of fields, including molecular genetics, basic and clinical neuroscience, cognitive and behavioral science, development throughout the lifespan, disability and impairment, and cross-cultural perspectives. Leading professional organizations such as the World Health Organization, World Psychiatric Association, National Institute of Mental Health, National Institute on Drug Abuse, and National Institute on Alcoholism and Alcohol Abuse were consulted on its development.

Substance use and addiction nomenclature underwent substantive revisions in DSM-5 (O’Brien, 2010). The name of the major category *Substance-Related Disorders* found in DSM-IV-TR was changed to *Substance-Related and Addictive Disorders* in DSM-5 (American Psychiatric Association, 2013). A second revision involves the terms *abuse* and *dependence*. These terms are omitted in DSM-5 and in their place the term *substance use disorder* is used for separate classes of drugs. These disorders are rated on a severity continuum ranging from *mild* to *severe*. In addition, DSM-5 does not use the term *addiction* because of the ambiguities and negative connotations associated with it. A fourth DSM-5 revision is that *Substance-Related and Addictive Disorders* include one behavioral or *non-substance-related disorder*: gambling. This represents a significant change in that DSM-IV-TR classified pathological gambling as one of the *Impulse-Control Disorders Not Elsewhere Classified*. In DSM-5, *gambling disorder* is grouped with Substance-Related and Addictive Disorders.
Other non-substance-related disorders will be considered as potential future additions to the DSM’s Substance-Related and Addictive Disorders category as justified by an expanding research base.

The distinction between addiction and impulse-control disorders (ICDs) is also important to point out. This distinction can be confusing because some disorders, such as pathological gambling, have been referred to as both addictions and ICDs in different versions of the DSM. How are they different? Going forward, behavioral addictions such as gambling will be considered to be similar to substance addictions in that they both involve actions that generate pleasure. In contrast, ICDs will be thought to involve repetitious actions intended to reduce distress (Grant, Odlang, & Potenza, 2007). However, the line separating the hedonic features of behavioral addiction from the stress reduction features of ICDs may become blurred as the addictive activity becomes less pleasurable over time and motivated increasingly by a desire to escape from dysphoria (Grant, Potenza, Weinstein, & Gorelick, 2010). Therefore, it may be difficult to distinguish the two types of disorders in some cases.

**Evolution and Addiction**

The theory of evolution has been used primarily to explain biological changes in species. However, in the past decade or so, scientists who study the neurobiological basis of addiction have relied on it not only to explain alcohol and drug dependence, but addiction to non-substance-related behavioral processes as well. The key concept in the theory of evolution is that through a process of natural selection, species evolve by adapting to environmental challenges. Organisms that develop advantageous traits will be more likely to survive and therefore transmit their genetic information to offspring, compared to those failing to develop such traits. Thus, over time, fewer and fewer member organisms will survive with nonadvantageous traits, and their genetic contribution to the species will gradually diminish and disappear.

In the primitive human brain, neural networks are thought to have evolved to adapt to short-term survival and to increase the likelihood of reproduction. Life expectancy in the human ancestral environment (Pleistocene epoch) was relatively short and many adaptations are thought to have centered on reproduction, which led to increases in the size of the human population (Wall & Przeworski, 2000). Brain functions that today we consider beneficial for modern life, such as long-term planning functions and attention to long-term consequences, were much less relevant to survival in the Pleistocene Age. Thus, the forces of natural selection are thought to have fostered development of pleasure centers in the mesolimbic dopamine pathway of the brain to reinforce those behaviors most necessary.
for survival, such as eating food and having sex (see Figure 2.3 in Chapter 2). It is by evolutionary design, then, that these behaviors provide immediate rewards in the form of pleasure. The design also helps us understand why humans find it so difficult to resist the ubiquitous opportunities for immediate pleasure in the contemporary world.

In support of this evolutionary view of brain development, provocative research in the last decade suggests that gambling, eating, and having sex activate the same reward circuitry in the brain as do commonly used drugs (Corsica & Pelchat, 2010; Frascella, Potenza, Brown, & Childress, 2010; J. E. Grant, Brewer, & Potenza, 2006; Liu, von Deneen, Kobeissy, & Gold, 2010; Volkow & Wise, 2005). Unfortunately, in the contemporary world where opportunities for food, sex, drugs, and any number of other rewarding substances and behaviors are ever-present, the presence of these pleasure centers serve us less well than they did our early ancestors. Intended to promote human survival, the original design of the brain has been coopted or “highjacked” by the easy availability of modern pleasures. Moreover, the relentless introduction of computer software applications provides new temptations that may be potential objects of addiction; for example, Internet access from mobile devices, video gaming, texting, online gambling, online pornography, and so on (Dokoupil, 2012).

One way to think of addiction (of any type) is that it represents a modern-day malfunction of an adaptation that once served our ancestors well in a harsh environment. Unfortunately, there is little hope that the neural networks of our brains will adapt fast enough to keep pace with the developing technologies we find so attractive today. Thus, from an evolutionary point of view, we are all vulnerable—not only to alcohol and drug abuse, but to any number of activities, games, foods, etc., that evoke neural signals in the brain’s pleasure centers. For proponents of the behavioral addiction concept, this evolutionary perspective is a critical lynchpin in the argument for expanding the concept of addiction to non-substance-related activities (Linden, 2011). Believing that natural selection is responsible for the presence of brain pleasure centers unlocks them from viewing addiction as exclusively a problem of alcohol and other drug abuse.

However, narrow, reductionist explanations deeply rooted in neuroscience alone also raise challenging questions about the brain circuitry–behavioral addiction connection. For example, why are behavioral addictions not more widespread among humans? Why are they not the cross-cultural norm? How do people who regularly engage in hedonic pursuits manage to avoid developing problems? Questions such as these challenge the proposition that the evolution-designed brain is a sufficient basis for expanding the concept of addiction to include non-substance-related activities. This chapter critically examines controversies surrounding the concept of behavioral addiction.
If the concept of behavioral addiction becomes widely accepted in society, from time to time public figures will likely turn to it as a strategy for minimizing media ridicule and securing public forgiveness following disclosure of inappropriate or scandalous behavior. This function is akin to the notion of \textit{time out} (Heath, 1988); that is, a socially unacceptable action is excused because the actor was intoxicated by alcohol (see Chapter 9). In recent decades, a number of American public figures, primarily men involved in gambling and sex scandals, have put forth claims of behavioral addiction. Described here are brief stories of five well-known persons from the sports and entertainment industries, as well as the pastoral community, who have made public claims of behavioral addiction.

- **Wade Boggs, baseball player.** Wade Anthony Boggs was born on June 15, 1958 (National Baseball Hall of Fame, 2011). His 18-year major league baseball career was spent primarily with the Boston Red Sox. He was inducted into the Baseball Hall of Fame in 2005. \textit{Sporting News} (1998) ranked him 95th on their list of 100 greatest players in baseball history.

  In 1989, Boggs was at the center of a media-driven scandal involving his off-field activity (Swift, 1989). A female mortgage broker from California disclosed to the media that she’d had a 4-year extramarital affair with Boggs (who was married). After he broke off their relationship in 1988, the woman filed a $12 million lawsuit against Boggs for emotional distress and breach of oral contract. The woman claimed that Boggs had verbally agreed to compensate her for lost income and “services performed” while accompanying him on Red Sox out-of-town road trips during the baseball season. Boggs did not deny the affair, but mounted his own media campaign to defend his actions and to refute many of the woman’s claims about their relationship. At one widely reported meeting with the press, Boggs claimed that he was in recovery from the disease of sex addiction. His comments set off a media frenzy, and they remain a stain on his reputation today (Topkin, 2005).

- **David Duchovny, actor and director.** David William Duchovny was born August 7, 1960. He has appeared in a number of television shows and feature films during his acting career. He won Golden Globe awards for his television roles in \textit{The X-Files} and \textit{Californication}. In the latter television series, Duchovny played a journalist beset with conflicts often involving sex, alcohol, and drugs.

  In 2008, he entered a program for the treatment of sex addiction. There was considerable speculation in the entertainment world that Duchovny’s personal life and his role in \textit{Californication} could not be easily
distinguished from one another (Fisher, 2008; Marikar, 2011). Duchovny is believed to be the first celebrity from the entertainment world to specifically cite sex addiction as his motivation for seeking treatment.

- **Ted Haggard, evangelist pastor.** Ted Arthur Haggard was born June 27, 1956. He was founder and former pastor of a 14,000-member evangelical church in Colorado Springs, Colorado, and from 2003 to 2006 was leader of the National Association of Evangelicals (Associated Press, 2006). The latter position provided him with a national platform for promoting conservative Christian views on social issues, such as gay marriage and homosexuality.

  After being accused of participating in a 3-year cash-for-sex relationship with a male prostitute, Haggard was forced to leave his church position (Gorsky, 2007). The Denver man apparently was motivated to expose Haggard because the pastor had made public comments condemning homosexuality that the Denver man believed to be hypocritical (Associated Press, 2006). At the time, Haggard acknowledged being in the contact with the man, admitted to sexual “immorality” and to purchasing methamphetamine, but claimed he’d never used the drug. He subsequently entered a 12-step program for the treatment of sex addiction and later stated that although he is a recovering sex addict, he is not homosexual. According to Haggard’s website (http://tedhaggard.com; accessed September 1, 2012), he now leads a second church in Colorado Springs, Colorado.

- **Pete Rose, baseball player.** Peter Edward Rose was born April 14, 1941 (National Baseball Hall of Fame, 2011). He played major league baseball from 1963 to 1986, and managed professional teams from 1984 to 1989. He holds several major league baseball records, most notably as the all-time leader in career hits (4,256). Rose was named Rookie of the Year; played on three World Series Champion teams; won three league batting titles; once was named league Most Valuable Player; won two Gold Glove awards; and appeared in 17 Major League All-Star Games.

  Three years after he retired in 1989, Rose agreed to a permanent separation from major league baseball in an attempt to address accusations that he had violated league rules by gambling on baseball games as a player and as a manager of the Cincinnati Reds, including betting on games played by his own team. After many years of denying that he had bet on baseball, Rose (2004) confessed in a *Sports Illustrated* interview that he had indeed bet on baseball games as a player and manager. In the article, Rose claimed that he suffered from an addiction to gambling and reported receiving treatment for the problem. At the time, some speculated that Rose might have confessed in an attempt to sway public opinion about his ban from the Baseball of Hall of Fame, which continues to block his induction today, despite his outstanding baseball records. His ban from the Baseball Hall of Fame remains a controversial issue among sportswriters and fans (Heller, 2011).
Art Schlichter, football player. Arthur Ernest Schlichter was born April 25, 1960. He is a former college and professional quarterback well known for his troubled life resulting from his persistent involvement in theft and embezzling schemes to secure funding for his gambling activity. Schlichter was arguably the most celebrated high school quarterback in Ohio football history (MacGregor, 2000). He subsequently played at Ohio State University (1978–1981), where he was the last quarterback to play for legendary Coach Woody Hayes. He then joined the Baltimore/Indianapolis Colts in 1982 as the overall #4 selection in the National Football League rookie draft. As a result of his serious gambling and legal problems, Schlichter never lived up to his potential on the football field. He appeared in just one preseason game in 1986, in what would be his last year in the National Football League. The NFL Network (2011) rated Schlichter as the #4 “draft bust” in league history.

Schlichter has identified himself as a gambling addict for many years (Wagner, 2011). To finance his gambling activity, Schlichter estimated that he had stolen at least $1.5 million from friends and strangers by 2007. He was convicted of more than 20 felonies, mostly fraud and forgery convictions. From 1995 to 2006, he served 10 years in 44 jails and prisons across the Midwest. After prison, he may have owed as much as $500,000 in restitution to various parties. In 2009, Schlichter and his mother appeared on television in Ohio delivering political announcements in opposition to a statewide casino ballot issue. In March 2011, he was once again jailed on felony charges alleging that he had swindled a Columbus-area widow out of more than $1 million to support his gambling habit (Wagner, 2011).

Popular Claims and the Research Evidence

Today, gambling and sexual activities are not the only problems being defined as addictions. In popular culture as well as in some segments of the mental health treatment and self-help communities, a large number of behaviors that produces harm for self and/or others are now claimed to be addictions. The Internet is populated by websites that define and describe these problems in living and offer help, sometimes including 12-step recovery programs. However, these popular notions may be based more on pseudo-science than on evidence-based science.

We employed Shaffer’s (2009) three key diagnostic symptoms (noted previously) to evaluate involvement in harmful non-substance-related activities of abuse as possible behavioral addictions. In this diagnostic scheme, individuals experiencing problem behavior must possess attentional biases for craving-related stimuli (Smeets et al., 2009). This means that they must experience cravings when exposed to specific stimuli associated with the behavior, or the stimuli must trigger speeded detection, heightened engagement, greater sustained attention, or slower disengagement from the
stimuli. The second criterion is that the person with a potential behavioral addiction persists in maintaining the harmful activity even though he or she is penalized in some way for these actions. The third criterion is that the person believes that he or she is unable to refrain from future involvement in the activity.

In Table 10.1, we have summarized our comprehensive review of the scientific literature on 35 behaviors for which popular claims were found in the media and online describing the behavior as an addiction. We systematically reviewed studies for evidence supporting one or more of the three addiction criteria described here. To determine whether a specific investigation provided evidence supporting one or more diagnostic symptoms, we employed the following literature-based criteria:

1. The study was published in a peer-reviewed international or national scientific journal from 2000 to 2011.
2. The article reported results from a data-based study of more than one human subject.
3. The study employed a diagnostic interview or instrument to measure the target behavior as an addiction or dependency, or created an experimental condition to test a specific diagnostic symptom of behavioral addiction, such as cue reactivity.

We excluded studies that described the behavior as a correlate of substance abuse and those that described the behavior as an impulse-control disorder, rather than as an addiction.

The most striking feature of the results reported in Table 10.1 is that we found no evidence in the scientific literature supporting the application of the addiction concept to 25 of the 35 behaviors. Despite attention given to them in popular media, at this time there is little or no scientific basis for contending that many activities such as body piercing, passionate love and sex, extreme sports, and television watching are addictions, suggesting that the addiction concept has been applied much too broadly in popular culture. Of course, it is possible that some behaviors for which there exists no current scientific support may eventually be identified as an addiction. One example might be text messaging.

Our literature review found scientific support for no more than five possible behavioral addictions, based on Shaffer’s (2009) criteria. At this time, the strongest scientific support probably exists for gambling, followed by growing, but not yet compelling, support for Internet use (including social networking), video gaming, overeating, and skin tanning. Our observations are consistent with other literature reviews on behavioral addiction (e.g., Grant et al., 2010). We found that the scientific support for several other potentially harmful behaviors is accumulating, but is much less definitive at this time. Behaviors in this category include eating chocolate, exercising,
<table>
<thead>
<tr>
<th>Behavior</th>
<th>Published empirical research 2000–2011</th>
<th>Evidence supporting diagnostic symptoms of behavioral addiction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Exposure to specific cues activates aberrant psycho-physiological responses</td>
</tr>
<tr>
<td>Approval seeking</td>
<td>None found</td>
<td>—</td>
</tr>
<tr>
<td>Bathing and handwashing</td>
<td>None found</td>
<td>—</td>
</tr>
<tr>
<td>Biting nails (onychophagia)</td>
<td>None found</td>
<td>—</td>
</tr>
<tr>
<td>Body art (tattoos and piercings)</td>
<td>None found</td>
<td>—</td>
</tr>
<tr>
<td>Cosmetic (plastic) surgery</td>
<td>None found</td>
<td>—</td>
</tr>
<tr>
<td>Eating non-nutritive substances (pica)</td>
<td>None found</td>
<td>—</td>
</tr>
<tr>
<td>Exercise</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>Gambling</td>
<td>Yes</td>
<td>Eisenegger et al. (2010); Goudriaan (2010); He et al. (2010); Lawrence et al. (2009); Linnet et al. (2011); Paris et al. (2009); Potenza (2008); van Eimerem et al. (2010); Wulfert et al. (2009)</td>
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<thead>
<tr>
<th>Behavior</th>
<th>Published empirical research 2000–2011</th>
<th>Exposure to specific cues activates aberrant psychophysiological responses</th>
<th>Continued involvement in the behavior despite negative consequences</th>
<th>Perceived loss of control over the behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoarding (collecting junk)</td>
<td>None found</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>House cleaning</td>
<td>None found</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet use (including social networking)</td>
<td>Yes</td>
<td>Dong et al. (2010); Han et al. (2010); Munoz-Rivas et al. (2010); Zhou et al. (2011)</td>
<td>Aboujaoude et al. (2006); Bakken et al. (2009); Fu et al. (2010); Kim et al. (2010); Munoz-Rivas et al. (2010); Tao et al. (2010)</td>
<td>Aboujaoude et al. (2006); Bakken et al. (2009); Fu et al. (2010); Munoz-Rivas et al. (2010); Tao et al. (2010)</td>
</tr>
<tr>
<td>Kleptomania (stealing items not needed for personal use)</td>
<td>None found</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Lip balm use</td>
<td>None found</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Mobile (cell) phone use</td>
<td>Yes</td>
<td></td>
<td>Chóliz et al. (2009); Toda et al. (2006)</td>
<td>Chóliz et al. (2009); Toda et al. (2006)</td>
</tr>
<tr>
<td>Overeating (binge-eating disorder/food addiction)</td>
<td>Yes</td>
<td>Castellanos et al. (2009); Fedoroff et al. (2003); Nijs et al. (2010a, 2010b); Sobik et al. (2005); Svaldi et al. (2010)</td>
<td>Castellanos et al. (2009); Gearhardt et al. (2009); Nijs et al. (2010a, 2010b); Svaldi et al. (2010)</td>
<td>Gearhardt et al. (2009)</td>
</tr>
<tr>
<td>Passionate love and stalking</td>
<td>None found</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prayer and other religious rituals</td>
<td>None found</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pyromania (fire-setting)</td>
<td>None found</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior</td>
<td>Published empirical research 2000–2011</td>
<td>Evidence supporting diagnostic symptoms of behavioral addiction</td>
<td></td>
<td></td>
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<tr>
<td>-----------------------------------------------</td>
<td>----------------------------------------</td>
<td>---------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exposure to specific cues activates aberrant physiological responses</td>
<td>Continued involvement in the behavior despite negative consequences</td>
<td>Perceived loss of control over the behavior</td>
</tr>
<tr>
<td>Risky behavior (including extreme sports)</td>
<td>None found</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Satan (devil) worshipping</td>
<td>None found</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Self-mutilation</td>
<td>None found</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Sexual activity (including cybersex and pornography)</td>
<td>None found</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Skin tanning</td>
<td>Yes</td>
<td>—</td>
<td>Harrington et al. (2011); Mosher &amp; Danoff-Burg (2010); Poorsattar &amp; Hornung (2007); Warthan et al. (2005); Zeller et al. (2006)</td>
<td>Harrington et al. (2011); Mosher &amp; Danoff-Burg (2010); Poorsattar &amp; Hornung (2007); Warthan et al. (2005); Zeller et al. (2006)</td>
</tr>
<tr>
<td>Speeding (while driving a vehicle)</td>
<td>None found</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Sweet (high-sugar) foods</td>
<td>None found</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Television watching</td>
<td>None found</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Text messaging</td>
<td>None found</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Transvestism (cross-dressing)</td>
<td>None found</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Trichotillomania (hair pulling)</td>
<td>None found</td>
<td>—</td>
<td>—</td>
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</tr>
</tbody>
</table>

