UPDATED EIGHTH EDITION

Drugs, Behavior, and Modern Society

CHARLES F. LEVINTHAL

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For my grandchildren

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Brief Contents

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Preface

In today's world, drugs and their use have the potential for good and for bad. As a society and as individuals, we can be the beneficiaries of drugs—or their victims. This perspective continues to be the message of *Drugs, Behavior, and Modern Society*, Eighth Edition. As has been the case since the first edition, this book introduces the basic facts and major issues concerning drug-taking behavior in a straightforward, comprehensive, and reader-friendly manner. A background in biology, sociology, psychology, or chemistry is not necessary. The only requirement is a sense of curiosity about the range of chemical substances that affect our minds and our bodies and an interest in the challenges these substances bring to our society and our daily lives. These challenges can be framed in terms of three fundamental themes.

- **THE ROLE OF DRUG-TAKING BEHAVIOR THROUGHOUT HISTORY**—First of all, present-day issues concerning drug misuse and abuse are issues that society has confronted for a long time. Drugs and drug-taking behavior are consequences of a particularly human need to feel stronger, more alert, calmer, more distant and dissociated from our surroundings, or simply good. It is the misuse and abuse of chemical substances to achieve these ends that have resulted in major problems in the United States and around the world.
- **THE DIVERSITY IN PSYCHOACTIVE DRUGS IN OUR SOCIETY**—There is an enormous diversity among drugs that affect the mind and the body. We need to educate ourselves not only about illicit drugs such as cocaine, amphetamines, heroin, hallucinogens, and marijuana but also about legally available drugs such as alcohol, nicotine, and caffeine. *Drugs, Behavior, and Modern Society* has been designed as a comprehensive survey of all types of psychoactive drugs, addressing the issues of drug-taking behavior from a combination of psychological, biological, and sociological perspectives.
- **THE PERSONAL IMPACT OF DRUG-RELATED ISSUES IN OUR LIVES**—Finally, we need to recognize that, like it or not, the decision to use drugs is one of life's choices in contemporary society, regardless of our racial, ethnic, or religious background, how much money we have, where we live, how much education we have acquired, whether we are male or female, and whether we are young or old. The potential for misuse and abuse is a problem facing all of us.

New To This Edition

Chapters in the eighth edition of *Drugs, Behavior, and Modern Society* about particular drugs have been grouped not in terms of their pharmacological or chemical characteristics but, rather, in terms of how readily accessible they are to the general public and today's societal attitudes toward their use. The last section of the book concerns itself with prevention and treatment. In addition, several special features throughout the book will enhance your experience as a reader and serve as learning aids.

By the Numbers . . .

At the beginning of each chapter, a feature called **By the Numbers . . .** provides an often surprising and provocative insight into current viewpoints and research. It is presented in a brief, quantitative format that draws you into the chapter and sets the stage for further exploration.

Quick Concept Checks

Sometimes, when the material gets complicated, it is good to have a quick way of finding out whether you understand the basic concepts being explained. Each chapter of this book includes, from time to time, a **Quick Concept Check**, where you can see in a minute or two where you stand.

Portraits

Seventeen **Portrait** features, one in each chapter, take you into the lives of individuals who either have influenced our thinking about drugs in our society or have been affected by drug use or abuse. Some of these people are known to the public at large, but many are not. The subjects of these Portraits include a brutal drug trafficker (Pablo Escobar, Chapter 2), a movie star (Robert Downey Jr., Chapter 4), a convicted killer (David Laffer, Chapter 5), a cultural icon (Timothy Leary, Chapter 6), and a depressive U.S. President (Abraham Lincoln, Chapter 15). All the Portraits put a human face on discussions of drugs and behavior. They remind us that we are dealing with issues that affect real people in all walks of life, now and in the past.

Drugs . . . in Focus

There are many fascinating stories to tell about the role of drugs in our history and our present-day culture, along with important facts and serious issues surrounding drug use. A total of 26 **Drugs . . . in Focus** features are presented

in the Eighth Edition. The topics of these features cover a wide range, from questions about the origins of the word *coca* in Coca-Cola (Chapter 4) and possible hallucinogenic witchcraft in seventeenth-century Salem, Massachusetts, (Chapter 6), to future possibilities of gene doping in the Olympics (Chapter 12) and the present-day use of "truth serum" in terrorist interrogations (Chapter 13).

Health Line

Helpful information regarding the effectiveness and safety aspects of particular drugs, specific aspects of drug-taking behavior, and new medical applications can be found in 22 **Health Line** features throughout the book. Health Line topics include understanding the neurological basis for drug craving (Chapter 3), the controversy over the use of stimulant medications as "smart pills" (Chapter 4), concerns over a new synthetic marijuana called Spice (Chapter 7), the risks of smoking mentholated cigarettes among African Americans (Chapter 10), "doctor-shopping" and prescription pain medications (Chapter 14), and alcohol prevention programs like Alcohol 101 on college campuses (Chapter 16), to name a few.