(continued)
We further investigated the five putative behavioral addictions identified here to determine (1) their prevalence in the population and (2) their co-occurrence with other mental health and substance abuse problems. The results in Table 10.2 reveal that prevalence data for each of the five behavioral addictions are rather limited, and within each behavior there can be considerable variation in rates depending upon age, sex, and country of residence. For example, in Canada, rates of gambling addiction appear to be

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Evidence supporting diagnostic symptoms of behavioral addiction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exposure to specific cues activates aberrant psychophysiological responses</td>
</tr>
<tr>
<td>Vandalism</td>
<td>None found</td>
</tr>
<tr>
<td>Video gaming</td>
<td>Yes</td>
</tr>
<tr>
<td>Violence (including military combat)</td>
<td>None found</td>
</tr>
<tr>
<td>Work (workaholism)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Note. Diagnostic symptoms for behavioral addictions are based on a modified operational definition proposed by Shaffer (2009). The criteria for identifying published empirical research include the following: (1) study published in a peer-reviewed international or national scientific journal from 2000 to 2011; (2) article reported results from a data-based study of more than one human subject; (3) study employed a diagnostic interview or instrument to measure the target behavior as an addiction or dependency, or created an experimental condition to test a specific diagnostic symptom of behavioral addiction, such as cue reactivity. Studies were excluded if the problem behavior was described as a correlate of substance abuse or as an impulse-control disorder (i.e., not as an addiction).
<table>
<thead>
<tr>
<th>Behavioral addiction</th>
<th>Addiction prevalence rates in adolescents/young adults</th>
<th>Addiction prevalence rates in adult populations</th>
<th>Co-occurring mental health and substance use problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gambling</td>
<td>Canada: 4.5% among girls (15–19 years old) who had gambled at least once in past 12 months; 12.4% among boys in same group (Afifi et al., 2010a)</td>
<td>Canada: 22.7% among women (30–39 years old) who had gambled at least once in past 12 months; 21.7% among men in same group (Afifi et al., 2010a)</td>
<td>Substance abuse, nicotine dependence, personality disorders, anxiety disorders, mood disorders, suicidal ideation (Afifi et al., 2010b; Barry et al., 2011a, 2011b; Park et al., 2010b; Petry et al., 2005b)</td>
</tr>
<tr>
<td></td>
<td>Korea: 0.8% (Park et al., 2010b)</td>
<td>United Kingdom: 11.1% (McBride et al., 2010)</td>
<td></td>
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<tr>
<td></td>
<td>United States: 0.42% (Petry et al., 2005b)</td>
<td>United States: 0.22% (McBride et al., 2010)</td>
<td></td>
</tr>
<tr>
<td>Internet use</td>
<td>Hong Kong: 6.7% among 15- to 19-year-olds (Fu et al., 2010)</td>
<td>Norway: 1.0% (Bakken et al., 2009)</td>
<td>Anxiety disorders, depression, sleep disorders, substance abuse, suicidal ideation (Bakken et al., 2009; Fu et al., 2010)</td>
</tr>
<tr>
<td>(including social</td>
<td>Norway: 4.1% among 16- to 29-year-old boys and men (Bakken et al., 2009)</td>
<td>United States: 0.7% (Aboujaoude et al., 2006)</td>
<td></td>
</tr>
<tr>
<td>networking)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overeating (binge-</td>
<td>United States: 11.7% among students attending a Northeastern private university (Gearhardt et al., 2009)</td>
<td>Brazil: 11.5% among women 35 years of age and older (de Freitas et al., 2008); Europe: 1.92% among women and 0.26% in men (Preti et al., 2009)</td>
<td>Substance abuse, depression, anxiety disorders (Grilo et al., 2009; Preti et al., 2009)</td>
</tr>
<tr>
<td>eating disorder/food</td>
<td></td>
<td>United States: 2.7% among residents of Olmsted County, Minnesota (Cremonini et al., 2009); 11.0% among pre- and early perimenopausal women (Marcus et al., 2007)</td>
<td></td>
</tr>
<tr>
<td>addiction)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin tanning</td>
<td>Boston and Minneapolis, United States: 31.5% among girls (14–17 years old); 6.9% among same-age boys (Zeller et al., 2006)</td>
<td>None found</td>
<td>None found</td>
</tr>
</tbody>
</table>

(continued)
substantially greater in adults (22%) than in adolescents and young adults (4.5–12.4%). In contrast, rates of Internet and video gaming addiction may be greater in young people, and a sex difference can be observed in addiction to skin tanning. One consistent and important finding is that with the exception of skin tanning, the activities identified as behavioral addictions appear to co-occur with other problems such as depression, anxiety, and substance abuse. Prevention and treatment strategies need to anticipate the clustering of these problems within affected individuals.

**Free-Market Drivers of Excessive Consumption and Hedonic Pursuits**

Our contemporary society has been negatively characterized as a consumption-based culture focused on immediate gratification (Bryant-Jeffries, 2001; Gitlin, 1990). All manner of products and services are marketed to consumers who have available to them a large number of hedonic attachments and activities, which are often affordable, that can facilitate adoption of maladaptive behavior. Although it may be simplistic to claim that a toxic social environment is the cause of excessive consumption, we certainly must recognize that our free-market economy supports and accentuates a myriad of problems that may be defined as behavioral addiction. In his analysis of the social consequences of globalization, Alexander (2001) goes even further to say that “addiction is mass produced in free market society” (p. 2). In this section, we provide an overview of the

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**TABLE 10.2. (continued)**

<table>
<thead>
<tr>
<th>Behavioral addiction</th>
<th>Addiction prevalence rates in adolescents/young adults</th>
<th>Addiction prevalence rates in adult populations</th>
<th>Co-occurring mental health and substance use problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video gaming</td>
<td><strong>Germany</strong>: 3.0% among ninth-grade boys; 0.3% among same-grade girls (Rehbein et al., 2010); <strong>Netherlands</strong>: 3.0% among 13- to 16-year-olds (van Rooij et al., 2011) <strong>United States</strong>: 8.5% among youth ages 8 to 18 who play video games (Gentile, 2009)</td>
<td><strong>Norway</strong>: 2.2% among 16- to 74-year-olds (Wenzel et al., 2009)</td>
<td>Lower school achievement, increased truancy, reduced sleep time, limited leisure activities, suicidal ideation, substance abuse (Rehbein et al., 2010; Wenzel et al. 2009)</td>
</tr>
</tbody>
</table>

*Note. Studies limited to those assessing population prevalence using a probability sampling procedure.*
contemporary free-market and social conditions that support five putative behavioral addictions. Internet access is a significant support for three of these activities: gambling, Internet use (including social networking), and video gaming.

**Gambling**

Legal gambling is a big business today. In the United States, the state-regulated gambling (gaming) industry is comprised of approximately 500 casinos, 400 Native American casinos and bingo halls, and 40 state-sponsored lotteries (Hoover’s, 2011). Together, these legal operations generate about $80 billion in revenue each year. In 2010, commercial casinos accounted for $34.6 billion of this annual revenue, paid $7.59 billion in local and state taxes, and provided employment to 340,564 people (American Gaming Association, 2011). Offering some perspective on entertainment preferences, one should note that Americans spent 3 times more money at casinos than at movie theaters in 2010! In a national poll commissioned by the American Gaming Association (2011), 31% of Americans reported that they had visited a casino at least once in the past year, and 25% had gambled at these locations. According to this same organization, the top five states for casino-generated consumer spending in 2010 were Nevada ($10.4 billion), New Jersey ($3.6 billion), Indiana ($2.8 billion), Pennsylvania ($2.5 billion), and Mississippi ($2.4 billion).

**Internet Use**

Internet access is now an expectation of most Americans and part of their daily routine. In 2010, 79% of Americans 18 years of age and older reported that they had Internet access (U.S. Census Bureau, 2011). Broken down by age, 95% of 18- to 29-year-olds indicated that they had Internet access, followed by 30- to 49-year-olds (87%), 50- to 64-year-olds (64%), and those 65 years of age and older (42%). American men and women report equal access to the Internet, and racial/ethnic differences are now relatively small, though African Americans are somewhat behind Hispanics and European Americans. Educational attainment and income disparities do appear to persist in Internet access. For example, in 2010, 96% of college graduates indicated that they had Internet access versus only 52% of persons with less than a high school degree. Americans with annual incomes of $75,000 or more were more likely to report Internet access (95%), than those who earned less than $30,000 (63%). The four most common Internet activities are using e-mail, followed by using a browser to search the internet, checking weather reports and forecasts, and obtaining news (U.S. Census Bureau, 2011).
Mobile devices, such as smartphones and tablet computers, are expected to become the preferred platform for accessing the Internet in the near future. In April/May of 2011, the Pew Research Center found that 35% of American adults owned a smartphone (Smith, 2011). Men were somewhat more likely (39%) than women (31%) to be smartphone owners. On a typical day, 68% of owners used their phone to access the Internet or e-mail. Early adopters of smartphones tended to be those with higher incomes, college-educated, under the age of 45, identified themselves as African American or Hispanic, and resided in suburban or urban areas. Among these factors, income seemed to be the most predictive of smartphone ownership: 73% of persons with household incomes of $150,000 or more owned such a phone, compared to just 21% of persons with household incomes below $10,000 (Smith, 2011).

**Overeating: Binge-Eating Disorder and Food Addiction**

Among Americans 20 years of age and older, 35.5% of women and 32.2% of men were estimated to be obese in 2007–2008 (Flegal, Carroll, Ogden, & Curtin, 2010). These U.S. prevalence rates represent an 8 percentage point increase over the level of obesity that had existed during the period of 1976–1980. This trend is a major public health concern because obesity is a risk factor for chronic medical problems such as diabetes, hypertension, elevated cholesterol, stroke, heart disease, arthritis, and some cancers (Malnick & Knobler, 2006). Equally alarming are the health care costs attributable to obesity. These costs are shared by all citizens whether obese or not. For example, in the United States, obese patients in the health care system incur 46% increased inpatient costs, 27% more physician visits and outpatient costs, and 80% increased spending on prescription drugs, compared to normal-weight patients (Finkelstein, Trogdon, Cohen, & Dietz, 2009). It has been estimated that in 2006, an extra $146 billion in annual medical expenditures were attributable to obesity, and the condition accounted for 7–11% of national medical spending (Trogdon, Finkelstein, Feagan, & Cohen, 2012).

In their explanations of the modern obesity epidemic, policy researchers have come to describe developed countries as *obesogenic* environments (Butland et al., 2007; Swinburn et al., 2011). *Obesogenic* refers to social conditions that have made overeating and obesity normal biological conditions. The major alterations in societal work conditions, daily transportation, and the production, distribution, and sale of food have made obvious the human biological tendency to gain weight under sedentary living conditions. Through natural selection, our metabolic systems evolved to allow us to engage in sustained vigorous physical activity needed to survive in the human ancestral environment. In this view, individuals are not particularly
gluttonous or lazy today, but rather have a biological system for weight maintenance that is no longer in sync with modern lifestyles.

The global obesogenic environment is thought to have become pervasive during the past 30 years or so (Swinburn et al., 2011). The primary drivers of this environment are within the food production and distribution system, including the increased supply of inexpensive, palatable, and energy-dense foods; greatly improved food distribution systems that make it easy to obtain foods; and industry marketing practices that have been persuasive in leading people to increase their energy intake beyond energy needs (Butland et al. 2007). Additional drivers include modern jobs that do not require vigorous physical activity; heavy reliance on motor vehicle transportation rather than walking and other forms of transport that require physical effort; leisure and recreational activities devoted to television watching, computer use, video games, and other sedentary pursuits; and government failure to recognize and address these basic societal changes (Swinburn et al., 2011).

Skin Tanning

American consumers spend a large amount of money on indoor tanning services, on products to reduce skin cancer risks related outdoor sun exposure, and on products to treat skin damage caused by sun exposure. The indoor tanning industry provides services to consumers at on-premise salons. The sun care products industry sells three types of over-the-counter products from retail outlets: sun protection, self-tanning, and after-sun skin repair. These services and products are used to expose consumers to, and protect them against, ultraviolet (UV) radiation from both the sun and artificial sources, such as tanning beds and sun lamps. There is no question that UV radiation, from any source, including indoor tanning facilities, increases risk for cancer (Karagas, 2002; Lazovich et al., 2010; National Toxicology Program, 2011; International Agency for Research on Cancer Working Group on Artificial Ultraviolet [UV] Light and Skin Cancer, 2007; Whitmore, Morison, Potten, & Chadwick, 2001).

In 2010, it was estimated that the U.S. indoor tanning industry generated $4.7 billion in revenue from 21,841 salons that employed 100,130 persons (IBIS World, 2011). More than 1 million consumers are believed to obtain tanning services at retail salons each day in the United States (Whitmore et al., 2001). Tanning salon patrons are predominately white girls and women, ages 16–29 years. Due to increasing public concern about skin cancer, coupled with an unwavering consumer demand for a “tanned look,” the global market for sun care products (excluding indoor tanning services) is expected to grow to $5.6 billion by the year 2015 (Global Industry Analysts, 2010). Most of this growth will occur in the United States and Europe.
**Video Gaming**

In 2011, the video game industry was expected to generate $74 billion in worldwide sales, representing a $7 billion increase in sales from the year before (Biscotti et al., 2011). The video game industry is expected to continue to grow rapidly in the coming years, and it may exceed $112 billion in sales by 2015 (Biscotti et al., 2011). The fastest growing sector of the market is mobile gaming, which is the preferred platform among young gamers.

According to an industry source (Infogen, 2011), the average video game player is now 34- to 35-year-old who has been playing these games for about 13 years. Contrary to popular belief, males do not strongly dominate this market. It is estimated that 40% of video gamers are women. Also, older persons represent a growing segment of the video game market. In 2008, 26% of Americans over the age of 50 played video games.

Video games are now a prominent and accepted feature of family life in many parts of the world. They are present in 67% of American households. In 2007, 85% of all video games sold were rated “E” for everyone, “T” for teen, or “E10+” for everyone 10 or more years of age. Almost two-thirds of parents (64%) believe that video games are a positive part of the lives of their children (Infogen, 2011).

**Challenges to Redefining Pleasurable Activities as Behavioral Addiction**

Obviously, the market conditions described here exist because of our inborn drive for pleasure. This is a universal human experience. Motivation, learning, and even survival are based, at least in part, on the experience of pleasure. Various forms of pleasure motivate us to engage in a wide range of behavior, including eating, drinking, having sex, gambling, working, engaging in recreation, serving others, etc. (Linden, 2011). Different forms of learning—ranging from academic to social—are shaped by rewards involving pleasure. Of course, sexual pleasure is integral to human reproduction—ensuring that our species produces future generations.

However, individuals and societies have long been conflicted about the experience of pleasure, producing a fear of succumbing to hedonistic pursuits perhaps because they are an ever-present distraction from the often mundane or tedious routine of daily existence (Shaw, 1996). Thus, through the centuries all cultures have developed legal codes, religious doctrine, and social customs to restrict access to and regulate pleasurable activity deemed immoral conduct. Interested readers should acquaint themselves with St. Augustine’s Christian treatise “On the Good of Marriage” (Kearney, 1999), as well as passages in Chapter Four of the *Holy Qur’an* (An-Nisaa, Verse 15) for notable historical examples of doctrine warning against sexual pleasure. In the modern era, societal concerns about pleasurable activities have
focused heavily on restricting youth access to them. Zimring (1998) noted that those pleasures about which adults are most ambivalent or conflicted, are those we tend to quickly prohibit our teenage children from partaking in (e.g., smoking, alcohol use, gambling). The cross-cultural ambivalence about pleasure has been recognized by Linden (2011), who notes that the following ideas and conventions exist in all societies:

1. Seek pleasure in moderation;
2. It is important to earn pleasure;
3. Naturally achieved pleasures are more acceptable;
4. Pleasurable activities should be transitory; and
5. Spiritual growth can be aided by the denial of pleasure. (p. 3)

Despite findings from a growing number of neurobiological studies suggesting that substance addictions and behavioral addictions arise from a common neurobiological substrate (e.g., Frascella et al., 2010), their interpretation does not necessarily lead to the conclusion that so-called behavioral addiction represents a mental disorder. In their argument, neurobiological researchers argue that in the contemporary world, there has been a commandeering or overriding of the pleasure circuitry in the brain; that is, addiction is simply a malfunction of a specific neural network originally designed for our ancestral environment. Such an explanation can be considered a classic example of methodological reduction in science (Bechtel & Richardson 1993). This is the idea that biological systems are best studied at the lowest possible scientific domain and that the benefits of science are maximized by discovering causes at the molecular and chemical level. The longstanding argument against this exclusively reductionist approach to science is that by setting aside multilevel analyses, which may include higher-level environmental, social, and psychological factors, the risk of systematic bias in research is increased. This bias may obscure our understanding of phenomena under study. As applied to behavioral addictions, the basic question is whether these problems in living can be adequately explained as well as treated by concepts, explanations, and methods derived almost exclusively from neurobiological research?

As noted in Chapter 3, there is often a collision of views about how to improve the health of human populations (see Figure 3.1). On one side is the traditional biomedical approach, which often favors biological reductionism and focuses on the characteristics of individuals and access to medical treatment as the primary determinants of health status. On the other side is the approach of the progressive public health movement, which arises from a collectivist social philosophy that is more holistic and ecological, focusing on multilevel determinants and interventions (Galea, Riddle, & Kaplan, 2010; Huang, Drewnowski, Kumanyika, & Glass, 2009; McKinlay & Marceau, 2000). Progressive public health proponents are skeptical
of using evidence, limited largely to molecular biology research, to reduce problems in living to mental disorders by describing them in new psychiatric nomenclature as *behavioral addictions*. The concern is that by medicalizing such problems, we fail to recognize the larger system of contributing causal factors that are “upstream” from a manifest case of behavioral addiction. For instance, many of the activities now being considered for classification as behavioral addictions are mediated by rapidly developing computer software applications (gambling, video gaming, texting, pornography, etc.). Such diverse forces as engineering advances in integrated circuits, business marketing strategies, and social diffusion of innovations, which influence the introduction, adoption, and impact of computer “apps,” would be among the many upstream, indirect determinants of these behavioral problems from a multilevel, systems perspective.

In addition, serious questions can be raised about the less obvious social functions of promoting the behavioral addiction concept. A useful framework for analyzing the social consequences of an expanded definition of addiction is to apply the notions of manifest and latent functions, as described by the distinguished American sociologist Robert K. Merton (1910–2003). In regard to the aims of social actions, Merton (1968) believed that there were two types of distinctive forces in operation in society. **Manifest** functions are those consequences of social action that people expect to occur and are communicated by those participating in the same action. In contrast, **latent** functions are those social consequences that are not intended or recognized by the parties involved in introducing, implementing, and carrying out the action. The intention of manifest functions is obvious and explicitly stated by proponents, whereas latent functions require interpretation that goes beyond the motives recognized and expressed by its proponents. In many cases, manifest functions are supported by propaganda; that is, employing a set of justifications for action that perhaps may be ahead of compelling evidence, or as Gambrill (2010) defines it, “encouraging beliefs and actions with the least thought possible” (p. 302). In her analysis of helping professions, Gambrill contends that the propaganda of the movement to expand the application of psychiatric diagnoses (including behavioral addiction) to an ever-greater range of human activity serves to reduce the challenges and complexities faced by practitioners. For example, critical thinking about the problems presented by a client becomes unnecessary and uncertainties about prospects for insurance reimbursement (for services rendered) are diminished. Furthermore, the introduction of new psychiatric nomenclature offers practitioners “ready-made opinions for the unthinking. . . . It decreases anxiety and prevents confusion about ‘what to think.’. . . . It allows us to identify with the heroes of society. It provides group belonging” (Gambrill, 2010, p. 307). The seductive and dangerous aspect of helping profession propaganda is that it can create a world view in which practitioners believe their toolkit is adequate for addressing the
problems they face, or, as Ellul (1965) observed, “It permits him [or her] to participate in the world around him [or her] without being in conflict with it” (p. 159).

Now, it is obvious that in expanding the concept of addiction, the manifest purpose of helping professions, such as the American Psychiatric Association, is to extend and improve care for groups of sufferers who are underserved in the current health care system. Indeed, the president of the American Psychiatric Association notes that DSM-5 will assist clinicians with making more useful diagnoses (Bernstein, 2011). Of course, this is a commendable aim. However, another distinguished psychiatrist, in commenting on the prospect of DSM-5 including behavioral addiction as a psychiatric disorder, argues: “In a statistical sense, it is completely ‘normal’ for people to repeat doing fun things that are dumb and cause them trouble. This is who we are. It is not mental disorder or ‘addiction’—however loosely these much freighted terms are used” (Frances, 2010).

We should not ignore the social consequences of redefining addiction and not be naïve about claims made by helping professions (Conrad, 2007; Gambrill, 2010). Analysis of the larger societal context suggests that there is a number of latent or unintended functions associated with officially recognizing the diagnosis of behavioral addiction. First, the culture of psychiatry and mental health treatment will be further infused into everyday life. Questions can be raised about whether this infusion operates to reduce the influence of other value and belief systems informed by different ethical, philosophical, or religious principles. Are the so-called behavioral addictions medical/psychiatric conditions or simply foolish indulgences? Does redefining a problem in living as a behavioral addiction help persons avoid the moral dilemmas arising from their problem behaviors? If so, is it a benevolent goal in service of the person labeled an addict?

Second, expanding the definition of addiction will significantly extend the authority of mental health professions to determine the boundary between normal and abnormal human behavior (Horgan, 2011). Is it wise to leave the boundary line to a relatively small group of experts? Will these experts shrink the range of normality? Will they become promoters of social conformity? How will they apply the notion of personal responsibility in arriving at their clinical judgments?

Third, official recognition of the behavioral addiction concept will inevitably lead to the demand for funds to support research to investigate the problem. Given that these funds are a finite resource, is behavioral addiction an important future direction for research investment? Will it become a research priority with potential for draining money away from other critical lines of inquiry? Skeptics argue that many of the putative behavioral addictions are trivial in their consequences, as compared to alcohol and drug dependence, and thus have potential to divert attention from higher-priority substance abuse problems. On the opposite side of
the debate, proponents of the concept argue that enhancing research into behavioral addiction has the promising prospect of discovering new “crossover” medications that can effectively treat both substance addictions and non-substance-related addictions (Frascella et al., 2010).

**Legal and Health Care Implications of Defining Behavioral Addictions as Medical Conditions**

The legal system in the United States has been built largely on the doctrine that the conduct of individuals is freely chosen (Colasurdo, 2010). *Mens rea*, or the intent to commit a prohibited act, is a major component of individual responsibility in this system (Mack, Frances, & Miller, 2005). With the introduction of problematic gambling as a behavioral addiction in the fifth edition of the DSM, a host of contentious questions will likely arise about the legal and social implications of redefining compulsive, non-drug-related, problem behaviors as medical conditions (Frances, 2010). The central issues in this debate will focus on colliding beliefs about the legal doctrine of intent. Arguments will divide persons on matters of personal responsibility for which blame can be assigned and on whether intense cravings and perceived loss of control truly represent medical conditions (Shaffer, 2009). At issue: Under what conditions, and to what extent, will conditions referred to as *behavioral addiction* mitigate personal responsibility? Clearly, an expanded definition of addiction offers the prospect of extending help to many persons who need assistance. However, new social problems may be created by recognizing these new disorders (Gambrill, 2010).

One concern of critics is that expanding the definition of addiction has potential to create “false epidemics” (Miller & Holden, 2010, p. 771). This concern is not based on conjecture. The front-page news story on a recent issue of *Newsweek* (December 5, 2011) read: “The sex addiction epidemic. It wrecks marriages, destroys careers, and saps self-worth. Yet Americans are being diagnosed as sex addicts in record numbers. Inside an epidemic.” Frances (2010), a distinguished psychiatrist who chaired the American Psychiatric Task Force that developed DSM-IV, worries that during its history, psychiatry has gradually, but consistently, spread its purview. In the first official diagnostic system for the United States, developed in the mid nineteenth century, there were six diagnoses intended to be used mostly for inpatients. Now we have close to three hundred mental disorder diagnoses covering all sorts of problems that straddle the boundary of normal. The “behavioral addictions” would be another great leap forward pushing mental disorder into the shrinking realm of normality. Eventually having one, or several, mental disorders would become the new normal. (p. 2)
Colasurdo (2010) asserts that, if the legal system were to recognize behavioral addiction as a medical disorder, the impact would be greatest in three areas: employment and disability law, family law, and criminal sentencing. The Americans with Disabilities Act (1990) prohibits employer discrimination against qualified individuals “on the basis of disability in regard to job application procedures, the hiring, advancement, or discharge of employees, employee compensation, job training, and other terms, conditions, and privileges of employment” (Section 12112). Although the Americans with Disabilities Act expressly excludes compulsive gambling, substance abuse disorders, and a number of other mental health problems as disabilities, there appears to be little in the law that prohibits broadening the category of qualified disability, and thus successful claims of workplace discrimination based on behavioral addiction could possibly occur in the future. In family law, acceptance of behavioral addiction as a medical disorder could affect divorce and child custody decisions (Colasurdo, 2010). Claims by one spouse against another spouse could allege that a behavioral addiction impaired the partner’s ability to be a suitable mate or impaired his or her ability to function as a parent. In criminal sentencing, defendants could be given reduced sentences if they were found to be suffering from a reduced mental capacity because of a behavioral addiction (Colasurdo, 2010). For instance, might a person charged with soliciting prostitution or rape claim he or she suffers from sex addiction? Or a person faced with theft charges contend that he or she is disabled by an addiction to shopping?

Other concerns about expanding the definition of addiction to non-drug-related behaviors focus on the health care system and the possibility that it would increase costs. A major fear is overidentification of “addicted” patients needing treatment. What proportion of overweight patients would be diagnosed by their physicians as food addicts? Would the large number of persons who work long hours need treatment for workaholism? Some psychologists are not alarmed by the prospect of recognizing behavioral addiction, contending that its prevalence is probably underestimated in society, and actually speculate that “addiction is a natural state of affairs as a human being” (Sussman, Lisha, & Griffiths, 2011, p. 46).

Concerns also focus on the enterprising nature of pharmaceutical companies and the likely scenario that they would turn their attention to developing and marketing new medications to aid physicians in treating these “medical conditions” (Horgan, 2011). This advertising practice has become widely known as disease mongering (Moynihan, Heath, & Henry, 2002; Payer, 1992). It is not difficult to imagine the pharmaceutical industry pitching new medications for hypersexuality or binge eating. Of course, the net effect of directing resources to these newly discovered addictions would be to add costs to our society’s already overly expensive health care system.
Recognition of behavioral addiction in DSM-5 by the American Psychiatric Association will not resolve the controversy about expanding the concept of addiction to include non-substance-related problem behaviors. Adoption of the concept of behavioral addiction will elicit new debates about where to draw boundaries between normal and abnormal behavior, and about how far we should go in applying the medical model to the classification of human behavior. Of course, the controversy will also invite new clashes between law and psychiatry over matters of personal responsibility and who gets to make decisions about blameworthiness and culpability. Concept expansion would seem to have potential for adding to the costs of health care and open new markets for the pharmaceutical industry that some will argue are more exploitative than curative.

Considerable scrutiny will likely be given to the standards of evidence used by the American Psychiatric Association in the future to consider candidate behaviors for addition to the behavioral addiction category. Neither should we expect that multidisciplinary interpretation of the research evidence will produce incontrovertible conclusions that resolve the controversy. There will continue to be opposition to extending the concept beyond substance (alcohol and drug) addictions and there will be opposition to extending it beyond pathological gambling (the problem behavior with the most support in the neurobiological literature). Many critics, including quite a number within the mental health professions, will contend that defining non-substance-related activities as addiction amounts to trivializing the serious problems of alcohol and drug dependence. At the same time, there will likely be mental health professionals and groups and a self-help community that will lobby in different ways for a continually expanding concept of behavioral addiction. They will contend that the science is adequate for expanding the concept; that a knowledge base in support of it will only grow further with time; and that many additional needy persons will seek treatment as a result of recognizing behavioral addiction. Indeed, the history of the DSM suggests that the general psychiatric nomenclature expands rather than contracts with the passage of time.

**REVIEW QUESTIONS**

1. In the past decade or so, which features of addiction have been given more emphasis and which have been being deemphasized?

2. According to Shaffer (2009), what are the three primary features of behavioral addiction?
3. What substance abuse and addiction-related changes are included in DSM-5?

4. Why did the human brain evolve in such a way that it includes pleasure centers?

5. What is the range of non-substance-related behaviors that has been claimed to be addictive? Which of these claims are supported by at least some scientific evidence?

6. What are the free-market drivers of gambling, Internet use, overeating, skin tanning, and video gaming?

7. When evaluating the scientific evidence supporting behavioral addiction, why might it be a problem to rely exclusively on neurobiological research?

8. What are important challenges to the concept of behavioral addiction?

9. What are the negative legal and health care implications of adopting the concept of behavioral addiction?

10. Does the current scientific evidence support the behavioral addiction concept? Or is it largely a view based on propaganda as defined by Gambrill (2010)?
There are clear distinctions among the theories of addiction reviewed in this book. Explanations differ with respect to the etiology, maintenance, and prevention and treatment of addiction. A commonality across these theories is that addiction is what Heather (2005) characterizes as a *disorder of motivation*. More specifically, addictive behaviors are manifestations of an abnormality in the motivational system (West, 2006). West describes this system as the “forces that energise and direct our actions” (p. 7) in the present moment (see www.primethory.com). These forces encompass internal influences (e.g., physiological and affective states, cognitive constructions such as values) and external influences (e.g., environmental factors, including people). It follows that a disorder, abnormality, or disruption in the motivational system, due to the effects of addiction, is incapacitating; it prevents the person from responding in the moment and autonomously to internal and external influences in healthy ways.

Human motivation has been studied scientifically for over 100 years. According to Bernard, Mills, Swenson, and Walsh (2005), the earliest theories of motivation focused on the biological aspects of human behavior, including instinct. The next generation of theories defined motivation in strictly behavioral terms, as an automatic process shaped by environmental influences and satisfying basic organismic requirements such as hunger and sleep. More recent theories of motivation attribute behavior to specific cognitive processes such as expectancies, values, self-concepts of ability (e.g., self-efficacy), and future time orientation (e.g., goal theory). One of these theories, self-determination theory (SDT; Deci & Ryan, 2002; Ryan & Deci, 2000), assumes that humans are growth-oriented organisms who pursue behavior to satisfy the three basic and universal needs of...
autonomy, competence, and relatedness or belonging. It is SDT that distinguishes between autonomous motivation and controlled motivation, the former defined as self-governing and intrinsically regulated behavior that expresses and is consistent with one’s values. Controlled motivation, by contrast, is contrived behavior that is often regulated by extrinsic forces such as laws and rules, social approval, and economic security. According to SDT, psychological well-being is the product of intrinsically motivated and autonomous behavior. We return to this theory later in the chapter.

According to Ainslie (1992), none of the major theories of motivation explains addictive behaviors in an adequate fashion. A multidimensional concept of motivation is therefore indicated, one that can account for, or explain, the broad reach of addictive behaviors, including biology and physiology (e.g., genetics, craving states), specific observable behaviors (e.g., self-administration of a drug), cognitive processes (e.g., expectancies), and emotion. Bernard et al.’s (2005) evolutionary theory of human motivation is multidimensional and incorporates many of the constructs that pertain to addictive behaviors. It defines human behavior as purposeful and ultimately oriented to the survival of one’s genes, what the researchers refer to as inclusive fitness. This evolutionary perspective, distinctive among the theories of motivation, specifies 15 purposeful behaviors that may be useful in understanding addictions (e.g., curiosity, safety, play, meaning). However, Bernard et al.’s evolutionary theory may be too comprehensive to explain the particularities of addictive behaviors.

Specific to theories of addiction is West’s (2006) multidimensional or synthetic theory of motivation, one he refers to as PRIME theory (PRIME is the acronym for its five primary components). This model assumes that the human motivational system operates at the levels of Plans (conscious mental representations of future actions), Responses (or reflexes), Impulses and inhibitory forces (e.g., urges, emotional states), Motives (experienced as desires, wants, and needs), and Evaluations (or evaluative beliefs). Although praised for its common sense (Redvers, 2007), the PRIME theory may be too simplistic; it also may be too broad or inclusive to account for the vicissitudes of addictive behaviors. However, it is useful in its description of a motivational system applicable to addictions, and it does centralize the role of motivation in understanding addictions.

The evolution and integration of theories of human motivation have contributed to the development of approaches to the prevention and treatment of substance use problems that target motivational processes, including more autonomous or self-governing behaviors. These include the transtheoretical model (TTM) and its stages of change dimension, motivational interviewing (MI), and, as mentioned earlier, SDT. We describe each of these three approaches in this chapter, along with three others that facilitate motivation for change and promote autonomy: harm reduction approaches, mindfulness-based approaches, and 12-step facilitation. The
focus is clinical in nature; that is, how practitioners can guide students, clients, and other interested persons toward beneficial personal change.

**What Is Motivation?**

Despite its everyday use and the abundance of motivational theories, the concept of motivation still is not well understood. Is it a “thing” a person has or does not have, or has in different quantities or to varying degrees, as in “He just doesn’t have enough motivation to stay clean”? Is it something like willpower that somehow can be manufactured and is implied in the statement, “I need to get myself motivated”? Is it a condition that develops—or regresses—over time, such as the so-called (and now widely disputed) *amotivational syndrome* associated with chronic marijuana use? Or is it a personality trait that is relatively stable across time and, as a result, defines an individual and explains his or her general behavior? This version is implied when the reason given for a person’s failure to enter treatment is that he or she simply is not motivated.

The conclusion of a vast amount of motivational research in the behavioral sciences, including addiction, is that motivation is none of these entities. It is not a “thing” or a condition that people have in their possession, nor is it a stable and permanent trait that defines an individual. It is a complex interplay of internal and external forces that stimulate and direct behavior. It is, as Bernard et al. (2005) explain, “what animates us, what prompts our initiation, choice, and persistence in particular behaviors in particular environments” (p. 137). As such, motivation is expressed in behavior; it implies behavior. Indeed, the two are inseparable. This is evident in the etymology of the word *motivation*, which originates from the Latin words *motus*, meaning “to move,” and *motivus*, or “of motion.” According to Draycott (2007), what prompts or influences a particular behavior (i.e., motivation) cannot be separated from the behavior itself, further complicating efforts to define motivation.

**Motivation as Purposeful Behavior**

Human motivation is best understood as *purposeful behavior*. It is “the *why* that causes an organism to initiate and persist in certain behaviors as opposed to others” (Bernard et al., 2005, p. 134, italics original). Although purposeful behavior takes place only in the present moment, its focus is on (unconsciously or consciously) the future. Current behavior is therefore always in service of, or a function of, an imagined or anticipated goal or outcome. According to Bernard et al., motivation or purposeful behavior involves “if–then” thinking, where *if* is the mental image of desired or intended behavior (e.g., drinking) and *then* is the mental image of the
result of engaging in that desired behavior (e.g., relaxation). This cognitive process is consistent with expectancy theory and goal theory, but is only one aspect of motivated behavior, as seen in the theories of motivation mentioned earlier—evolutionary theory and PRIME theory.

Understanding motivation as purposeful behavior helps explain addictive behaviors and is useful in devising methods for preventing and treating problematic substance use. Motivation understood as purposeful behavior rejects a generic, all-encompassing explanation of addiction because motives (e.g., values) are plentiful, context- or environment-specific, and often person-specific. Knowing what propels and sustains activity (i.e., motives) cannot be surmised from observation alone (as it is in animal studies); it only can be understood by asking the person(s) engaged in the behavior. Doing so prevents erroneous assumptions and misguided decision making on the part of prevention and treatment practitioners. Learning the purpose or function of a behavior requires direct interaction with, and listening to, an individual with substance use problems or persons from a targeted population at risk for developing addiction (e.g., low-income adolescents who have been exposed to repeated trauma). One way to do this is to ask about the benefits of substance use, such as “What do you like about smoking weed? What’s the payoff for you?” Simons, Correia, Carey, and Borsari (1998) found that the primary motives for adolescents and young adults to use marijuana were to enhance positive experiences (“It’s fun and exciting”) and to expand personal qualities and traits (“I want to know myself better, be more creative, and understand things differently”). These motives differed from the primary motives for drinking alcohol, which were to be social (“It improves parties”) and to conform (“So others won’t kid me about not drinking”). Asking someone about the specific motives or reasons for substance use supplies more idiosyncratic and, as a consequence, credible information useful in constructing tailored prevention and intervention strategies.

Viewing motivation as purposeful behavior also rejects the idea of perpetual inertia, “stuckness,” or “amotivation” and suggests an amenability to change. Persons are motivated to do something, even if that something is avoidance behavior (e.g., not drink, not finish school) rather than approach or proactive behavior (e.g., work a recovery program, graduate). Remember that West (2006) describes motivation as the forces that energize and direct human behavior in the present moment. The implication here is that forces are always present to incite behavior, and once these motives are brought into awareness and understood, more self-governing or self-regulated and autonomous behavior can be shaped and exerted.

This implication also applies to impulsive behavior, which Bernard et al. (2005) regard as the opposite of self-control. Madden and Johnson (2010) define impulsivity as the “tendency to act on a whim and, in so doing, disregard a more rational long-term strategy for success” (p. 11).
Impulsive behavior is evident in the phenomenon of delay discounting: the practice of devaluing or discounting the value of an outcome because of the delay in its arrival. The longer one has to wait for something of value (e.g., money), the less valuable it becomes and the more likely the person will not wait for it. Immediate and smaller rewards (e.g., $10 now) are preferred over later or deferred and larger rewards ($50.00 in 2 weeks). The field of behavioral economics suggests that a range of behaviors, including impulsive behaviors, can be shaped through the use of money and other tangible rewards. What is important to an individual—what he or she values—is a significant aspect of human motivation that, according to SDT, fuels both intrinsic and extrinsic motivation.