Health Alert

Information of a more urgent nature is provided in 14 **Health Alert** features. You will find important facts that you can use to recognize the signs of drug misuse or abuse and ways in which you can respond to emergency drug-taking situations, as well as useful Internet links where you can go for assistance. Health Alert topics in the Eighth Edition include strategies to avoid adverse effects of drug-drug and food-drug combinations (Chapter 3), the risks of cocaine combined with alcohol (Chapter 4), emergency guidelines for adverse reactions to LSD (Chapter 6) or alcohol (Chapter 8), and the dangers of Rohypnol as a date-rape drug (Chapter 13).

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- **MyTest**—an electronic format of the Test Bank to customize in-class tests or quizzes. Visit: http://www.pearsonhighered.com/mytest.

An Invitation to Readers

I welcome your reactions to *Drugs, Behavior, and Modern Society*, Eighth Edition. Please send any comments or questions to the following address: Dr. Charles F. Levinthal, Department of Psychology, 135 Hofstra University, Hempstead, NY 11549. You can also communicate by fax at 516 463-6052 or at the following email address: charles.f.levinthal@hofstra.edu. I look forward to hearing from you.

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Charles F. Levinthal

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Chapter 1
Drugs and Behavior Today

Learning Objectives

1.1 Analyze the contradiction in social messages regarding drug abuse

1.2 Examine the two basic ways of looking at drugs and behavior

1.3 Report the origins and history of drugs and drug-taking behavior

1.4 Discuss the widespread and varied usage of drugs in the nineteenth century

1.5 Examine the link between the medical advancement in the area of drug dependence

1.6 Recognize the attitude difference toward drug-taking behavior in the twenty-first century and in earlier times

1.7 Review the present-day patterns of drug use in the United States

1.8 Examine the factors that influence drug-taking behavior

1.9 Enumerate the current problems with club drugs as well as the nonmedical uses of prescription pain relievers and prescription stimulant medications use

Mike was seventeen, soon to be a high school senior—an age when life can be both terrific and terrifying. He looked at me with amazement, telling me by his expression that either the question I was asking him was ridiculous, or the answer was obvious. "Why do kids do drugs?" I had asked.

"It's cool," he said. "That's why. Believe me, it's important to be cool. Besides, in my life, drugs just make me feel better. Smoking some weed, chilling out with a little Vicodin, spinning with some Addies—it's a way of getting away from stuff. You know that everybody does it. At least all of my friends do it. And it's easy to get them. A helluva lot easier than beer."

The conversation was over. But as he started to leave, Mike seemed to notice the concern on my face. "Don't worry about me," he said with a smile, "I can handle it. I can handle it just fine."

There is no question that we live in a world where drugs are all around us. Thousands of Internet web sites offering information about drug use are just a click away. We are continually bombarded with news about drug-related arrests of major drug traffickers and ordinary citizens, news about popular celebrities and their latest involvement with drugs, and news about drugs intercepted and confiscated at our borders and widespread drug use in the major cities and small towns of America.

It also seems impossible to avoid the reality of drugs in our personal lives. One in four adults in the United States, according to one survey, report that drugs have been a cause of trouble in their family. At a time when the economy and related matters dominate our concerns about the present and the future, about two out of three Americans continue to worry about drug use either a fair amount of time or a great deal. In school, you have been taught the risks involved in drug use, and most of you have contended with the social pressure to engage in drug-taking behavior with your friends. You may or may not have been successful in doing so. You also may have noticed your local pharmacy starting to look increasingly like a bank, with the installation of panic alarms, bulletproof glass, and security cameras, as pharmacists turn to protecting themselves from people robbing them for their supplies of oxycodone and other prescription pain medications.[1]

By the numbers . . .

51,867	On an average day in 2013, the number of U.S. adolescents, aged 12 to 17 years old, who binged on alcohol
2,553	The number in 2013 who smoked a cigarette for the first time. Average age: 18 years old.
425,000,000 (as of Jan. 20, 2015)	The number of results that come up from searching the word "drugs" on Google.®

SOURCE: Information from the Google® search engine, 2015. Center for Behavioral Health Statistics and Quality (2014). *Results from The National Survey on Drug Use and Health: Summary of national findings and detailed tables.* Rockville, MD: Substance Abuse and Mental Health Services Administration, Tables 2.43A, 4.6B, and 4.13B.