Feather (1987) defined **values** as “a particular class of motives” that has “an oughtness quality about them” (p. 39). He argued that values influence behavior but do not have the character of a goal. Whereas **goals** manifest primarily as cognitive representations that direct behavior toward specific possibilities or outcomes (Elliot, McGregor, & Thrash, 2002), values are guiding principles of life that organize a person’s attitudes, emotions, and behaviors (Kasser, 2002). More so than goals, **values** have an enduring quality to them and thus retain some consistency across time and different situations. Learning what is important to a person, what he or she values or wants out of life, is therefore useful in understanding and then shaping his or her purposeful behavior or motivation. One way this is done in MI is to ask persons to sort through a stack of cards, each containing a one-word or two-word value statement, such as **simplicity**, **faithfulness**, and **popularity**, and then to rank the cards according to their level of importance. Known as the **values card sort** (accessible at [http://casaa.unm.edu](http://casaa.unm.edu)), this activity helps individuals make sense of and then prioritize what is important to them in order to guide their decision making and to cultivate behaviors that are more consistent with their values. This process can foster more autonomous or self-regulated and authentic behavior.

**Motivation as Practice Centerpiece**

Only in the past 30 years has the assessment of human motivation become a central feature and an essential function of prevention and treatment practices in the addictions. This shift is due in part to an expanded view of addiction: namely, that multiple factors contribute to addiction and to its resolution or management. No longer is addiction viewed in either-or terms. These dichotomies have been replaced with dimensions (see Miller et al., 2011). What had once been construed as client “denial” or “resistance” is now regarded as a low level of motivation or of readiness to change on the motivation spectrum. The revision made by the American Society of Addiction Medicine (Mee-Lee et al., 2001) to its Patient Placement Criteria (ASAM PPC) exemplifies this shift. Whereas earlier versions identified
“treatment acceptance/rejection” as one of six dimensions on which to assess clients for level of care, the current ASAM PPC redefines that dimension as “readiness to change.”

Motivation has assumed a more prominent role in general psychotherapy as well. According to Ryan, Lynch, Vansteenkiste, and Deci (2011), this change is attributed to a greater focus on eclecticism and integrationism—or combining different theories and approaches—and to the increased emphasis on short-term counseling by funding sources (e.g., private insurance), making the assessment and incorporation of client motivation early on in the treatment process that much more important. Addressing client motivation in counseling and psychotherapy is also important because the majority of clients present with very low or poor motivation to change and a substantial number of them fail to attend the first counseling session after intake (Ryan et al., 2011). Client engagement and persistence in counseling thus depend, to a great extent, on the counselor’s ability to connect with the client’s motivation. West (2006) maintains that this begins with how the counselor poses the first question. Rather than asking the client, “Do you want to stop smoking?” counselors should say instead, “We have quite a few methods available to help persons stop smoking, and I’d encourage you to give one of them a try.” The former question prompts a negative image in the client’s mind, whereas the latter statement prompts a more promising image or outcome. Cultivating positive images of change in clients is one way clinicians can help clients “tie themselves” to their self-regulating capacity or their ability to change, an important type of motivation.

Several models and practices specifically target and prioritize motivational factors and autonomous or self-regulatory processes in their application. The three we discuss in the following sections were all developed in the early- to mid-1980s, and two of them originated from the addictions field: the TTM and MI. The third model, SDT, is a general theory of personality and began as an exploration of what determines intrinsic motivation. It has since been applied to the addictions field, whereas the TTM and MI have expanded their applications beyond the addictions field to the areas of physical health (e.g., exercise, nutrition), mental health (e.g., depression, anxiety, eating disorders), and public health (e.g., safe drinking water practices), to name a few. Each of these models and practices has been compared and integrated, and evidence suggests that any two in combination are compatible and complementary. Kennedy and Gregoire (2009), for example, found that combining the TTM and SDT for the treatment of persons with substance use disorders provided a more comprehensive view of motivation than either model offered independently.

As you read about the TTM, MI, and SDT in the following sections, we encourage you to think of conditions (plural) that enhance or diminish client motivation to change, and to refer to helping professionals who facilitate (or forestall) motivation to change in people, rather than to
professionals who motivate people. These two recommendations are consistent with how we have defined motivation thus far in this chapter: (1) Motivation is not the result of one single source (i.e., there is no such thing as direct causation); (2) one external source (e.g., clinician) cannot effect change (i.e., motivation) in another person; (3) one internal source of motivation (e.g., belief, value, intention) does not necessarily effect behavioral change (i.e., knowing does not automatically translate into doing), and therefore galvanizing interpersonal and contextual motivation (or autonomy support systems) is important; and (4) a person is not either motivated or unmotivated. Although SDT refers to amotivation, the legitimacy of this concept is disputed in MI.

**Transtheoretical Model of Change**

The TTM is a model of how individuals intend to change their behavior (DiClemente, 2003; Prochaska & DiClemente, 1982; Prochaska, DiClemente, & Norcross, 1992). Originally it was developed to understand the process of change that took place in persons who were successful in modifying their nicotine use behaviors, whether or not they made use of formal intervention, such as counseling. Its theoretical structure is integrative, which explains in part its transtheoretical name: it “cuts across” and combines existing theories. It also transcends existing theories by offering something new: a theory of when and how people change.

The focus of the TTM is on intentional and self-initiated change, rather than on societal, developmental, or imposed change (Prochaska et al., 1992). It presumes that most change is gradual and ongoing, not instantaneous and dramatic, as is characteristic of quantum change, or the experience of sudden, surprising, and permanent personal transformation (Miller, 2004; Miller & C‘de Baca, 2001). There also is no accounting for happenstance in the TTM. The TTM therefore is concerned with how people intend to initiate behavior change and the nature of the process of change once it has commenced. As such, the TTM seeks to understand and to promote a person’s own and self-reported intentions to change. Nuttin (1987) defines intentions as a cognitive activity that exists at the preperformance stage of doing (i.e., behavior) and serves as a motivational force for behavioral action. Expressing an intention to change suggests a self-assessed readiness and ability to perform a certain task sometime in the future.

The TTM depicts a temporal sequence of change and identifies common processes or activities that propel behavior change from one time period to another. The model is comprised of three dimensions: processes, levels, and stages of change. Processes in the TTM are regarded as common activities, tasks, behaviors, or strategies that correspond to and mobilize change.
They help explain *how* change occurs over time. There are 10 processes of change in the TTM, half of which are cognitive–experiential strategies and the other half, behavioral. Among them are the cognitive–experiential processes of consciousness or awareness raising (promoted by education and feedback, e.g., using a cost–benefit analysis), self-reevaluation (e.g., values clarification), and dramatic relief or emotional arousal (experienced through grieving, role play). Behavioral processes include stimulus control, or regulating exposure to certain places or people, and counterconditioning, or response substitution (i.e., engaging in a healthy, alternative behavior instead of the conditioned addictive behavior). Levels of change in the TTM involve the prioritization of five distinct but related problems addressed in prevention or treatment services: symptom/situational problems, maladaptive cognitions, current interpersonal conflicts, family/systems conflicts, and intrapersonal conflicts.

**Stages of Change**

The TTM is best known for its third dimension: the outline of five time periods or stages in the change process, referred to as the *stages of change*. The five stages of change are sequential and ordinal, although recursive and cyclical (DiClemente, 1993), and represent *when* people change. They also are purported to be discrete or mutually exclusive, meaning that persons are assessed to be in only one stage of change at a time. In research studies, stages are determined by responses to standardized measures, the most popular of which is the University of Rhode Island Change Assessment (URICA; McConnaughy, DiClemente, Prochaska, & Velicer, 1989; accessible at [http://casaa.unm.edu](http://casaa.unm.edu)). Taken together, the stages signify various levels of readiness to change. Each stage of change represents a step toward a new behavior, and certain characteristics are prominent in each stage. Figure 11.1 depicts the stages of change. Each box corresponds to a stage of change (with the exception of relapse and recycling) and includes the primary goal for moving to the next stage of change. For example, to move from preparation into action, commitment and planning are needed.

In the following section, we describe each stage and its corresponding characteristics.

Although regarded as a stage of change, *precontemplation*, as its name implies, describes a state that actually precedes the active process of change. Notice in Figure 11.1 that precontemplation is located outside the stages of change cycle and that movement is one way only: There is no entry back into precontemplation from the change cycle. This positioning aptly depicts this first stage of change. In precontemplation, persons are unaware of, or are oblivious to, a need to change their behavior; are underaware of, or do not fully comprehend, the need to change, or simply do not intend to change their behavior any time soon (e.g., in the next 6 months). They may
be resigned to continue living as they have (“I’m a hopeless drunk”) or are adamant about not sacrificing something that has become too important for them (“No one can tell me to stop smoking”). Either way, they remain committed to maintaining the status quo. When they enter treatment, it is only the result of being mandated or otherwise coerced to do so by someone else because their behavior has become problematic for others.

Once persons have realized that their behavior is problematic and that change is needed, they move into the contemplation stage of change. Again, as depicted in Figure 11.1, there is no going back to precontemplation: No one can claim ignorance or revert to oblivion after experiencing an “aha!” or awakening moment—what has been brought into awareness does not evaporate. But simply realizing that one’s behavior needs to change does not mean that actual behavior change will occur. Knowing is not doing. Persons in the contemplation stage of change are well aware of the costs, burdens, or negative consequences of their current behavior; they also are equally aware of the benefits of changing their behavior. At the same time, however, they remain attached to the payoffs derived from their current behavior, and they realize that change comes at a price. This

double-sided awareness or ambivalence is the chief characteristic of the contemplation stage of change. Individuals who are ambivalent are torn between two equally appealing, although opposing, enticements: changing and remaining the same. It is like being perched in the middle of a perpetually fluctuating seesaw; confusion and feeling stuck are common. Persons who are ambivalent know what is good for them (and also perhaps for others), but they are not able to change now (e.g., they lack certain skills or confidence) or the benefits of staying put still outweigh the benefits of changing. Because of this, contemplation is regarded as prolonged indecision, fluctuating compliance, and behavioral procrastination. Whether or not they are in treatment, people can remain in this stage of change for months or even years.

Persons in contemplation who have weighed the pros and cons of changing and not changing and have tilted their seesaw toward change are said to have entered the preparation stage of change. This stage of change characterizes persons who have made a decision to change their behavior in the near future (e.g., next month) because the negative consequences of change are not as great as before and because of increased self-efficacy (“I can do this”). However, making a decision to change is not sufficient to actualize the desired change. Two tasks must be accomplished to initiate behavior change: creating commitment and planning action (DiClemente, 2003). The first task involves allocating time, energy, and other resources to do the work necessary to realize change; and the second task involves devising a plan of change that is acceptable, accessible, and effective. Preparation may thus be considered the “dress rehearsal” stage of change because persons are “trying out” their new behavior (e.g., on November 15, the “Great American Smokeout” day) as one way to convince themselves that they have made the right decision. However, they have yet to “launch” their new behavior. They are still in a trial period of planning, strategizing, and getting ready for their behavioral “debut.”

Persons who have followed through on their commitment and plan to change and are deliberately and actively engaged in changing their overt behavior are said to be in the action stage of change. Their commitment to making a change is clear and firm and their efforts are noticeable to others. They have thus “gone public” with their new behavior and are investing considerable time and energy into making this behavior change routine and permanent (e.g., not smoking since November 15). They intend to make this new behavior “stick” by implementing a relapse prevention plan and revising as needed.

Persons enter the maintenance stage of change when they have engaged in their new behavior for more than 6 months and have realized the early benefits of change. New and substitute behaviors have been incorporated into their daily lives and the “taste” or allure of the problematic behavior is no longer as intense. The “battle” to stay clean, for example, does not
require the exertion that it once did. Because of their success, persons in the action stage of change are “sold” on their new behavior and invested in “the long haul”; they also want the benefits to “keep on coming.” They are intent on consolidating the gains made and living a well-maintained recovery.

Although included in Figure 11.1, termination typically is not considered a stage of change (as with precontemplation), and rarely is it discussed or mentioned in the TTM literature. It is not measured on the URICA and therefore has not been included in the TTM research. References to termination describe it as the final end state in the TTM, a time when there is little or no activity invested in the change process (DiClemente, 2003).

Because the change process in the TTM is gradual, cyclical, and the product of trial and error, relapse and recycling are built into the stage model (depicted in Figure 11.1 by their location in the center of the change cycle). Persons move through each stage sequentially in their process of change and therefore do not “skip” a stage. They do, however, relapse and thereby revert to earlier stages, such as contemplation. Recycling occurs when the change process is reinstated and persons reinvest in a renewed and now altered plan.

**Stage–Process Matching and TTM Clinical Application**

According to the TTM, movement from one stage to another is facilitated by selecting processes that are appropriate for a particular stage of change. This is known as matching processes to stage of change, a form of individualized care. The cognitive–experiential processes are typically appropriate for persons in earlier stages of change, whereas the behavioral processes are reserved for persons in maintenance and action. Persons in the precontemplation stage, for example, will not benefit from the behavioral task of substituting new activities (e.g., measured breathing to forestall the urge to use) for using behavior (e.g., drinking to calm nerves); they are not ready. Recommending such an activity constitutes a mismatch. What fits for persons who do not want to change or are ambivalent about changing include the cognitive–experiential processes of consciousness raising (e.g., learning about the quantity and frequency of my use) and self-reevaluation (e.g., comparing my use to that of others and to my personal values).

Norcross, Krebs, and Prochaska (2011) offered nine recommendations for applying the TTM in treatment:

1. Assess the client’s stage of change.
2. Beware of treating all clients as if they are in the action stage of change.
3. Set realistic goals by moving one stage at a time.
4. Treat persons in precontemplation “gingerly,” that is, with great care.
5. Tailor the processes to the stages of change; in other words, engage in stage–process matching.
6. Avoid mismatching stages and processes.
7. Prescribe stage-matched relationships of choice as well as treatments of choice. This goes beyond stage–process matching and requires the practitioner to adapt his or her interpersonal style or counseling approach to the client’s stage of change. For persons in the maintenance stage, for example, the practitioner is advised to assume a consultation style, not a teacher role.
8. Practice integratively. This means combine prevention and treatment approaches from different theoretical orientations (e.g., experiential, behavioral), as the processes of change represent.
9. Anticipate recycling. Because change is gradual and occurs through trial and error, it is wise to expect persons to move back to earlier stages of change from time to time and not change in a purely linear fashion. Relapse may be considered a sign that an earlier process or approach was a mismatch.

Contributions and Criticisms of the TTM

The TTM and its stages of change dimension have expanded the conceptualization of motivation or readiness to change beyond the longstanding dichotomous understanding of simply ready or not ready. Indeed, Miller and colleagues have credited the TTM with “revolutioniz[ing] addiction treatment and more generally how professionals think about facilitating change” (Miller & Rollnick, 2009, p. 130), characterizing it as “a significant factor in the addiction field’s change of heart and mind regarding client motivation” (Miller et al., 2011, p. 159). Despite its ongoing criticisms (discussed later in this section), the TTM has become one of the most established and most frequently used theories in health behavior research (Painter, Borba, Hynes, Mays, & Glanz, 2008), and more than 1,500 research studies have been conducted on the stages of change (Norcross et al., 2011). Its application to stress management has been recognized as an evidence-based program by the National Registry of Evidence-Based Programs and Practices (NREPP) of the Substance Abuse and Mental Health Services Administration (SAMHSA).

What may explain the popularity of the TTM, specifically its stages of change dimension, is its portrayal of behavior change as something that develops over time. This is its clinical or practical utility—what Littell and Girvin (2004, p. 342) regard as the TTM’s “heuristic value”—which has a number of potential benefits. First, it normalizes perceived barriers or
complications toward change, such as ambivalence and relapse. Second, it promotes patience and persistence in efforts to change. Rather than expecting or demanding instantaneous or rapid change (and being disappointed and frustrated with the results), persons who view their own or another’s behavior change as a process may develop greater self- or other-efficacy, resolve, and endurance. This also may encourage self-compassion and empathy, which are related to a third benefit: that of promoting less pejorative views of persons who are not ready to change or are experiencing difficulty in their change efforts. A final and fourth benefit of accepting change as a gradual process that follows a known sequence or “meaningful segments” (DiClemente, 2003, p. 31) is that specific tasks or activities can be selected to further change or to reinstate the change process following a relapse. This component reflects the “vital implications” that stages of change assessment has for guiding treatment and prevention services and promoting progress (Norcross et al., 2011, p. 151). According to the TTM and its stages of change, when and how behavior change occurs are not a mystery, and established tools and resources (i.e., processes of change) are available for use at specified time periods (i.e., stages of change). These factors, in themselves, can instill hope for recovery to clients and providers alike.

Despite its extensive research base, vast appeal, and seeming entrenchment in the addictions field, the TTM and its stages of change dimension have long been criticized for a number of reasons. Chief among these are that the stages of change are not discrete states or qualitatively different temporal segments (Littell & Girvin, 2002, 2004) but “simply arbitrary lines in the sand” (West, 2005, p. 1037) and therefore not genuine stages. Second, the stages of change do not represent sequential transitions. From their review of the TTM and stages of change research, Littell and Girvin (2002) reported that no study had documented movement through all five stages and that the TTM’s claim that progress occurs “one stage at a time” is based on insufficient or flawed evidence (pp. 247–248). What accounts for some people proceeding to behavior change whereas others do not remains unanswered (Urbanoski, 2010). This point relates to a third criticism: that the TTM’s processes of change have not been effective in predicting advancement through the change process (Abrams, Herzog, Emmons, & Linnan, 2000; Herzog, Abrams, Emmons, Linnan, & Shadel, 1999). Further criticisms have been voiced by West (2005, 2006) who argues that the TTM does not account for or explain (1) sudden or “quantum” change; (2) the role of situational determinants in the change process (e.g., recent life events, immediate circumstances, influence of client–counselor conversations); (3) the role of reward and punishment (i.e., principles of learning); (4) intentions about changing, because change from an addictive behavior or other health condition does not necessarily follow a conscious or
deliberate process; or (5) readiness to change, because the stages of change are not necessarily “the optimal way by which readiness can be measured” (Abrams et al., 2000, p. 228).

Hallgren and Moyers (2011) analyzed data from Project MATCH (Matching Alcoholism Treatments to Client Heterogeneity), a multimillion dollar collaborative study of alcoholism treatment in the United States (Project MATCH Research Group, 1997), and were unable to find any consistent associations between client self-reported motivation at the beginning of treatment (based on client URICA responses) and client talk about change in subsequent counseling sessions. Client pretreatment intentions to change their drinking behavior did not match their actual talk about change once enrolled in treatment. These findings support West’s (2005, 2006) contention that motivation to change is not necessarily fueled by early intentions to change and that the TTM (and specifically its stages of change dimension) does not account for situational or in-the-moment influences (e.g., feedback from members in a group counseling session). Although a recommended practice in planning care and prevention services is to assess a client’s stage of change first and then select matching or appropriate strategies (see Norcross et al., 2011), Hallgren and Moyers argue against using a pretreatment measure of readiness to change. For care planning purposes, they recommend instead the use of careful listening to client in-session language about change (e.g., talk about change, talk against change or sustain talk) and selecting services based on how clients talk about change.

Additional criticisms of the TTM include Delinsky et al.’s (2011) claim that the TTM’s conceptualization of motivation is unidimensional rather than multidimensional. In their work with eating disorders (specifically, anorexia nervosa), they argue that the TTM does not account for the simultaneous internalization of both the benefits and costs (or burdens) of problematic behavior, and that motivation itself may not be a distinct construct but simply a proxy for illness severity or a positive prognosis. Dare and Derigne (2010) also complain that the TTM adopts a narrow definition of denial (i.e., not capturing its complexity) and that testing other theories of denial has been impeded by the TTM’s popularity.

An alternative to the stages of change model is the contemplation ladder (Biener & Abrams, 1991), a measure of readiness to consider stopping a harmful behavior (e.g., smoking), that has performed as a modest and reliable predictor of tobacco cessation (Abrams et al., 2000). It has been modified and used in an emergency and trauma department (Magill, Apodaca, Barnett, & Monti, 2010) to assess motivation to change drinking behavior on a single measure: “Each rung on this ladder represents where a person might be in thinking about changing their drinking. Select the number that best represents where you are now.” Response options are “no
thought of changing” (0, or ground level) to “taking action to change” (10, or highest rung on ladder). The sparse use of the contemplation ladder may be explained by the popularity of the TTM and its stages of change.

**Motivational Interviewing**

MI (Miller & Rollnick, 2013) is a particular style of communication intended to strengthen and evoke another person’s own reasons and motivation for change. It is a way of being with another person, such as a client. Think of MI as the manner in which a clinician interviews a client about his or her motivation—about the internal and external forces energizing and directing the client’s behavior. Rather than comprising a set of techniques, MI is a skillful method of helping that employs careful, selective, and responsive listening to gently guide another person toward his or her own self-selected behavior change. It is both a collaborative and a strategic endeavor, and so MI practitioners do not tell clients what to do (not even covertly), and at the same time they do not permit conversations to wander aimlessly. MI gives prominence to what the client wants and believes is necessary for change and uses that insight to help shape movement toward healthy change.

MI developed from clinical intuition in the early 1980s (see Miller, 1983) as an alternative to the direct confrontation methods that were customary in addictions treatment in the United States at that time. Rather than categorizing clients as either motivated or unmotivated to change (and equating the latter with “denial”), MI proposed a more extensive and sophisticated understanding of motivation that included (1) the recognition of ambivalence as a nonpathological and rather common occurrence for persons in the change process (e.g., characteristic of persons in the contemplation stage of change according to the TTM); (2) the belief that all people are motivated for something and therefore no one is “unmotivated” or has “amotivational syndrome”; and (3) the notion that human motivation is malleable and develops in the context of relationships, such as a counseling relationship. That lack of client progress could be attributed, in part, to the counselor and not to the client was quite revolutionary (if not anathema to some). According to Sellman (2009), MI brought about a “seismic shift” in the method of treatment for persons with addictions in the United States, “from noisy confrontation strategies to quiet listening approaches” (p. 9).

MI developed alongside the TTM, and they still are often used together, especially for persons in early stages of change (i.e., precontemplation and contemplation). Miller and Rollnick (2009, p. 130) acknowledge the “natural fit” between MI and the TTM and characterize them as “kissing cousins who never married.” But they insist that MI was never based on the TTM
and is not to be confused with the TTM. Whereas the TTM was developed as a comprehensive theory of how and when people change, MI is a specific clinical approach intended to enhance personal motivation for change and can be applied without assessing a person’s stage of change.

As with the TTM and its stages of change, MI has become a familiar and strongly endorsed method for delivering prevention and treatment services for addictive behaviors. Heather (2005) referred to MI as a “central plank” (p. 5) in the emergence of a paradigm shift in the addictions field and the “common currency” among many primary health care and other helping professionals, adding that MI is a “truly world-wide phenomenon of our times” (p. 2). MI was recognized by SAMHSA’s NREPP in 2007 as an evidence-based practice for the treatment of substance use concerns, and Moyers, Martin, Houck, Christopher, and Tonigan (2009) noted that MI had been identified by 48 states as a preferred method for treating substance use problems and that at least eight states had mandated its use in some fashion.

Attributes of MI: “Spirit,” Technique, and Processes

Miller and Rollnick (2013) define MI concisely as “a collaborative conversation style for strengthening a person’s own motivation and commitment to change” (p. 12). Notice that there is no reference to counseling or treatment in this definition. The focus is on communication. What makes this communication style unique is its integration of relational skills and technical skills applied across four stair-step processes. The relational skills are known collectively as the underlying perspective or “spirit” of MI. Applied to client–counselor interactions, this spirit or essence of MI is fourfold: (1) working collaboratively and in partnership with a client; (2) accepting the client’s inherent or absolute worth by expressing accurate empathy, respecting and honoring his or her autonomy or decision-making capabilities, and affirming his or her strengths; (3) demonstrating compassion by promoting the client’s welfare; and (4) evoking or eliciting the client’s own ideas and other resources for change. As seen in Figure 11.2, these four relational skills overlap as the foundation of MI. Without these four skills in operation, MI is not MI.

The technical components of MI are skills common to many counseling approaches, but they are used strategically in MI. Four fundamental skills or techniques that are used in MI, from start to finish, are known by the acronym OARS:

- Ask Open-ended questions (questions that often begin with how and what and open the door for further conversation and exploration).
- Affirm the person’s strengths (and doing so genuinely, without sarcasm).
• Provide empathic Reflections (uttered as statements, not questions, that make a guess at the speaker’s thoughts or feelings).
• Summarize content throughout the conversation by collecting and linking material that has been heard, and then transitioning to something new.

In Moyers et al.’s (2009) research, two of these skills prompted more client change talk (which in turn led to actual behavior change) than the other two skills. These were questioning the negative and the positive aspects of a target behavior (e.g., drinking) and responding with reflections. Although in their study open- and closed-ended questions were combined, Miller and Rollnick (2002) advised that practitioners use twice as many open-ended questions as closed-ended questions. They also recommend that two to three reflections be offered for every question that is asked.

Two additional techniques consistent with the spirit of MI are (1) offering advice or recommendations only with the person’s permission, and (2) supporting the person’s autonomy. The first of these prevents the practitioner from putting words in the speaker’s mouth and “plowing through” with prescriptions. This desirable approach is evident in statements such as “I have some ideas about this. Would you care to hear a few?” The second skill further reinforces the humanistic quality of MI that change is always the other person’s call and that no one can make anyone do anything. Statements such as “It’s up to you” and “This is really your decision, not mine”
convey this respect. Further discussion of autonomy is provided in the section on SDT later in this chapter.

Miller and Rollnick (2013) outline four processes of MI. Consider these as sequential methods for conducting MI, each with a specific focus that undergirds the work of the succeeding methods. These four processes or stair steps are engaging, focusing, evoking, and planning. Engaging refers to establishing a respectful and helpful connection with the speaker (e.g., student, client), and focusing involves determining a direction for the conversation, a mutually agreed-upon agenda. Recall that evoking is also one of the components of the MI spirit. As a process in MI, evoking deliberately makes use of the person’s own momentum toward change; it specifically encourages the person to voice his or her own arguments for change. Although ambivalence is not included in the current definition of MI, it is during the process of evoking that exploring and resolving ambivalence are prominent. The fourth process, planning, takes place when it is determined that the person is ready to launch a behavior change, such as reducing alcohol consumption or no longer playing slot machines. Planning involves cultivating a commitment to change and developing a specific itinerary for making that change happen. As with the TTM stages of change, each of these four MI processes or steps is never entirely accomplished, and all of them often need revisiting as motivation fluctuates. A surprising finding in Moyers et al.’s (2009) research was the amount of ambivalence heard throughout MI conversations. Wise practitioners, they suggest, accept such fluctuations as normal, and wait patiently and persistently alongside the person (using the relational and technical skills of MI) to voice his or her own self-motivational statements or arguments for change. This may occur only by revisiting the steps of engaging, focusing, evoking, and planning.

The Language of Motivation in MI

Because MI is a communication style, careful attention is given to the verbal expressions present in conversation. The language of interest in MI is that of change, how people talk about change. It is the talk of change that signals motivation. MI practitioners encourage clients to talk about change, and they reinforce change talk when they hear it. Consistent with West’s (2006) contention that motivation occurs only in the present moment, MI defines motivation according to in-the-moment verbal utterances. Motivation in MI is thus assessed according to how people talk about change in the moment, how often and how intensely.

There are seven dimensions of motivation in MI, or seven distinct ways in which people talk about change. These dimensions are known by the acronym DARN CAT (Miller & Rollnick, 2013) and are heard when someone talks about his or her:
• Desire, preference, or wish for change.
• Ability or self-efficacy to change (belief that I can effect change, that I can make change happen), as well as confidence in changing.
• Reason for change, or what will be gained by changing.
• Need for change, or the urgency or pressure (internal or external) to change (e.g., what needs to be stopped or relinquished now).
• Commitment to change, or the public declaration of intent to change, signaling a promise to change and a high likelihood of changing one’s behavior.
• Activation of change resources or movement in the change direction (“I’ll try,” “I’m willing to”).
• Taking steps, describing behaviors already and recently accomplished in the direction of change (e.g., “I calmed myself down”).

The first four dimensions of verbalized motivation or change talk (DARN) indicate a preparation for change, how people get ready for, or talk themselves into, change. They comprise what is referred to as preparatory talk and, in MI counseling sessions, are often the precursors and harbingers of mobilizing language (Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003; Hodgins, Ching, & McEwen, 2009), the last three dimensions of verbalized motivation (CAT). People who talk about wanting and needing to change—for example, citing a reason for change (e.g., getting driver’s license back, regaining custody of children) and indicating that they can do so (“I can do it”)—are subsequently likely to be heard promising or vowing to change (“I’m gonna get clean,” “I’ll never pick up again”) when working with an MI clinician. And MI research has found a compelling link between change talk and actual behavior change (Apodaca & Longabaugh, 2009). Moyers and her colleagues (Moyers, Martin, Christopher, Houck, & Tonigan, 2007; Moyers et al., 2009) refer to this link as a causal chain, meaning that MI interventions lead to an increase in client change talk, and client change talk in turn leads to behavior change, such as reduced drinking and abstinence. A similar link was found for persons who received a brief (15- to 20-minute) motivational intervention about their drinking in the emergency department (Bertholet, Faouzi, Gmel, Gaume, & Daeppen, 2010). Hodgins et al. (2009) also found that clients who verbalized a commitment to change during MI phone sessions with a therapist later reported positive change in their gambling behavior (e.g., days of gambling, dollars lost, self-efficacy related to gambling abstinence) up to 12 months following the intervention. Voicing motivation to change (preparatory talk that turns into mobilizing talk) thus translates into behavior change.

MI research does not suggest that behavior change occurs by simply uttering the words “I will change.” Such a proposition is preposterous, as is the contention that knowledge alone effects behavior change (a view still held by many in drug and alcohol prevention and treatment). It is the
strength or intensity of change talk as well as its frequency (Moyers et al., 2009) that make a difference. Someone who mumbles “I guess I’ll try to stop smoking” is not likely to actually stop smoking. By contrast, someone who verbalizes a genuine desire to stop smoking and does so with a sense of urgency, conviction, and confidence is more likely to follow through with the commitment—or to “walk the talk.” Gaume, Gmel, and Daeppen (2008) found that, in particular, clients’ expressed ability to change (one dimension of preparatory change talk) predicted their report 1 year later of fewer drinks per week. The language of motivation in MI that leads to behavior change is thus sincere, earnest, and confident; it has developed over time through fluctuations and is strengthened in part by a skilled listener who is able to convey empathy, accept the normality of the ambivalence heard and not dispute statements opposed to change, and reinforce the person’s autonomy or decision-making capacity.

Motivational Enhancement Therapy

Motivational enhancement therapy (MET) is a brief intervention and an adaptation of MI that was developed for Project MATCH, mentioned earlier. MET incorporates the MI spirit and makes use of technical skills associated with MI (e.g., OARS). It is distinct from MI in that MET provides students or clients with personalized and structured feedback (oral and written). Feedback includes comparisons of client or student self-reported alcohol or drug use relative to their peers (e.g., other female freshmen at the same university) and health information (e.g., maximum number of drinks per week recommended), and is presented in a candid and nonjudgmental manner.

One example of MET is the Brief Alcohol Screening and Intervention for College Students (BASICS; Dimeff, Baer, Kivlahan, & Marlatt, 1999) that is conducted in two separate 50-minute sessions: an assessment session followed by a feedback session. Maintaining the MI spirit of partnership, acceptance, compassion, and evocation, BASICS is intended to raise awareness of drinking behaviors in older teenagers and young adults. Once awareness has been enhanced and students begin to talk about changing their behavior, they are encouraged, in a nonconfrontational manner, to develop a personalized plan for healthy change. Amaro et al. (2010) adapted the BASICS program to include screening and intervention for alcohol and other drug use and found that it reduced both the quantity and frequency of substance use among college students who sought medical and mental health services at a university health care center.

Feedback is the component that distinguishes MET from MI. Vader, Walters, Prabhu, Houck, and Field (2010) investigated the differences between one-session applications of MI only and MET among college students. They found that student counterchange talk (or sustain
talk, i.e., against changing) was lower as a result of receiving feedback (the MET condition) than when no feedback was delivered (the MI-only condition). They also found that how students talked about change during the MET session predicted their 3- and 6-month drinking outcomes (e.g., self-reported drinks/week). Specifically, more change talk predicted less drinking, and more sustain talk predicted more drinking. There was no association between change talk or sustain talk and actual behavior change for students who received only MI. Results suggest that clinician feedback (e.g., provided in BASICS) may serve a distinct and favorable role with respect to how clients talk about change and their eventual behavior change. Compared to MI alone, Vader et al. propose that clinician feedback “may tip the balance” toward change talk, which may lead to actual behavior change.

**MI Applications and Performance**

Although its beginnings are in substance abuse treatment, and the vast amount of MI research remains devoted to investigating alcohol and other drug problems, MI has been applied to a wide range of other health-related behaviors such as gambling, HIV/AIDS prevention, eating disorders, diet and exercise, emotional or psychological well-being, and water purification/safety. MI also has been used to address treatment behaviors such as engagement, retention, completion, and intention to change. MI has been found to be particularly useful as a precursor to treatment or program involvement, increasing the likelihood that persons will agree to seek services (e.g., HIV testing), initiate service entry (e.g., go to a clinic for HIV testing and participate in a brief intervention while there), and then engage in prevention or treatment activities (e.g., attend safe-sex programming after learning results of HIV test; Apodaca & Longabaugh, 2009). In one study (Wain et al., 2011), a significantly greater number of homeless veterans with substance use problems entered a 180-day residential rehabilitation program when they participated in a brief MI intervention (approximately 38 minutes) than veterans who completed a briefer (approximately 27 minutes) standard interview. Although more MI-intervention veterans remained in, completed, and graduated from the program than did standard-interview veterans, these differences were not significant.

From their meta-analysis of 119 studies of MI conducted over 25 years, Lundahl, Kunz, Brownell, Tollefson, and Burke (2010) found that MI exerted a small yet statistically meaningful influence (average effect size = 0.22) across a variety of outcomes (e.g., reduction in risk-taking behaviors, engagement in treatment). Seventy-five percent of participants in these studies improved somewhat from MI, and of those, 50% improved slightly but meaningfully and 25% improved moderately or strongly. Specific findings were that when compared to “weak” comparison groups (i.e., wait list/
control, nonspecific treatment-as-usual groups), MI performed better, particularly for (1) African American participants, (2) substance-use-related outcomes, (3) gambling, and (4) longer treatment periods. However, when compared to “strong” comparison groups (e.g., specific treatments that included 12-step facilitation and cognitive-behavioral therapy [CBT]), MI yielded poorer outcomes (i.e., lower effect sizes) for African American participants and when MI studies were of higher methodological rigor. From their meta-analysis of 31 studies of MI for smoking cessation, Hettema and Hendricks (2010) reported an overall modest effect of MI, particularly for adolescents and persons with low tobacco dependence and motivation to quit.

A concern about MI is that its benefits do not last. An earlier meta-analysis of 72 studies of MI for a variety of health concerns (Hettema, Steele, & Miller, 2005) revealed a decline in the effect of MI over time. Booster sessions following MI intervention are therefore recommended to sustain its benefits. More recently, however, Lundahl et al. (2010) reported that lasting and meaningful effects of MI (effect sizes of 0.29 and 0.24) were evident up to 2 years beyond the MI intervention. Similar lasting and significant benefits have been found when MI has been added to another treatment (e.g., CBT), either prior to or throughout treatment (Hettema et al., 2005). For example, compared to using only CBT, combining MI and CBT has been found to increase client retention and active participation in treatment (McKee et al., 2007) and to improve client outcomes, including reduced substance use among persons with psychosis (Barrowclough et al., 2010). In Cleary, Hunt, Matheson, and Walter’s (2009) systematic review of 54 studies of treatments for co-occurring disorders (e.g., MI, CBT, contingency management, group therapy, intensive case management), MI was the most effective for substance use reduction, and MI combined with CBT led to the greatest improvements in mental health symptoms as well as reductions in substance use behaviors.

Despite MI’s relatively strong performance, especially in changing substance use behaviors (Hettema et al., 2005), little is still known about how MI works. From their review of 19 studies of MI for treating alcohol and other drug use disorders, Apodaca and Longabaugh (2009) found that MI did not increase client readiness to change more so than other treatments (e.g., coping skills training). Hunter-Reel et al. (2010) contend that no motivation-oriented treatment approach, including MI, should be credited for changing motivation; the evidence is lacking that these approaches are efficacious because they change motivation. What accounts for increasing motivation to change, they argue, is membership in a social network that does not support drinking (e.g., AA). Further research on MI must investigate how motivation changes as a result of changes in a person’s social network. Continued focus on the dimensions of client change talk and its link to actual behavior change also is in order.
SDT (Deci & Ryan, 2002, 2008a, 2008b; Ryan & Deci, 2000, 2008a) is a theory of personality, specifically of personal experience, as well as a theory of energy dynamics, or how motives determine either vitality or depletion. It developed from exploring what determines intrinsic motivation, or the innate tendency to pursue novelty and challenges, to put into practice one’s capacities, and to explore and to learn (Ryan & Deci, 2000). SDT assumes that people’s firsthand subjective experience is the proximal or most authentic determinant of motivation and action. The focus of SDT therefore is on understanding how people interpret or make sense of internal and external stimuli so as to explain their motivation and action. According to Williams et al. (2002), what distinguishes SDT from other theories of human motivation is its concept of autonomous motivation: the belief that perceived autonomy is necessary to maintain behavior change.