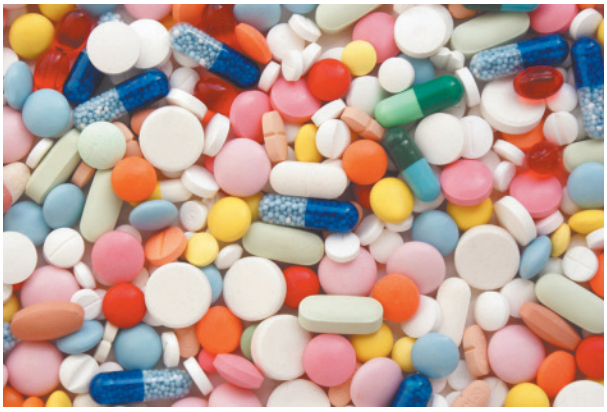
Making matters more complicated and difficult for us, drug-related problems in our contemporary society extend beyond illegal drugs, such as heroin, cocaine, amphetamines, LSD and other hallucinogens, and (except for certain U.S. states) marijuana. In fact, while many of these drugs continue to wreak havoc on lives and communities throughout America, it can be argued that the adverse effects associated with legally sanctioned drugs such as alcohol, nicotine, and certain prescription and nonprescription medications are more far-reaching. The abuse of these drugs affects far greater numbers of people, despite our efforts to regulate their use. Here are some facts about *legally sanctioned* drugs as we proceed through the second decade of the twenty-first century in America:

- Regular consumption of alcohol often begins in junior high school or earlier, despite the fact that twenty-one is the minimum legal age for purchasing alcoholic beverages. In the United States alone, more than 38 million adults, one in six in the population, admit to having binged on alcohol at least four times in the last month, with more than 80,000 deaths each year attributed to excessive drinking. One in 10 children and teenagers in the United States (about 7.5 million) live with at least one parent who has an alcohol problem. On college campuses nationwide, binge drinking continues to be a major problem and a significant factor in date-rape assaults and other forms of violent behavior. We pay a heavy price for problems associated with chronic alcohol abuse and alcoholism on a social and personal level.
- About one in twelve high school seniors report smoking cigarettes daily, despite the fact that it is illegal for those younger than eighteen years old (nineteen years old in some U.S. states) to purchase tobacco products. While the current prevalence rate is less than half the prevalence rate in 1990s when the figure was about 1 in 5, underage smoking remains a significant public-health issue—for good reason. Nearly 80 percent of all adult smokers smoked their first cigarette and became regular smokers before they were eighteen years old.[2]
- In recent years, prescription drug abuse, particularly with respect to pain medications such as oxycodone and hydrocodone, has become a major social concern. In New York State alone, prescriptions for pain medication rose 82 percent from 2007 to 2010, along with significant increases in hospital admissions and deaths due to nonmedical use of these drugs. Since 2008, unintentional drug poisoning (principally from prescription medications) has become the leading cause of injury death among people twenty-five to sixty-four years old, *exceeding fatalities due to motor vehicle accidents*. Nationwide, more than 700 pharmacies in 2012 experienced an armed robbery specifically for prescription drugs, about twice as many as in 2006.[3]

It will be important, therefore, to address the issues of drugs that are legally sanctioned in our society as well as drugs that are not.

Whether we like it or not, the decision to use drugs of all types and forms, legally sanctioned or not, has become one of life's choices in America, as well as in societies around the world. Every segment of society is affected. The availability of drugs and the potential for drug abuse present a challenge for people of all ages, from the young to the elderly. The consequences of drug-taking behavior can be observed in the workplace and retirement communities as well as on street corners, in school yards, and on college campuses. Drug use is going on in the homes of every community, large or small. The social and personal problems associated with drug use extend in one way or another to men and women of all ethnic and racial groups, geographic regions, and socioeconomic levels. No groups and no individuals should believe themselves exempt.[4]

The purpose of this book is to answer your questions and address your concerns about the wide range of drugs and the many forms of drug-taking behavior in our society today. You might even find answers to questions you never thought about.



The nonmedical use of prescription medications has become a significant public health issue. In 2013, an estimated 26 million Americans over the age of twenty-six reported using a pain medication for nonmedical reasons at some point in their lifetime.

1.1: Social Messages about Drug Use

1.1 Analyze the contradiction in social messages regarding drug abuse

Unfortunately, we live in a social environment that sends us mixed messages about drug-taking behavior. The images of Joe Camel, the Marlboro Man, and the Virginia Slims Woman in print advertisements for cigarettes are remnants of an increasingly distant past, but at one time they were iconic (and highly effective) symbols in marketing campaigns designed to convey the attractiveness of smoking to the public, particularly to young people. They are gone now as a result of federal regulations over cigarette advertising that were established in 1998. For decades, warning labels on cigarette packs and public service announcements have cautioned us about the serious health hazards of tobacco use, but the fact remains that about one in four adult Americans today are current cigarette smokers, and the prevalence rate has been slow to decline.