Although SDT is a theory and not a practice, from its extensive research base it supplies empirically informed principles and guidelines for enhancing people’s motivation (Ryan & Deci, 2008b). Motivation enhancement is accomplished by having people reflect on events and experiences to help them make changes in their goals, behaviors, and relationships. SDT has been applied to such varied domains as sport and other forms of physical activity, classroom instruction and student learning, parenting, intimate relationships, pro-environmental behavior (e.g., recycling), politics, video games, mindfulness, and medication maintenance (see Deci & Ryan, 2002; Ryan & Deci, 2008a). It also has been applied more recently to counseling and psychotherapy (Ryan et al., 2011). The application of SDT to substance use and addiction is rather limited, even though for some time addiction has been framed as a disorder of motivation (Heather, 2005). In recent years SDT has been applied to tobacco use and abstinence (Niemiec, Ryan, Patrick, Deci, & Williams, 2010; Pesis-Katz, Williams, Niemiec, & Fiscella, 2011); alcohol consumption among employed adults (Hagger et al., 2012), college students (Chawla, Neighbors, Logan, Lewis, & Fossos, 2009; Hove, Parkhill, Neighbors, McConchie, & Fossos, 2010; Knee & Neighbors, 2002), and high school students (Wormington, Anderson, & Corpus, 2011); and addiction treatment specific to therapeutic communities (Klag, Creed, & O’Callaghan, 2010) and to methadone maintenance (Zeldman, Ryan, & Fiscella, 2004).

As with the TTM and MI, SDT dismisses the notion of a unitary construct of motivation. It identifies different types of motivation that influence different types of behavioral regulation. The types of motivation are conceptualized along a continuum of autonomy, from a lack of motivation or volition (amotivation or helplessness) to strong volition or a highly internal influence of self-regulation (e.g., intrinsic motivation). Between these two end points, motivation is regulated according to the different
interactions between the person’s needs and sources of influence. Unlike the TTM, SDT is not a stage theory, nor does it suggest a developmental sequence (Ryan et al., 2011).

**Autonomy**

The primary construct of SDT is that of autonomy, which is seen as a natural, inherent, and universal human need (along with competence and relatedness, discussed in the next section) and as a quality of human behavior. It is the lifelong tendency to develop an organized, unified, or integrated sense of self, and it is expressed as volition and congruence. This means that one’s actions are self-derived and self-endorsed. Autonomy is experienced as viewing oneself as the locus of causality or the agent of activity, what de Charms (1968) referred to as personal causation and described as “being an Origin” (p. 270). It is the feeling of freedom to make one’s own choices. Autonomous behavior is therefore self-determined and self-regulated behavior: What a person does originates from within and is consistent with his or her values.

As discussed earlier in the chapter, autonomous motivation is the opposite of controlled motivation. The difference between these two types of motivation is “the most central distinction in SDT” (Deci & Ryan, 2008b, p. 182). Whereas autonomous motivation implies self-authored volition, choice, and intentionality, controlled motivation is the result of pressure or coercion—often external to the self—to fulfill specific outcomes (Deci & Ryan, 2008a, 2008b). An example of controlled motivation is attending court-mandated addiction treatment to avoid jail time. Although it is tempting to differentiate autonomous and controlled motivation strictly according to its source of influence—internal (or from within) or external (or from without)—this is not the case in SDT (extrinsic and intrinsic types of motivation are defined later). Autonomous motivation can be influenced by external forces (e.g., laws, policies, people) that the person has come to endorse over time. For example, a person who agrees with the sentencing judge’s directive to attend addiction treatment because he or she now believes treatment will help achieve desired abstinence, which in turn will help him or her regain child visitation or custody, can be said to be acting autonomously. Again, autonomous motivation involves exerting a choice that by implication is self-derived or self-initiated (“I agree to go to treatment . . .”) and reflects self-endorsed values (“. . . because I truly believe it will help me get clean so that I can get my kids back”). This is self-determination in action.

Controlled motivation, on the other hand, involves coercion (or seduction) and the eclipse of self-regulation or self-determination. It is experienced as manualization or operating like a machine in a way that is contrary to one’s beliefs. Whereas autonomous motivation feels authentic,
controlled motivation feels counterfeit; it is the same as feeling like a pawn and forced to act against one’s principles. In this way, independence is differentiated from autonomy in SDT (Deci & Ryan, 2008b; Ryan & Deci, 2002) because a person can feel forced by others (e.g., family) to develop less dependence on them. At the same time, autonomous motivation does not imply the dismissal of external sources of influence. A person is acting autonomously when his or her behavior is directed by a value or belief (e.g., abstinence) held by others that he or she has now willfully or voluntarily adopted and integrated. This often takes time and effort. According to Ryan (1992), “Much of the struggle for autonomy . . . concerns gaining regulatory control or management over inner wishes and drives as well as over outer regulations and commands” (p. 13).

**Competence and Relatedness**

In addition to autonomy, SDT identifies two other basic psychological needs that people innately seek out, whether or not they are aware of these needs. These are the needs for competence and relatedness. All three needs (autonomy, competence, and relatedness) are considered essential for psychological growth, integrity, and wellness and necessary for optimal functioning—which explains why they are referred to as *nutriments*. If any of these nutriments is thwarted or frustrated, the person will exhibit diminished motivation and well-being. These are inherent or natural needs, as opposed to learned desires; and they also are universal needs, meaning that they are important to people of all cultures.

*Competence* is the need to feel effective in one’s actions, particularly in one’s ongoing interactions with the social environment. It is the experience of opportunities to exercise, expand, and express one’s capacities. As with all three psychological needs in SDT, the need for competence is innate and is not the result of experience or learning. It involves the natural urge to have an effect on one’s environment, to influence or cause a desired outcome—what has been referred to as *effectance motivation* (Elliot et al., 2002). Although similar to self-efficacy, competence is not an attained skill or capability, but rather “a felt sense of confidence and effectance in action” (Ryan & Deci, 2002, p. 7).

*Relatedness* is the need to feel a connection to or with other people, or having a sense of belonging to one’s community. It includes caring for, and being cared for, by others and entails a sense of being significant or integral to, and accepted by, others. An important aspect of relatedness is that a connection with others supplies a sense of security, similar to what is described by the concept of attachment. Although autonomous behavior (and, in general, optimal health) is associated with nourishing or promoting all three psychological needs, Ryan and Deci (2002, p. 14) concede that
relatedness “typically plays a more distal role” in fostering autonomous or intrinsic motivation than do competence and autonomy.

**Types of Motivation and Regulation**

The two primary and opposing types of motivation in SDT are autonomous and controlled motivation, discussed earlier. The activation of autonomous motivation is what leads to more self-regulated or self-determined behavior and is associated with health and well-being. Because SDT defines motivation multidimensionally, there are further types of motivation located along the continuum of relative autonomy or self-determination. These additional motivational types are presented in Figure 11.3 and are categorized as either extrinsic or intrinsic motivation.

Intrinsic motivation (on the far right-hand side of the continuum) is expressed as intrinsic regulation, which signifies self-determined behavior. Non-self-determined behavior (far left-hand side of the continuum) is regarded as amotivation or nonregulation. Between these two extremes are four types of extrinsic motivation. Think of these as four regulatory styles, or four ways in which extrinsic motivation is experienced, processed, and expressed. Notice that two types of extrinsic motivation are associated with controlled motivation whereas the other two types are associated with autonomous motivation. Also notice that extrinsic motivation is not to be confused with external motivation, nor is intrinsic motivation necessarily the same as internal motivation. In SDT the adjectives external and internal are used to denote the source of influence or perceived locus of causality, not necessarily a type of motivation. Each of these terms is discussed briefly in this section.

**Intrinsic motivation** is defined in SDT as the natural inclination toward personally satisfying behaviors. It is doing something for its own sake—out of curiosity, because it is novel or a challenge or both, or for the sheer pleasure of it—not to satisfy anyone or thing external to the self or to receive a reinforcement (Ryan, 1995). It is associated with spontaneity and, according to Ryan and Deci (2000), is observed in human infancy as exploratory behavior, more evident in infants with secure maternal/parental attachments and with a parent who supports autonomy. Intrinsic motivation is autonomous motivation because it is freely chosen or self-authored, and it involves engaging in self-endorsed rather than controlled behavior. Intrinsic motivation typically diminishes after infancy/childhood when social pressures to engage in noninteresting activities and to assume responsibilities become more prominent. Because of this, most human behaviors are not intrinsically motivated (Ryan, 1995). These include initiating substance use (Wormington et al., 2011), limiting alcohol intake (Hagger et al., 2012), and entering treatment for an addictive behavior.
Klag et al. (2010) did not observe intrinsic or autonomous motivation in clients enrolled in a 2-week therapeutic community program, explaining that “substance users are unlikely to undergo treatment for the mere pleasure and satisfaction they may derive from overcoming their substance use problem and reaching their personal goals” (p. 1118).

**Extrinsic motivation**, on the other hand, is doing something for its separate consequence or outcome. It is engaging in a behavior to obtain a reward (e.g., drinking to get drunk) or to avoid punishment (e.g., drinking to prevent the onset of withdrawal symptoms). Whereas intrinsically motivated behavior is itself the goal, extrinsically motivated behavior is the means toward a goal—it is doing something to get something else; contingencies are involved. There are four types of extrinsic motivation in SDT, each expressed as a different regulatory style and associated with either controlled or autonomous motivation. **External regulation** is governed by controlled motivation, meaning that the person feels pressured by sources outside and alien to the self to engage in behavior that the person does not like and would not do otherwise; the purpose is to get something tangible or to avoid external contingencies in return. Attending mandated addiction treatment simply to avoid jail time and to get my driver’s license back, not because I believe I have a drinking problem, is one example. **Introjected regulation** is another type of extrinsic motivation also governed by controlled motivation. The purpose of this behavior, however, is to satisfy internal contingencies, such as avoiding the feelings of guilt, shame, or embarrassment. The source of control is also from within, a kind of self-coercion to “save face” or to enhance self-esteem. An example is drinking to assuage perceived peer pressure, which Knee and Neighbors (2002) found predicted greater drinking. Another example is promising the son you love, whom you’ve hurt before and for whom you now want to finally be a “decent father,” that you will take him to the zoo this weekend, which means making yourself not drink the day before or the morning of. It is only to salvage your image in your son’s eyes that you stay sober, not because you want to be sober. In this way, introjected regulation is characterized by ambivalence (Wild, Cunningham, & Ryan, 2006).

The third type of extrinsic motivation is experienced, processed, and expressed as identified regulation. As illustrated in Figure 11.3, identified regulation is guided by autonomous rather than controlled motivation in that the person endorses or identifies with the value or personal importance of an activity (e.g., abstinence). Although the behavior is still pursued because of its consequences (e.g., preserving self-image), the person has claimed ownership of, and takes responsibility for, the behavior. The college student who decides to “come clean” to his girlfriend about the extent of his online gambling behavior and to seek help, because he realizes it has cost him intangibles more important than money (e.g., her love, his college education) that he now wants restored, can be said to be operating
according to identified regulation. In their investigation of clients seeking outpatient treatment for primarily alcohol and cocaine use (the majority of whom reported not being mandated to treatment by a legal entity), Wild et al. (2006) found that clients’ identified motivation (i.e., their personal reasons for seeking treatment) was positively associated with their self-reported substance use severity. They concluded that clients’ reasons for seeking treatment (e.g., “Things are bad,” “I’m in worse shape”—a sign of autonomous motivation) are more influential in predicting client engagement in treatment than controlled motivation or social controls (e.g., treatment mandates, social network pressures).

Integrated regulation is an extension of identified regulation, but the motivation is more autonomous in that the behavior is synchronized and assimilated with other values and goals. It is doing something not just for one outcome or reward, but for several that are interrelated and that satisfy core beliefs and values. The recently retired nurse who stops smoking to prevent her second dog from dying of emphysema and to restore her own health so that she can reconnect with her daughter and get to know her new grandchild exemplifies this type of motivation. Her nicotine-free lifestyle has more than one benefit and is consistent with what is most important to her at this time in her life (e.g., health and family). Clients exhibiting more integrated motivation have been found to demonstrate greater treatment engagement and greater psychological well-being (Klag et al., 2010).

Overall research findings associate extrinsic and controlled motivation (specifically, external and introjected regulation) with the negative effects of addictive behavior (e.g., increased drinking, interpersonal violence). Intrinsic and autonomous motivation (primarily integrated regulation), on the other hand, has been found to serve “a clearly protective role” (Wornington et al., 2011, p. 966).

**SDT in Practice**

The primary purpose of applying SDT to various practice settings is to promote the autonomy and hence the overall well-being of persons seeking services. Its implementation for tobacco cessation also has been found to be cost-effective (Pesis-Katz et al., 2011). Autonomy-supporting environments are characterized by minimal pressure to engage in specific behaviors and the encouragement of individuals to pursue activities based on their own reasons and values (Ryan et al., 2011). In counseling and psychotherapy, creating this environment begins with understanding and validating clients’ internal frames of reference, such as what is important and satisfying to them. This does not imply endorsing their values or behavior; rather, it is an effort to grasp how each individual views a particular situation, such as the benefits and the drawbacks of his or her past and current substance use. The autonomy-supporting clinician is not invested in a particular outcome for
the client, but trusts the client’s capacity to engage in integrated regulation. As just described, this is the ability to internalize and assimilate extrinsic motives into one’s belief system and then to act accordingly, consistent with that belief system. An example of an autonomy-supporting therapeutic environment is the clinician’s commendation of client “Miranda’s” decision to engage in substance-free activities because she wants to retain custody of the children she loves and to be able to make decisions for herself and her children, as opposed to others—or a drug—making decisions for her. Discontinuing her substance use and participating in salutary rather than potentially destructive behaviors is congruent with what Miranda values: her children, clear thinking, and the freedom to make her own choices in life.

The importance of an autonomy-supporting environment cannot be overstated. Klag et al. (2010) found that clients who felt supported in an autonomous manner by therapeutic community staff saw themselves as more competent and felt more connected to—and understood by—the people around them at the start of treatment. This, in turn, was associated with more autonomous motivation (i.e., integrated motivation) toward treatment. Among clients enrolled in a methadone maintenance program, higher perceived autonomy support predicted low relapse as well as less time to achieve take-home medication status (Zeldman et al., 2004).

Although autonomy support can be thought of as an antidote to controlled motivation, it should not be considered its replacement. Supporting extrinsic motivation by issuing tangible rewards (e.g., vouchers) for achieving targeted behaviors (e.g., abstinence), as is done in contingency management (see Chapter 6), can be used in tandem with autonomy-supporting mechanisms. The two must be balanced carefully. Deci, Koester, and Ryan’s (1999) review of more than 125 early SDT studies found that, overall, when tangible rewards (e.g., $3 cash) were given to persons who engaged in tasks they found interesting, intrinsic motivation diminished. However, when positive verbal feedback or praise was provided, intrinsic motivation increased. These are consistent with results of Zeldman et al.’s (2004) methadone maintenance study. They concluded that unless controlled motivation (e.g., court mandate to be in treatment) is accompanied by high levels of autonomous motivation (e.g., choosing to be free of drug-related negative symptoms in order to be a good parent), treatment may not be successful. However, high levels of controlled motivation may actually aid recovery from addiction when coupled with high levels of autonomous motivation. Zeldman et al. explained: “The nature of addiction to either alcohol or drugs may be such that external forces acting or pressuring the individual to engage and remain in treatment are a useful adjunctive when they converge with an inner desire to change” (p. 692). The point, though, is to prioritize autonomy support, to encourage and affirm intrinsic regulation; instituting only mechanisms interpreted as controlling will undermine
any inclinations a person has to change problematic behavior and maintain well-being. Only by promoting autonomy (i.e., one’s volition and values) in prevention and treatment services is self-determined and self-regulated behavior possible.

**Integrating the TTM, MI, and SDT**

Although they developed separately and each has established its own empirical base and guidelines for practice, the TTM, MI, and SDT are amenable to integration. This makes sense given that all three prevention and treatment approaches target motivational processes by prioritizing autonomous inclinations to change, to varying degrees. The TTM and SDT are both products of theoretical integrations. And the TTM and MI have long been linked, although often mischaracterized as the same approach. Only in recent years have there been efforts to integrate SDT with both the TTM and MI. The developers have welcomed these efforts.

Ryan and Deci (2008b, p. 187) describe SDT as having “a particular affinity with” MI. They note that MI supports the three basic psychological needs identified in SDT: autonomy (by engaging in nondirective inquiry and reflection), competence (by providing information), and relatedness (by establishing a counseling relationship, e.g., characterized by unconditional positive regard). Because supporting autonomy is a key element in the underlying spirit of MI, Miller and Rollnick (2012) endorse a preliminary integration of SDT and MI, humorously stating: “A marriage may be premature, but the flirtation is not” (p. 2). The benefits of integrating SDT and MI may be to improve understanding of the mechanisms of change in MI. For example, one of the findings from Lundahl et al.’s (2010) meta-analysis of MI studies conducted over 25 years was that MI did not significantly enhance client self-reported confidence in changing (one of three variables categorized as reflecting client motivation). In light of this finding, might the effects of MI improve by targeting a more comprehensive and nuanced understanding of confidence, that is, the psychological need of competence, as defined in SDT? Furthermore, Britton, Patrick, Wenzel, and Williams (2011) propose an integration of SDT and MI with CBT to prevent suicide (and other high-risk behaviors). They speculate that SDT offers a perspective from which to understand how MI-consistent behaviors may improve client retention and outcome.

As mentioned earlier, whereas SDT recognizes amotivation, MI does not. SDT defines amotivation as lacking either intrinsic or extrinsic motivation for certain activities; there is no energy, desire, or intention to act. This description fits persons in the precontemplation stage of change in the TTM. Amotivation occurs because a person does not value an activity, does not feel competent to do it, or does not expect the activity to yield a preferred
outcome. By contrast, MI assumes that clients are motivated for something; according to Miller and Rollnick (2013), “No one is unmotivated” (p. 74). The practitioner’s task in MI is therefore to elicit and help cultivate the client’s proclivity toward change, a proclivity defined in MI as intrinsic motivation for change. In SDT, however, promoting intrinsic motivation is reframed as internalizing extrinsic change intentions. Vansteenkiste and Sheldon (2006) contend that it is unrealistic and perhaps even illogical for practitioners to encourage clients to voluntarily engage in activities that yield only inherent reward or satisfaction (i.e., intrinsic motivation). Just as no person can make another person engage in a behavior for the sake of pure enjoyment, no practitioner can realistically cultivate intrinsic motivation in a client.

The three methods discussed in the following sections are additional and specific approaches for enhancing motivation and promoting autonomy in persons with substance use problems and other addictions. They are not derived from, nor are they directly linked to the TTM, MI, or SDT, but all three approaches share the principles common to the TTM, MI, and SDT: Motivation is multidimensional and represents interpersonal, intrapersonal, and contextual influences; change is more often than not developmental and gradual; autonomy is to be respected and promoted; and change occurs in a nonjudgmental, compassionate, supportive, and facilitative environment.