Beer commercials during telecasts of football games and other athletic events are designed to be entertaining and to associate beer drinking with a lifestyle filled with fun, friendship, sex, and romance, but we are expected to abide by the tagline at the end of the ad to "drink responsibly" or "know when to say when." The ramifications of the social messages inherent in these commercials are significant. It has been established that the degree of positive expectancies about alcohol (viewing drinking as a way of gaining social acceptance, for example) predicts the onset age of drinking and the tendency to engage in high-risk alcohol use over time.

Major political figures, including U.S. presidents and vice presidents, as well as candidates for these offices and a host of public officials on local and national levels, have admitted smoking marijuana earlier in their lives. In recent years, regulatory policy in some U.S. states has changed dramatically, making marijuana legally available either for medical purposes or general use by adults. Yet the U.S. federal government position on marijuana remains unchanged, stipulating that the drug is an illegal substance, officially classified since 1970 as a Schedule I controlled substance, defined as a drug with a high potential for abuse and no accepted medical use—in the same category as heroin.

Anti-drug media campaigns are designed to discourage young people from becoming involved with drugs in general. At the same time, we observe a never-ending stream of sports figures, entertainers, and other high-profile individuals engaging in drug-taking behavior. Even though the careers of these people are frequently jeopardized, and in some instances, lives are lost, powerful pro–drug-use messages continue to influence us. These messages come from the entertainment industry and traditional media sources, as well as from an ever-increasing number of web sites on the Internet.[5] As confusing and often contradictory as these messages are, they represent the present-day drug scene in America.

1.2: Two Ways of Looking at Drugs and Behavior

1.2 Examine the two basic ways of looking at drugs and behavior

In the chapters ahead, we will look at the subject of drugs and behavior in two basic ways.

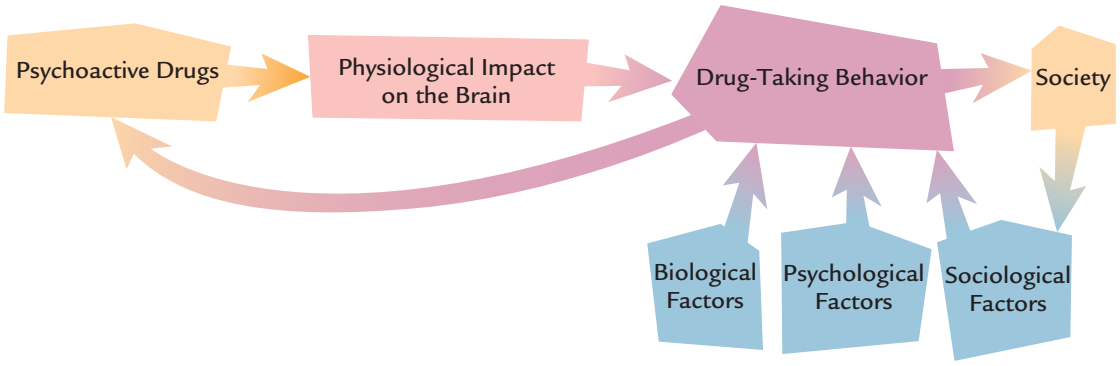
First, we will examine the biological, psychological, and sociological effects of consuming certain types of drugs. The focus will be on the study of specific substances that alter our feelings, our thoughts, our perceptions of the world, and our behavior. These substances are referred to as **psychoactive drugs** because they have the ability to alter the functioning of the brain and hence produce changes in our behavior and experience.

Psychoactive drugs that traditionally receive the greatest amount of attention are referred to as **illicit (illegal) drugs**. Criminal penalties are imposed in the United States on their possession, manufacture, or sale. The best-known examples are heroin, cocaine, and (except in some U.S. states) marijuana, as well as a wide range of so-called "club drugs," such as methamphetamine (meth), Ecstasy, LSD, PCP, ketamine, and GHB. Other equally important psychoactive substances, however, are **licit (legal) drugs**, such as alcohol, nicotine, caffeine, and certain prescription medications. In the cases of alcohol and nicotine, legal access carries a minimum-age requirement.

Second, we will focus on the complex interplay of circumstances in our lives that lead to drug-taking behavior. We will examine the possibility that drug use is, at least in part, a consequence of how we feel about ourselves in relation to our family, friends, and acquaintances, to our life experiences, and to the community in which we live. We will also examine the biological factors that may predispose us to drug-taking behavior. An exploration into the reasons why some individuals engage in drug-taking behavior, whereas others do not, will be a primary topic of discussion.

Understanding the interplay between drug-taking behavior and society is essential when we consider the dangerous potential for drug use to become **drug dependence**. As many of us know all too well, a vicious circle can develop in which drug-taking behavior fosters more drug-taking behavior, in a spiraling pattern that can be extremely difficult to break. Individuals showing signs of drug dependence display intense cravings for the drug and, in many cases, require increasingly greater quantities to get the same, desired effect. They become preoccupied with

Figure 1.1 The Biopsychosocial Model: Understanding the interplay of drugs, behavior, and society.



their drug-taking behavior, and it becomes evident that their lives have gotten out of control.

Ultimately, an understanding of drug dependence requires an examination of biological as well as psychological and sociological factors (see Figure 1.1).

On a biological level, the use of psychoactive drugs modifies the functioning of the brain, both during the time when the drug is present in the body and later, when the drug-taking behavior stops. Drug dependence, therefore, produces long-lasting brain changes. As Alan Leshner, former director of the National Institute on Drug Abuse (NIDA), has put it, a "switch" in the brain seems to be thrown following prolonged drug use. It starts as a voluntary behavior, but once that switch is thrown, a pattern of drug dependence takes over. On a psychological and sociological level, drug dependence can be viewed as the result of a complex interaction of the individual and his or her environment. We cannot fully understand the problem of drug dependence without being aware of the social context in which drug-taking behavior occurs. The recognition that drug dependence can be defined in terms of biological, psychological, and social components has important implications for designing effective treatment programs.[6]

Which drugs have the greatest potential for creating drug dependence? How can someone escape drug dependence once it is established? What factors increase or decrease the likelihood of drug-taking behavior in the first place? These are among the questions we will consider next, as we examine the impact of drugs and drug-taking behavior on our lives.

1.2.1: A Matter of Definition

What Is a Drug?

Considering the ease with which we speak of drugs and drug use, it seems that it should be relatively easy to explain what we mean by the word **drug**. Unfortunately, there are significant problems in arriving at a clear definition.

The standard approach is to characterize a drug as *a chemical substance that, when taken into the body, alters the structure or functioning of the body in some way*. In doing so, we are accounting for examples such as medications used for the treatment of physical disorders and mental illnesses, as well as for alcohol, nicotine, and the typical street drugs. Unfortunately, however, this broad definition could also refer to ordinary food and water. Because it does not make much sense for nutrients to be considered drugs, we need to refine our definition by adding the phrase *excluding those nutrients considered to be related to normal functioning.*

But we may still be on slippery ground. We can now effectively eliminate the cheese in your next pizza from being considered a drug, but what about some exotic ingredient in the sauce? Sugar is safely excluded, even though it has significant energizing (and therefore behavioral) effects on us, but what about the cayenne pepper that burns your tongue? Where do we draw the line between a drug and a nondrug? It is not an easy question to answer.

We can learn two major lessons from this seemingly simple task of defining a drug. First, there is probably no perfect definition that would distinguish drugs from nondrugs without leaving a number of cases that fall within some kind of gray area. The best we can do is to set up a definition, as we have, that handles most of the substances we are likely to encounter. However, significant practical difficulties may still arise. The fact that dietary supplements are currently not regulated in the United States has resulted from a governmental decision that these particular substances are not to be considered drugs in the same category as prescription or nonprescription (over-the-counter) medications. Whether or not this distinction is an arbitrary one continues to be a matter of debate.

The second lesson is more subtle. We often draw the distinction between drugs and nondrugs not in terms of their physical characteristics but, rather, in terms of *whether the substance in question has been intended to be used primarily as a way of inducing a bodily or psychological change.* [7] By this reasoning, if the pizza maker intended to put that spice in the pizza to make it taste better, the spice might not be considered a drug; it would simply be another ingredient in the recipe. If the pizza maker intended the spice to intoxicate you or quicken your heart rate, then it might be considered a drug (see Health Line).

Health Line

Defining Drugs: Olive Oil, Curry Powder, and a Little Grapefruit?

⊗ Olive Oil

An ever-increasing number of reminders about the blurriness of the distinction between drugs and nondrugs come from research on the chemical properties of specific foods we eat on a daily basis. For example, in 2005 it was found that freshly pressed olive oil contains large amounts of *oleocanthal,* a compound that inhibits the activity of cyclooxygenase enzymes in exactly the same way as ibuprofen, a popular nonsteroidal anti-inflammatory medication. Essentially, olive oil reduces inflammation in the body in a drug-like manner. By this definition, olive oil could be classified as a drug.

This discovery provides a biochemical clue to understanding the well-documented but puzzling health benefits of a Mediterranean (olive oil-based) diet, which leads to a lower risk of cancer, heart disease, and other chronic disorders, despite its heavy emphasis on fat and salt. This particular diet may also lower the risk of clinical depression.

⊗ Curry Powder

Another example is the spice *turmeric,* used commonly in most commercial curry powders, as well as adding the bright yellow color in many mustards. The active ingredient of turmeric, called *curcumin,* has been credited with several medicinal benefits. Curcumin apparently has antioxidant, anti-inflammatory, antiviral, antibacterial, and antifungal properties with potential benefits in the treatment of cancer, diabetes, arthritis, Alzheimer's disease, and other chronic disorders. In 2005 alone, nearly 300 technical and scientific papers cited the drug-like activity of curcumin—three times the number reported in 2000. If the regulatory hurdles established by the U.S. Food and Drug Administration with respect to long-term safety can be overcome, curcumin could provide an inexpensive alternative to several currently available prescription drugs.