**Harm Reduction Approaches**

Harm reduction is an autonomy-supportive practice that seeks to minimize the risk and extent of harm resulting from addictive and other high-risk behaviors (e.g., unprotected sex, medication noncompliance), and to improve quality of life (Collins et al., 2012). In many ways, harm reduction is similar to moderation-oriented treatment for alcohol abuse and alcoholism (see Chapter 6). It also is a compassionate and pragmatic set of strategies, often formulated at the grass-roots level, to reduce harm and increase well-being for individuals, communities, and society. It is particularly appropriate for persons who are not in treatment and are not highly motivated to change their behaviors (see Peavy, Cochran, & Wax, 2010). However, harm reduction psychotherapy recently has been developed to help persons with problems such as addiction (Tatarsky & Kellogg, 2012). In sum, harm reduction is a belief system and a deliberate plan of action—and it remains highly controversial.

The harm reduction approach originated outside the United States in the early 20th century as an alternative to legal sanctions for problematic substance use. In countries such as Great Britain and the Netherlands, harm reduction remains public policy to varying degrees. Examples include
federally funded needle exchange programs for injecting drug users and “assisted-heroin treatment” (see Collins et al., 2012, for a review). Harm reduction has yet to be fully embraced by policymakers in the United States. For example, although a 21-year-old ban on most federally funded needle exchange programs was lifted in December 2009 by the U.S. Congress and President Obama, the ban was reinstated by a new U.S. Congress 2 years later.

As a form of decriminalization, harm reduction was developed to address the marginalization experienced by many clients informed that abstinence was the only, predetermined, and non-negotiable goal of addiction treatment. Although abstinence is an alternative (and an ideal outcome) in harm reduction approaches, it is not the sole imperative. Using the analogy of traffic lights, Marlatt and Witkiewitz (2010) characterize harm reduction as the yellow light that “signals the driver to slow down, take caution, and notice the potential harms associated with crossing that intersection. . . . [In this way, it] may appeal to many users who are unwilling or unable to completely stop at the red light of abstinence” (p. 592). Harm reduction thus provides persons with choices; more accurately, it honors the right of persons to choose how to live their lives with minimal health risks incurred by them and by others. This stance aligns harm reduction with SDT and MI. Indeed, Whiteside, Cronce, Pedersen, and Larimer (2010) claim that “harm reduction strategies based in MI appear to be most effective” (p. 151) when working with adolescents and young adults.

Furthermore, the TTM and its stages of change dimension are typically used by harm reduction practitioners (Tatarsky & Kellogg, 2012). One way the two are used in concert is that harm reduction aims to provide some level of protection to those in the precontemplation and contemplation stages of change about their risk behavior, as well as to offer an alternative form of action and maintenance to those who reject abstinence. Harm reduction approaches are designed to modify addictive behaviors by decreasing the frequency and amount of substance use, for example, and by altering other using practices such as type of substance used and using environment. The warm turkey approach (Miller & Page, 1991) or tapering down are methods for gradually decreasing substance use (described as gradualism and abstinence eventually; Kellogg, 2003), and can include sobriety sampling whereby the person attempts to abstain for a period of time (e.g., over a weekend) on a trial basis. Substance use is not viewed as intrinsically immoral and the user is not regarded as abnormal. The focus is mostly on the problems caused by the substance use or other behavior (e.g., hoarding) than the behavior itself. In this way harm reduction methods resemble the brief interventions of MET. Other behavioral modifications associated with harm reduction include substituting a safer addictive substance (e.g., methadone, buprenorphine) for another (e.g., heroin, misused pain medications) to reduce cravings and prevent withdrawal symptoms,
Promoting Motivation and Autonomy for Personal Change

and substituting one type of paraphernalia (e.g., clean syringes for injecting drug users) for another (e.g., used or “dirty” syringes) to reduce the spread of communicable diseases such as HIV and hepatitis. The use of designated drivers, electronic cigarettes, and nicotine replacement therapy are additional harm reduction practices.

Despite its guiding principle of compassionate pragmatism and its purpose to help persons stay alive, maintain health or get better, and access services (e.g., medical care, education), harm reduction remains highly controversial because it does not forbid ongoing substance use or other high-risk behaviors (e.g., sex). As an example, a condom machine was installed in a San Francisco jail a few years ago, the first of its kind in the United States (Syllva, Harawa, & Reznick, 2010). Preliminary evaluation of this service indicated awareness of condom availability, support of condom use among prisoners, and reports that sexual activity had not increased. Housing First is another controversial program. It provides shelter for chronically homeless persons with severe alcohol problems and does not restrict on-site drinking. This program was first instituted in New York City in 1992 as an alternative to Treatment First or abstinence-based housing programs that require detoxification, sobriety, and vaguely defined housing readiness before homeless persons can gain access to independent housing (Padgett, Stanhope, Henwood, & Stefancic, 2011). Housing First offers safe housing, meals, and on-site health care services. It is a “safe haven” and a form of palliative care for homeless persons who often have co-occurring mental health and extensive medical conditions. For residents who continue to drink and may die from alcohol-related conditions, Housing First serves as end-of-life care, allowing them to die “at home” in their own bed surrounded by caring staff rather than on the street and alone (McNeil et al., 2012).

Critics of Housing First and other harm reduction programs often subscribe to a conservative and moralistic ideology and equate harm reduction with permissiveness, or the green traffic light rather than the yellow traffic light. Criminalization also is often championed. The contention is that permissive harm reduction policies and practices enable or facilitate continued, harmful substance use and other risk-prone behavior. Findings from several studies on Housing First programs, however, reveal significant reductions in alcohol use when compared to an abstinence-based Treatment First program (Padgett et al., 2011), significant decreases in days intoxicated (Larimer et al., 2009), and sizable reductions in alcohol use and alcohol-related problems over 2 years in one program (Collins et al., 2012). Furthermore, Larimer et al. (2009) reported significant and substantial cost savings for one Housing First program in Seattle, Washington: Costs to the public prior to Housing First entry (e.g., days in jail, sobering center and emergency department visits, emergency medical services calls and transports) were cut in half (from approximately $8 million to
approximately $4 million) for the 95 residents who remained in the program for 12 months. Other harm reduction programs demonstrate similar results. For example, Wodak and Cooney’s (2006) comprehensive review of needle and syringe exchange programs worldwide yielded overwhelming evidence that these programs do not promote negative consequences (e.g., greater injection frequency), are effective in reducing infection (e.g., HIV), and also are cost-effective. They also function as a point of entry or bridge to substance abuse treatment services, which qualifies them as an autonomy-supportive resource.

**Mindfulness-Based Approaches**

Mindfulness can be considered a harm reduction practice for addictive behaviors. It also is a central component in several counseling and psychotherapeutic approaches. These include dialectical behavior therapy (DBT; Linehan, 1993a, 1993b) and acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 2012). Both DBT and ACT have been applied effectively with persons who have mental health and substance use disorders. In one study (Harned et al., 2009), DBT significantly outperformed a community-based treatment in remitting substance dependence disorders (i.e., alcohol, cannabis, and cocaine) and increasing drug- and alcohol-abstinent days among persons with borderline personality disorder (BPD) and another mental health condition (primarily major depression). No other additional mental health condition represented in this study sample (e.g., anxiety, eating disorders) demonstrated similar improvement, leading the researchers to herald DBT as particularly well suited for persons with substance use disorders who also have BPD. This endorsement is important because suicidality is common among persons with BPD, and suicidality in this population is often accompanied by substance use. In an earlier study of DBT for opioid-dependent women with BPD (Linehan et al., 2002), DBT was found to reduce opiate use and retain women in treatment significantly more so than a validation-based 12-step treatment program. ACT also has demonstrated positive results for persons with substance use disorders, albeit not as convincingly as DBT. Investigations of ACT include its application for persons with comorbid alcohol use disorders and depression (Petersen & Zettle, 2009), methamphetamine use disorders (Smout et al., 2010), and nicotine dependence (Hernández-López et al., 2009; Gifford et al., 2011), as well as for problematic Internet pornography viewing (Twohig & Crosby, 2010).

Other therapies have adopted mindfulness as the core skill and have fashioned their practice around it. These include mindfulness-based cognitive therapy and mindfulness-based stress reduction. Specific to the addictions is mindfulness-based relapse prevention (MBRP; Bowen, Chawla,
Marlatt, 2011), which has demonstrated feasibility and preliminary efficacy for reducing substance use and craving during and up to 4 months after participating in the program (Bowen et al., 2009; Witkiewitz, Bowen, Douglas, & Hsu, 2013). This program is described briefly later in this section.

**State of Mindfulness**

What exactly is mindfulness? *Mindfulness* is heightened awareness of the present moment. It is the deliberate practice of paying attention to, accepting, describing, and not changing or judging one’s immediate perceptual experience (Hayes, Follette, & Linehan, 2004; Kabat-Zinn, 1994). It is staying put in the here and now. It is an openness to and an attentional focus on what is taking place in the moment, using as many senses as possible (e.g., sight, sound, smell), including attending to visceral functioning (e.g., breathing). SDT speaks of *mindful awareness* (Ryan & Deci, 2008a), understood as an openness to, and an acceptance of, internal activity, the purpose being to experience freedom from introjects or internal pressures (e.g., judgmental self-commands). This concentrated focus on, observation of, and participation in the present moment eschews any inclinations to think through or make sense of what is taking place. In this way mindfulness is an acceptance of the here and now, absorbing it for what it is, and not using it to explain past experiences or to plan ahead. Its purpose is to soak in the now, letting it be what it is, and not manipulating or otherwise controlling it for another purpose.

Mindfulness is inspired by the ancient Buddhist practices of Vipassana and Zen meditation (Chiesa & Malinowski, 2011). Although reference is made to mindfulness meditation, and meditation can be one way to develop mindfulness (Marlatt et al., 2004), the two are not entirely the same and can be practiced separately. Rather than focusing on another reality or retreating from the present moment (as can be done in meditation), mindfulness is “a way of living awake, with your eyes wide open” (Dimidjian & Linehan, 2009, p. 425). It is an attentional skill or a way of paying attention on purpose so as to reveal what is occurring internally (e.g., heart beating) and externally (e.g., touch). It is therefore not a form of mindlessness (which may be a state achieved in certain forms of meditation). Whereas meditation may have as its goal achieving deep relaxation, spiritual enlightenment, or desensitization to physical pain or anxiety, mindfulness has as its goal only mindfulness (Dimidjian & Linehan).

It is important to note that mindfulness is the way in which an individual makes direct contact with immediate experience, not with abstractions or concepts. Persons who practice mindfulness are able to control or focus their attention on the present moment. They do not control *what* is being attended to, such as deliberately trying to change internal events (e.g.,
thoughts, breathing) or external events (people); rather, they control how they attend to what is happening in and around them in the here and now. Despite there being many forms of mindfulness (see Chiesa & Malinowski, 2011), it should not be confused with contemplation or spirituality (Leigh, Bowen, & Marlatt, 2005). It is unlike certain forms of prayer and should not be confused with prayer. It is not a form of communicating with, or connecting to, a transcendent being (as may be done in certain forms of meditation), nor is it engaging with specific content of thought or experience. Furthermore, mindfulness does not seek to make something happen, such as “emptying” or ridding oneself of negative thoughts (e.g., urges to use), nor to prevent certain kinds of behavior (e.g., gambling). It is, as Chiesa and Malinowski describe, the process and state of “getting used to” or “familiarizing oneself” with immediate sensations and experiences.

From a mindfulness perspective, addiction is an attempt to take hold of, or to avoid, cognitive, affective, or physical experiences (Witkiewitz et al., 2013). A person may continue to use a substance or to gamble, for example, in order to claim as one’s own or to secure possession of, and to hold in perpetuity, the euphoric high this behavior produces. This would be an addiction characterized by manufacturing and hoarding positive experiences. Addictive behavior also may be maintained to avoid emotional pain such as shame (Luoma, Kohlenberg, Hayes, & Fletcher, 2012). Either way, addiction, unlike mindfulness, is coerced and nonautonomous behavior that has as its intent the control and manipulation of firsthand experiences. Mindful behavior is nonpossessive and nonreactive; it holds in abeyance any attempt to change one’s immediate circumstance, accepting the here and now as a momentary visitor and remaining alert and open to subsequent immediate experiences. It is in stark contrast to addictive behavior characterized as automatic, impulsive, and habitual, or compulsive. Adopting a more mindful orientation and practice signifies a new form of motivation that is derived from within and consistent with one’s values (i.e., autonomous). Consistent with SDT, mindfulness is therefore self-regulated and authentic behavior.

**Mindfulness-Based Interventions for Addictive Behaviors**

Mindfulness skills and practices vary widely (see Chiesa & Malinowski, 2011), but generally include an explicit focus on present-centered awareness, such as paying attention to one’s breathing and concentrating on one sense in particular (e.g., hearing) for a short period of time (e.g., 5 minutes). Because mindfulness has its roots in Buddhist meditation and because meditation can foster mindfulness, guided meditation that “scans” the body (e.g., abdomen, toes, arms) is also used. In MBRP (Bowen et al., 2011), mentioned earlier, a 20- to 30-minute body scan meditation is conducted at
the start of each group session. This type of practice is particularly impor-
tant for persons with substance use problems and other addictive behaviors because, as Bowen et al. (2011) explain:

Experiences of reactivity, cravings, and urges often manifest physically before the subsequent chain of thoughts or reactions. . . . Thus, coming back to physical sensations is a way of reconnecting the present experience and can be a first step in shifting from habitual, reactive behavior to making more mindful choices. (p. 37)

Overall, MBRP is designed to promote increased awareness of triggers for use, habitual patterns of using, and “automatic” reactions that appear to control a person’s daily living. It is an aftercare program for persons who have completed outpatient or inpatient treatment for substance use disorders. It takes place in 2-hour weekly group sessions over an 8-week period. Sessions provide instruction on, and practice of, mindfulness skills to implement when urges, cravings, and other triggers to use arise; participants also are encouraged to adopt mindfulness as a recovery lifestyle. In addition to breathing exercises and body scan meditation, skills taught and practiced in MBRP include engaging in mindful movement postures (i.e., specific stretching exercises), urge surfing (i.e., staying with and “riding” an urge to use through its fluctuations in intensity; Marlatt & Gordon, 1985), and exercising SOBER breathing space. SOBER refers to the five sequential tasks of Stopping or slowing down when experiencing a trigger to use, Observing what is happening in the moment, focusing on your Breathing, Expanding your awareness of other sensations (e.g., clammy hands, sweating), and Responding (vs. reacting) with awareness in a healthy, self-compassionate way.

Any of these mindfulness skills can be incorporated into other prevention and treatment practices and adapted for specific populations and settings. For college students interested in changing their nicotine smoking behavior, for example, Bowen and Marlatt (2009) instructed students to pay attention to their thoughts, sensations, or urges without attempting to change or deflect them when presented with cigarette cues. The urge-surfing exercise (Marlatt & Gordon, 1985) was described, and students were encouraged to picture their urge as a wave and to imagine riding the wave as it naturally crested and then subsided, rather than fighting the urge or giving in to it (because urges, like waves, gradually decrease in intensity as time goes by). Compared to a control group, students in this study who completed the mindfulness exercises reported 7 days later (1) smoking significantly fewer cigarettes per day, and (2) a significantly weaker connection between experiencing a negative affect (e.g., anxiety) and the urge to smoke (i.e., less reactivity).
In describing MBRP, Bowen et al. (2011) note that it is not in conflict with the philosophy of 12-step programs, such as Alcoholics Anonymous (AA) and Narcotics Anonymous (NA). Several areas that overlap include the shared emphasis on acceptance (“It is what it is”), relinquishing personal control, and valuing prayer and meditation. Areas of divergence, however, are MBRP’s nonendorsement of (1) diagnoses or any other labels of people or conditions interpreted as either good or bad (e.g., addict, disease, alcoholic), and (2) abstinence as the predetermined and requisite goal for treatment or aftercare.

### 12-Step Facilitation

Unlike AA and other 12-step, self-help recovery programs (e.g., NA), 12-step facilitation (TSF; Nowinski & Baker, 2003; Ries, Galanter, & Tonigan, 2008) is an intervention delivered by a treatment professional to persons enrolled in a treatment program. It is intended to encourage clients to become active participants in sober social support networks. Specifically, TSF assists clients in making use of AA and other mutual aid societies while they are in treatment, as well as during aftercare and beyond. This means not only attending AA fellowship meetings, but becoming actively involved in or “working” the program by (1) learning and adopting the philosophy of AA (including the 12 steps), (2) securing a sponsor (i.e., enlisting the support of a fellow member of AA with at least 1 year of consecutive sobriety), and (3) identifying oneself as a member of AA or another 12-step program. To accomplish these three components, facilitating the process of AA involvement is essential; it is not enough to simply refer clients to AA meetings. TSF is designed as a time-limited (12 to 15 sessions) treatment delivered in either individual or group format, and is based on the philosophy of AA, including the 12 steps of recovery. Abstinence is therefore the intended outcome of treatment.

As with MET, TSF was developed in the early 1990s for the Project MATCH study. Since then, TSF has been subjected to extensive research and was recognized by SAMHSA’s NREPP in 2008 as an evidence-based practice for the treatment of substance use concerns. Nowinski (2012) outlines its principles and practices to include (1) honoring the locus of change in 12-step fellowships (i.e., not in the skills of the counselor), (2) promoting the client’s “spiritual awakening” as part of AA fellowship involvement, (3) reinforcing practical methods for achieving and maintaining sobriety, (4) working collaboratively with clients (and not making 12-step meeting attendance a requirement of treatment), and (5) maintaining the focus of treatment on helping clients begin the process of 12-step recovery. Concepts discussed in individual or group TSF treatment are a humble acceptance of
one’s powerlessness over alcohol and other drugs (consistent with the first step of AA) and surrender of personal control or willpower to a higher power (consistent with Steps 2 and 3 of AA). Reading material (e.g., AA “Big Book”) is provided and reviewed in session with clients, and client experiences in AA and other 12-step meetings are processed.

Since the mid-1990s there has been considerable and more sophisticated research conducted on AA and 12-step facilitation, which Kelly and Yeterian (2012) depict as an “empirical awakening.” Although all three treatments in the Project MATCH study (MET, TSF, and cognitive-behavioral treatment, CBT) were associated with improved drinking outcomes, TSF fared better in achieving and maintaining abstinence than did MET or CBT for clients without psychopathology and for those who sought meaning in life (Project MATCH Research Group, 1997). Despite caution about the clinical significance of these and other findings (Ferri, Amato, & Davoli, 2006), the preponderance of evidence suggests beneficial outcomes for persons who attend AA and maintain active involvement while they are in treatment and after treatment completion (Moos & Timko, 2008). In their 16-year study of previously untreated individuals with alcohol dependence, Moos and Moos (2006) reported that participation in AA during and after addiction treatment was associated with better alcohol-related outcomes (e.g., abstinence) and improved self-efficacy. The longer these persons remained in AA (even after treatment had ended), the more likely they were to have achieved remission after 16 years. They also were likely to report reductions in anger (Kelly, Stout, Tonigan, Magill, & Pagano, 2010) and in impulsivity and legal problems (Blonigen, Timko, Moos, & Moos, 2009; Blonigen, Timko, Finney, Moos, & Moos, 2011).

What explains the benefit of AA beyond treatment? Moos (2008) offers several explanations, which he categorizes as active ingredients: receiving support, having clear goals, participating in structured group activities, having abstinence-oriented norms and role models, being involved in alternative rewarding activities, and focusing on self-efficacy and coping skills. Moos and Moos noted that participation in some form of addiction treatment likely served as motivation for individuals to enter AA. This finding reinforces the beneficial effects of programs such as TSF.