As we continue to learn more about the therapeutic or drug-interacting effects of common foods and spices, the customary exclusion of nutrients in the definition of drugs becomes increasingly problematic. In the future, we might be hearing people say that they are taking olive oil, curry powder, or a little grapefruit extract for "medicinal reasons."

⊗ Grapefruit

Still another example is grapefruit. A common flavonoid called *naringenin,* found in grapefruit, has a specific inhibitory effect on the secretion of hepatitis C virus from infected liver cells. Nontoxic amounts of naringenin reduced hepatitis C virus secretion by as much as 80 percent. People taking certain prescription medications have to be careful if they are eating grapefruit at the same time.

SOURCES: Beauchamp, G. K.; Keast, R. S. J.; More, D.; Lin, J.; Pika, J.; Han, Q.; Lee, C. H.; Smith, A. B.; and Breslin, P. A. S. (2005). Phytochemistry: Ibuprofen-like activity in extra-virgin olive oil. *Nature*, 437, 45–46. Hampton, Tracy (2008, April 2). Grapefruit compound battles hepatitis C. *Journal of the American Medical Association*, 1532. Sanchez-Villegas, A.; Delgado-Rodriguez, M.; Alonso, A.; Schlatter, J., et al. Association of the Mediterranean dietary pattern with the incidence of depression. *Archives of General Psychiatry*, 66, 1090–1098. Stix, G. (2007, February). Spice healer. *Scientific American*, pp. 66–69.

Ultimately, the problem is that we are trying to reach a consensus on a definition that fits our intuitive sense of what constitutes a drug. We may find it difficult to define pornography, but (as has been said in the halls of the U.S. Supreme Court) we know it when we see it. So it may be with drugs. Whether we realize it or not, when we discuss the topic of drugs, we are operating within a context of social and cultural values, a group of shared feelings about what kind of behavior (that is, what kind of drug-taking behavior) is right and what kind is wrong.

The judgments we make about drug-taking behavior even influence the terminology we use when referring to that behavior. When we say "drug misuse" and "drug abuse," for example, we are implying that something wrong is happening, that a drug is producing some harm to the physical health or psychological well-being of the drug user or to society in general.

We cannot judge a drug on the basis of whether the drug is legal or illegal, since decisions about the legality of a psychoactive drug are more often made as a result of historical and cultural circumstances than on the physical properties of the drug itself. Tobacco, for example, has deeply rooted associations in American history, dating to the earliest colonial days. Although it is objectionable to many individuals and harmful to the health of the smoker and others, tobacco is nonetheless a legal commodity, although its commercial availability is limited to adults. Alcohol is another legal commodity, available within the bounds of the law, even though it can be harmful to individuals who become inebriated and to others who may be affected by the drinker's drunken behavior. The difficulty of using a criterion based on legality is further complicated by differences in religious attitudes toward these substances in some societies in the world.

1.2.2: Instrumental Drug Use/ Recreational Drug Use

It is useful to base our discussion about drug abuse and misuse by answering a simple but fundamental question: What is the intent or motivation of the drug user

with respect to this kind of behavior? In terms of the intent of the individual, drug-taking behavior can be classified as either instrumental or recreational.[8]

By **instrumental use**, we mean that a person is taking a drug with a specific socially approved goal in mind. The user may want to stay awake longer, fall asleep more quickly, or recover from an illness. If you are a medical professional on call over a long period of time or a long-distance truck driver, your taking a drug with the goal of staying alert is considered acceptable by most people. Recovering from an illness and achieving some reduction in pain are goals that are unquestioned. *In these cases, drug-taking behavior occurs as a means toward an end that has been defined by our society as legitimate.*

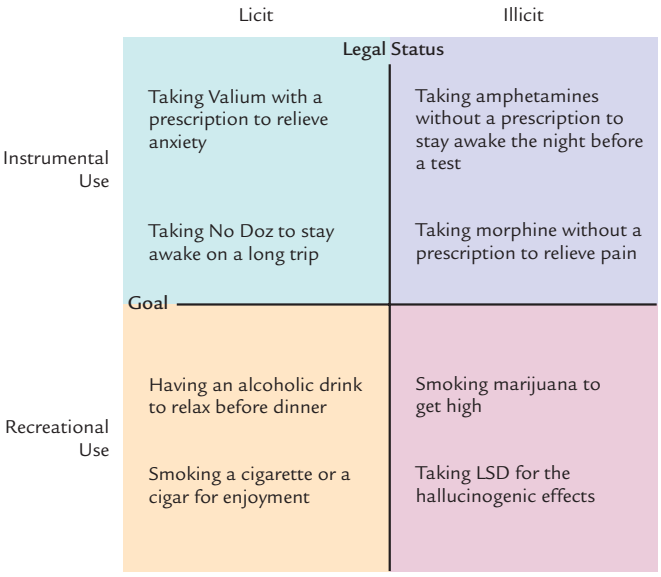
The legal status of the drug itself or whether we agree with the reason for the drug-taking behavior is not the issue here. The instrumental use of drugs can involve prescription and nonprescription, or over-the-counter (OTC), drugs that are licitly obtained and taken for a particular medical purpose. Examples include an antidepressant prescribed for depression, a cold remedy for a cold, an anticonvulsant drug to control epileptic seizures, and insulin to maintain the health of a person with diabetes. But the instrumental use of drugs can also involve drugs that are illicitly obtained, such as an amphetamine or other stimulant drug that has been procured by illegal means to help a person stay awake and alert after hours without sleep.

In contrast, **recreational use** means that a person is taking the drug not as a means to a socially approved goal but for the purposes of experiencing the effect of the drug itself. The motivation is to enjoy a pleasurable feeling or positive state of mind. *Whatever happens as a consequence of recreational drug-taking behavior is viewed not as a means to an end, but as an end onto itself.* Drinking alcohol and smoking tobacco are two examples of licit recreational drug-taking behavior. Involvement with street drugs, in the sense that the goal is to alter one's mood or state of consciousness, falls into the category of illicit recreational drug-taking behavior.

Although this four-group classification scheme, as shown in Figure 1.2, can help us in understanding the complex relationship between drugs and behavior, there will be instances in which the category is less than clear. Drinking an alcoholic beverage, for example, is considered recreational drug-taking behavior under most circumstances. If it is recommended by a physician for a specified therapeutic or preventive purpose, however, the drinking might be considered instrumental in nature. Thus, whether drug use is judged to be recreational or instrumental is determined in no small part by the circumstances under which the behavior takes place.

Figure 1.2 Four categories of drug-taking behavior, derived from combinations of the user's goal and the drug's legal status.

SOURCE: Adapted from Goode, E. (2008). *Drugs in American Society* (7th ed.). New York: McGraw-Hill, p. 14.



1.2.3: Drug Misuse or Drug Abuse?

How do the terms **drug misuse** and **drug abuse** fit into this scheme? Drug misuse typically applies to cases in which a legal prescription or OTC medication is used inappropriately. Many instances of drug misuse involve instrumental goals. For example, drug doses may be increased beyond the level of the prescription in the mistaken idea that if a little is good, more is even better. Or doses may be decreased from the level of the prescription to make the drug supply last longer. Drugs may be continued longer than they were intended to be used; they may be combined with some other drug; or a prescription drug may (in violation of instructions) be shared by family members or given to a friend.

Drug misuse can be dangerous and potentially lethal, particularly when alcohol is combined with drugs that depress the nervous system. Drugs that have this particular feature include antihistamines, antianxiety drugs, and sleeping medications. Even when alcohol is not involved, however, drug combinations can still represent serious health risks, particularly for the elderly, who often take a large number of separate medications. This population is especially vulnerable to the hazards of drug misuse.

Drugs . . . in Focus

Drug Abuse and the College Student: An Assessment Tool

In a research study conducted at Rutgers University, a cutoff score of five or more "yes" responses to the following twenty-five questions in the Rutgers Collegiate

Substance Abuse Screening Test (RCSAST) was found effective in correctly classifying 94 percent of young adults in a clinical sample as problem users and 89 percent of control individuals as nonproblem users. It is important, however, to remember that the RCSAST does not by itself determine the presence of substance abuse or dependence. The RCSAST is designed to be used as one part of a larger assessment battery aimed at identifying which young adults experience problems due to substance use and specifically what types of problems a particular individual is experiencing. Here are the questions:

⊗ An Assessment Tool

1. Have you gotten into financial trouble as a result of drinking or other drug use?
2. Is alcohol or other drug use making your college life unhappy?
3. Do you use alcohol or other drugs because you are shy with other people?
4. Has drinking alcohol or using other drugs ever caused conflicts with close friends of the opposite sex?
5. Has drinking alcohol or using other drugs ever caused conflicts with close friends of the same sex?
6. Has drinking alcohol or using other drugs ever damaged other friendships?
7. Has drinking alcohol or using other drugs ever been behind your losing a job (or the direct reason for it)?
8. Do you lose time from school due to drinking and/or other drug use?
9. Has drinking alcohol or using other drugs ever interfered with your preparations for exams?
10. Has your efficiency decreased since drinking and/or using other drugs?
11. Do you drink alcohol or use other drugs to escape from worries or troubles?
12. Is your drinking and/or using other drugs jeopardizing your academic performance?
13. Do you drink or use other drugs to build up your self-confidence?
14. Has your ambition decreased since drinking and/or drug using?
15. Does drinking or using other drugs cause you to have difficulty sleeping?
16. Have you ever felt remorse after drinking and/or using other drugs?
17. Do you drink or use drugs alone?
18. Do you crave a drink or other drug at a definite time daily?
19. Do you want a drink or other drug the next morning?
20. Have you ever had a complete or partial loss of memory as a result of drinking or using other drugs?
21. Is drinking or using other drugs affecting your reputation?
22. Does your drinking and/or using other drugs make you careless of your family's welfare?
23. Do you seek out drinking/drugging companions and drinking/drugging environments?
24. Has your physician ever treated you for drinking and/or other drug use?
25. Have you ever been to a hospital or institution on account of drinking or other drug use?