**Chapter Summary**

Human motivation has been described in this chapter as complex and multidimensional. It is comprised of intrapersonal, interpersonal, and contextual influences. No one thing or person is responsible for another’s purposeful behavior, either in the direction of maintaining addictive behaviors or changing addictive behaviors; many factors contribute. This
is true regardless of the theory or model of addiction from which one operates. Among the factors that contribute to behavior change are prevention and treatment methods that honor and promote a person’s right to choose what he or she prefers—that is, what a person believes is best for him or her. These are the autonomy-supporting practices of MI and those associated with the TTM and SDT. Additional practices that promote autonomy and have been found to enhance motivation to change addictive behaviors, to varying degrees, are harm reduction, mindfulness-based approaches, and TSF. There is compelling evidence, based on well-designed and current research, to support the continued adoption of these methods and practices.

The evidence is just as clear about what does not influence or motivate change in addictive behaviors. These include enlightenment (including fact-based education and warnings), confrontation (including coercion), and punishment (Miller, 2006). For example, Apodaca and Longabaugh (2009) found that therapist use of MI-inconsistent behaviors (e.g., confrontation, offering advice without permission) predicted poorer substance use outcomes. In addition, Pavey and Sparks (2009) reported that among college students, a greater perceived threat to their decision-making freedom (i.e., perception of threat to autonomy) was related to less positive attitudes toward reducing alcohol consumption. And, in their study of 672 problem drinkers followed over 11 years (81% of whom maintained their participation), Delucchi and Kaskutas (2010) identified several factors that predicted increased drinking, among them (1) experiencing more social consequences of drinking over time, (2) receiving alcohol specialty treatment, (3) receiving suggestions to get help for one’s drinking, and (4) the number of heavy drinkers and drug users in their social network. Factors that predicted less drinking over time were the number of contacts across medical, mental health, criminal justice, and welfare systems; and attendance at AA meetings. The latter reinforces the efforts of TSF.

Nace et al. (2007) contend that socially sanctioned mechanisms of coercion (e.g., court-mandated treatment, suspension or threatened loss of licensure for certain professionals, drug testing in sports and other professions) are effective, specifically in initiating treatment for individuals. However, the arguments for coercion appear to be consistent with their view of addiction as a disease (e.g., “Coercion involves an acceptance of the involuntary aspects of addiction,” p. 21) and are subject to hyperbole (e.g., “The swift and predictable punishment and rewards meted out during [drug court] hearings are psychologically powerful,” p. 17). In addition, the evidence presented by Nace et al. to support coercive methods is not extensive, and they appear to equate coercion with treatment, that is, not just as a primary or sole means to enter or initiate treatment (as in a strategy for treatment). Their assertions run counter to the principles of SDT and harm reduction, as well as the “spirit” of MI.
Given the scientific revolution in the addictions field over the past 30 years, we believe that it is time for practitioners to embrace a panoramic view of human motivation rather than the traditionally myopic view. The latter view is quite limiting and inaccurate (i.e., one is not either motivated or unmotivated), equates the motivation of clients in treatment with their referral source (Wild et al., 2006), and shortchanges prospective and current service recipients of beneficial care. The former view, by contrast, reflects the openness of true scientific inquiry and, we propose, a more humanistic and compassionate stance toward care. It prioritizes human subjectivity, thereby honoring and promoting autonomy and concomitantly offering options and alternatives to facilitate change. Embracing this evidence-based panoramic view of human motivation and change processes is likely to extend addiction services to a wider range of people that might otherwise scoff at and dismiss efforts to control their behavior. It is the compassionate, autonomy-supporting approach that facilitates motivation to change.

**REVIEW QUESTIONS**

1. Motivation is defined as purposeful behavior, and more specifically, as that which energizes and directs action in the present moment. Explain the importance of the present moment to purposeful behavior.

2. How do a person’s values influence motivation? How can a prevention specialist or counselor make use of a person’s values to facilitate motivation?

3. What are the stages of change in the TTM? How are they useful in facilitating motivation? What are the criticisms of the stages of change?

4. Referring to its fourfold “spirit,” define MI. Identify the four fundamental skills used in MI (referred to by the acronym OARS), and name the seven dimensions of verbalized motivation (change talk) in MI, referred to by the acronym DARN CAT.

5. How does MET differ from MI?

6. According to SDT, what are the three basic and universal human needs?

7. How does autonomous motivation differ from controlled motivation? Which one contributes to self-regulated behavior? How does extrinsic reinforcement curtail self-regulated behavior? Does this imply that contingency management is in direct opposition to SDT?

8. If MI and SDT were to “get married” (even though Miller & Rollnick, 2012, say that this is “premature”), how would they resolve their differences on the topic of amotivation?
9. Define harm reduction and provide five examples of harm reduction practices. How do these practices promote autonomy?

10. How does the practice of mindfulness facilitate motivation? What are its benefits in the prevention and treatment of addiction?

11. Define TSF. How is it similar to, and different from, attending self-help groups such as AA?

12. From your reading of the entire chapter, what specific practices forestall human motivation and squelch autonomous behavior? By contrast, what specific practices facilitate motivation and promote autonomy?
CHAPTER 12

Linking Theory, Evidence, and Practice

Views of addiction and responses to it have been, and continue to be, shaped by the political and economic climate of the day. Today’s climate can be described as one of accountability. Budget deficits, rising health care costs, and current economic instability in the United States explain public health and health care policies that require all practitioners to demonstrate that their work is effective—effective in terms of improved prevention and treatment outcomes, as well as cost savings. When practice is not effective, both the individual and society suffer consequences. The individual continues to have life difficulties, and society pays a high opportunity cost by relying on strategies and services that do not have the highest return on investment (Brownson, Fielding, and Maylahn, 2009).

Recognition that ineffective practices need to be replaced led to the introduction of evidence-based practice (EBP) in many health and human services fields in the late 1990s (Brownson et al., 2011). This new principle is based on the expectation that practitioners will use only those practices that have proven track records of effectiveness. More often than not, these track records refer to consistently positive results produced by methodologically sound research investigations. Thus, the new standard calls for only those practices that can be substantiated by evidence to be used in health and human service settings, including substance abuse prevention and treatment programs. The delivery of these services is what is known as EBP.

STANDARDS OF EVIDENCE

When most people hear the word evidence, they think of information used in legal proceedings—which may include witness accounts of a crime, testimony from a law enforcement officer or expert, reports from a forensic
scientist, and so forth. In the fields that comprise health and human services, evidence is some form of data produced by professional practice, assessment, evaluation, and/or research. These data are often referred to as outcomes and are based on behavioral indicators, such as client report of, or biological markers noting, abstinence, court records that reflect no new arrests or charges over a certain period of time, actual costs of conducting a prevention program, and family or staff observation of client medication compliance. Unfortunately, the quality of evidence is subject to interpretation. Carroll (2012) notes that what constitutes clinically meaningful outcomes remains in dispute in the substance abuse treatment and research fields. Is simply having a substance-abusing and formerly treatment-resistant loved one attend an intake session and then one subsequent treatment session sufficient to warrant a family intervention effective? Is a client report of problem-free substance use at the end of treatment suggestive of treatment success, or must there be a follow-up period to determine whether or not the effects of treatment have endured? If there is a follow-up period, how long must it be for the effects of treatment to be considered lasting? The standards used for judging evidence vary tremendously, and frequently are influenced by professional training or stakeholder status. For example, an epidemiologist may employ extremely high standards of evidence, whereas a consumer or client may accept low standards for judging information to be credible.

Chambers and Kerner (2006) place different types of health data on a continuum ranging from subjective, representing low credibility, to objective, representing high credibility. On this continuum, information in the form of personal experiences, testimonials, and marketing data (subjective sources) were identified as representing low standards of evidence. In contrast, the highest standards of evidence (objective sources) were provided by systematic reviews of scientific literature. In between these two extremes were isolated studies from the scientific literature, program evaluations, and studies relying solely on qualitative methods. Because there are no absolute criteria for determining what type of information constitutes evidence, practitioners, stakeholders, and consumers therefore need to be cautious about accepting claims that a practice is evidence-based. In some quarters, the term is now used loosely and without substantiation. On occasion, use of the term evidence-based practice may even represent a form of propaganda (Gambrill, 2010).

**The Relationship between Theory, Evidence, and Practice**

Under ideal circumstances, theory, evidence, and practice should inform one another in a continual process that builds a body of knowledge. The
translation of theory and evidence into EBP should always be in flux. As Figure 12.1 depicts, theory is comprised of constructs that should be tested, and when supported by data, should be adopted and implemented into routine practice. However, if the evidence does not support the theory under scrutiny, then the theory needs revision (notice two-way arrow involving theory and evidence in Figure 12.1). Consistent with the attributes of a good theory mentioned in Chapter 1, West (2006) stipulates: “If there remain genuine counter-examples to the theory, then those parts of the theory must be wrong and need to be altered” (p. 192). The newer concept of practice-based evidence that has originated from direct service providers may be extremely useful for revising theory and improving practice, primarily because of its relevance to representative community and clinical settings (Green, 2008). Practice-based evidence is a “bottom-up” or “grassroots” effort that enlists practitioners and clients in effectiveness research of routine practice, including cost–benefit analyses. Thus, theory should be responsive to data generated from (1) research protocols such as randomized control trials and (2) program evaluation conducted in representative or conventional practice settings. The former is often characterized as efficacy research, the latter as effectiveness research.

Although the adoption and implementation of EBP in medicine, mental health care, and public health is relatively new, by comparison, EBP in the addiction field is much more recent. This delay is explained in part by history. Addiction remains a stigmatized condition, and the addiction treatment field continues to be heavily influenced by practitioners who

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**FIGURE 12.1.** Ideal relationships between theory, evidence, and practice in substance abuse prevention and treatment.
themselves are in recovery from the condition. And even though alcoholism and drug addiction are often considered to be diseases, Miller, Sorensen, Selzer, and Brigham (2006) note: “Treatment remained segregated in specialist treatment programs with little connection to medical and mental health services” (p. 26). This practice continues today, exemplified most notably in the treatment of opioid dependence. Federal law stipulates that methadone (a synthetic opioid agonist medication taken daily to treat the symptoms of opioid dependence, e.g., craving, withdrawal) can be dispensed only in opioid treatment programs, and many private insurance and Medicaid plans are reluctant to purchase methadone services, instead referring individuals to publicly funded treatment facilities (McCarty et al., 2010).

Recent developments point to increasing reliance on EBP in substance abuse prevention and treatment. For example, the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act, passed by the U.S. Congress in 2008, now requires health insurance companies to cover mental health and addictions treatment equivalent to physical health coverage. More recently, the passage of the Affordable Care Act by the U.S. Congress in 2010 and upheld by the U.S. Supreme Court in 2012 will extend these requirements to Medicaid plans operating through state-based insurance exchanges. Although highly controversial, Barry and Huskamp (2011) indicate that this health care reform has the potential to address the longstanding system fragmentation wherein persons with comorbid disorders are treated in separate service settings and by different service providers. Instead of bifurcated care, this new law is intended to usher in improved coordination of care and the implementation of integrated care models. It also mandates that new insurance plans cover smoking cessation without any patient cost sharing, which, according to Hockenberry et al. (2012), will not raise short-term health care costs.

These two pieces of federal legislation signal further acknowledgment of addiction as a medical condition and could be said to represent a victory for addiction advocacy groups and the recovery movement. They also have significant implications for the addiction treatment field. Specifically, a more sophisticated addictions treatment workforce will be needed to practice effectively in an increasingly regulated and ever-widening treatment industry. As Beutler (2009) notes, no longer can personal experience suffice as the sole or primary standard for justifying treatment decisions. Substance abuse counselors will be expected to be familiar with a wide range of services and to be able to demonstrate competency in several EBPs, especially those that target co-occurring disorders. Toward that end, it is projected that by 2014 all counselors in the addictions field will be required to possess at least a master’s degree (Knopf, 2011).

According to Brownson et al. (2011), there is a consensus that EBP needs to be defined within a context. This has led professions in the health
and human services to define EBP in different ways. For example, the American Psychological Association (APA) has defined EBP as “the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences” (APA Presidential Task Force on Evidence-Based Practice, 2006, p. 273). Notice in this definition that research findings do not constitute the only evidence; rather, clinician and client factors also must be considered (e.g., client cultural diversity). This integrative perspective is in contrast to earlier references to empirically supported treatments (ESTs). The distinction between these two is very important. As the name suggests, ESTs pertain to specific techniques or interventions only. EBP, on the other hand, is inclusive of client and clinician factors, treatment setting and interventions, and research findings.

In the field of public health, Kohatsu, Robinson, and Torner (2004) defined EBP as “the process of integrating science-based interventions with community preferences to improve the health of populations” (p. 419). This population-level definition attempts to integrate scientific evidence with environmental and organizational considerations, available resources, and perceived needs of communities. These contrasting definitions point out that the translation of science into EBP will take distinct forms in different fields.

EBP is not without controversy. Criticisms include (1) the concern that too much emphasis is placed on science and not on context and resources; (2) questions about how to weigh evidence; and (3) the often cost-prohibitive implementation of many EBPs. Because criteria for determining an EBP originated in clinical medicine and follow guidelines similar to those used to determine safe and effective medications, research studies that provide evidence for a certain practice have been criticized for being unnecessarily rigorous and using nonrepresentative participants or populations. Although these randomized clinical/control trials (RCTs) may be considered the “gold standard” of scientific research, they often produce science that cannot be easily transported to representative settings and populations. Furthermore, EBP implementation is sometimes mandated by funders or policymakers, representing a “top-down” approach and leaving many prevention and treatment practitioners with a distasteful impression of these practices.

Despite controversies about EBP, it is here to stay. In its December 2008 Policy Framework to Strengthen Community Corrections, the Pew Center on the States (a division of The Pew Charitable Trusts; see www.pewcenteronthestates.org) reported that eight states had passed legislation to identify and implement EBPs in their respective state’s correctional system. One of these states was Oregon, which in 2003 began graduated funding of EBP treatment and prevention services, starting with 25% of all services provided in 2005–2007 to 75% in 2009–2011. By the end of 2011, at least 75% of all Oregon state monies for programming in mental health,
addictions, and corrections were spent on EBP programs. Since 2008, more states have passed similar legislation, among them Kentucky and Arkansas.

Beyond the field of corrections, it is increasingly likely that many states will implement what is referred to as performance-based contracting whereby state funding sources, such as Medicaid, will allocate funds to treatment providers only when specified performance measures have been met. Performance measures assess meeting goals for program capacity, demonstrating client retention in and completion of treatment, decreased client incarceration, and increased client employment and abstinence (McClellan, Kemp, Brooks, & Carise, 2008). States such as Maine that have enforced these contingencies and for which there are data indicate increased efficiency and effectiveness, but decreased admission of service recipients with severe disorders; other states (e.g., Delaware) have not demonstrated a decline in admission of clients with severe disorders. On the contrary, Delaware demonstrated an increase in admission of clients with severe disorders, which was likely due to an increase in program capacity (e.g., extending treatment hours, establishing additional satellites).

Although performance-based contracting and EBP may be thought of as one and the same, they are not. Straus, Richardson, Glasziou, and Haynes (2005) report that evidence-based medicine is not necessarily a cost-saving endeavor because “providing evidence-based care directed toward maximizing patients’ quality of life often increases the costs of their care and raises the ire of health economists” (p. 8, emphasis added). Therefore, adopting and implementing an EBP may not necessarily reflect performance-based contracting and may not always result in reduced costs. The same also may be true for services derived from practice-based evidence. The “evidence” must reflect improved client or consumer outcomes, not necessarily cost savings. Therefore, EBP and practice-based evidence are intended to benefit the recipients of an intervention, not only or primarily the providers of care. According to Carroll (2012), the original aim of disseminating EBPs was to improve client outcome. The challenge is to identify EBPs for prevention and treatment that, in the long run, also reduce costs. Many are included in the National Registry of Evidence-Based Practices and Programs (NREPP), sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA). This free access and searchable database (www.nrepp.samhsa.gov) captures more than 220 recognized interventions and exemplifies one of the purposes of EBP: to bridge the divide between science and practice.

The process of connecting practitioners to science is known as technology transfer (see Chapter 1). Because EBPs are alternatives to traditional or conventional methods of prevention and treatment, they can be considered innovations. Therefore, technology transfer also is referred to as adoption of innovation and involves the three steps or phases of training, adoption, and implementation (Flynn & Simpson, 2009). The process of encouraging
the adoption of, and investment in, new practices (e.g., EBPs) is often a long-term endeavor. As may be true for most innovations, EBPs often are viewed with suspicion upon first introduction. Training is thus an essential component of this process and must address the preferences and practical needs of practitioners, such as accessibility (including cost), credentialing benefits (if any), and the acquisition of practical knowledge and skills.

Although adoption describes the entire process, it also is a specific step of testing and trial learning, and it involves decision making and action taking. According to Flynn and Simpson (2009), these two activities in the adoption phase are enhanced when leadership support is available to facilitate the entire adoption process. It also requires partnerships among various systems (e.g., local and state governments) that may result in the discontinuation of longstanding programs and in the targeting of specific interventions (Schmidt et al., 2012).

Innovations and other EBPs are more likely to be adopted and sustained when practitioners perceive them to have more benefits than shortcomings (including the flexibility or adaptability of an EBP). Furthermore, innovation will occur when resistance and barriers to change are low. During the implementation phase of technology transfer, the adopted innovation or EBP is enforced and conducted on a routine basis. For the EBP to endure and remain viable, the program must be able to sustain it (financially, maintaining a positive work climate), and stakeholders (clients, administration, and practitioners) must view it as effective and feasible. Maintaining strong partnerships among various parties (e.g., funding sources and service providers) is also essential. Although it is a formidable undertaking, the process of implementing EBPs on a wide scale in the addictions field is not impossible (Schmidt et al., 2012).

**Chapter Summary**

Despite investments in technology transfer initiatives, it is our view that insufficient resources are being directed to the implementation of EBP today. Carroll (2012) notes that EBPs “are far from universally available and competently implemented” (p. 1031). Funding sources, leaders in prevention and treatment service provision (e.g., hospital administrators, county mental health and recovery boards), training programs, credentialing bodies, and other professional groups need to invest in a revitalized effort to enhance the quality and consistency of EBP training and delivery in substance abuse prevention and treatment. The public—current and future consumers of prevention and treatment services—need and deserve such quality care.

This book is intended to address the need for improved prevention and treatment services in the addictions field. It is a mixture of theory, evidence,
and practice. It is this kind of mixture—adopted, implemented, and pro-
moted by practitioners and system leaders alike—that is necessary to pro-
mote real and lasting change for persons and their families who struggle
with addictions.

**REVIEW QUESTIONS**

1. What societal forces have ushered in EBP in the health and human services?
2. Why is there not one standard for evaluating evidence?
3. What is the ideal relationship between theory, evidence, and practice?
4. What is meant by practice-based evidence and how does it differ from evidence-based practice?
5. How do the definitions of EBP in psychology and public health differ?
6. What conditions facilitate the adoption and implementation of EBP?


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