SOURCE: Bennett, M. E.; McCrady, B. S.; Frankenstein, W.; Laitman, L. A.; Van Horn, D. H. A.; and Keller, D. S. (1993). Identifying young adult substance abusers: The Rutgers Collegiate Substance Abuse Screening Test. *Journal of Studies in Alcohol*, *54*, 522–527. Reprinted with permission of the authors of the RCSAST.

In contrast, drug abuse is typically applied to cases in which a licit or illicit drug is used in ways that produce some form of physical, mental, or social impairment. The primary motivation for individuals involved in drug abuse is recreational. Drugs with abuse potential include not only the common street drugs but also legally available psychoactive substances, such as caffeine and nicotine (stimulants), alcohol and inhaled solvents (depressants), and a number of prescription or OTC medications designated for medical purposes but used by some individuals exclusively on a recreational basis. In the case of opioid pain medications such as Vicodin, OxyContin, and Percocet, among others, the distinction between drug misuse and drug abuse is particularly blurry. When there is no intent to make a value judgment about the motivation or consequences of a particular type of drug-taking behavior, we will refer to the behavior simply as *drug use.*

Before examining the major role that drugs and drug-taking behavior play in our lives today, however, it is important to examine the historical foundations of drug use. We need to understand why drug-taking behavior has been so pervasive over the many centuries of human history, and why drug-taking behavior remains so compelling for us in our contemporary society. We also need to understand the ways in which our society has responded to problems associated with drug use. How have our attitudes toward drugs changed over time? How did people feel about drugs and drug-taking behavior one hundred years ago, fifty years ago, twenty years ago, or even ten years ago? These are questions that we will now address.

SHARED WRITING: WHAT IS DRUG ABUSE?

But by what criteria do we say that a drug is being misused or abused?

A minimum number of characters is required to post and earn points. After posting, your response can be viewed by your class and instructor, and you can participate in the class discussion.

Post **0 characters | 140 minimum**

1.3: Drugs in Early Times

1.3 Report the origins and history of drugs and drug-taking behavior

Try to imagine the accidental circumstances under which a psychoactive drug might have been discovered. Thousands of years ago, perhaps a hundred thousand years ago, the process of discovery would have been as natural as eating, and the motivation as basic as simple curiosity. In cool climates, next to a cave dwelling may have grown a profusion of blue morning glories or brightly colored mushrooms, plants that produce hallucinogens similar to LSD. In desert regions, yellow-orange fruits grew on certain cacti, the source of the hallucinogenic drug peyote. Elsewhere, poppy plants, the source of opium, covered acres of open fields. Coca leaves, from which cocaine is made, grew on shrubs along the mountain valleys throughout Central and South America. The hardy cannabis plant, the source of marijuana, grew practically everywhere.

Some of this curiosity may have been sparked by observing the unusual behavior of animals as they fed on these plants. Within their own experience, people made the connection, somewhere along the line, between the chewing of willow bark (the source of modern-day aspirin) and the relief of a headache or between the eating of the senna plant (a natural laxative) and the relief of constipation.[9]

In a wide range of world cultures throughout history, hallucinogens have been regarded as having deeply spiritual powers. Under the influence of drugs, this modern-day shaman communicates with the spirit world.

Of course, some of these plants made people sick, and many of them were poisonous and caused death. However, it is likely that the plants that had the strangest impact on humans were the ones that produced hallucinations. Having a sudden vision of something totally alien to everyday life must have been overwhelming, like a visit to another world. Individuals with prior knowledge about such plants, as well as about plants with therapeutic powers, would eventually acquire great power over others in the community.

The accumulation of knowledge about consciousness-altering substances would mark the beginning of **shamanism**, a practice among primitive societies, dating back by some estimates more than forty thousand years, in which an individual called a **shaman** acts as a healer through a combination of trances and plant-based medicines, usually in the context of a local religious rite. Shamans still function today in remote areas of the world, often alongside practitioners of modern medicine. Hallucination-producing plants of various kinds play a major role in present-day shamanic healing.

With the development of centralized religions in Egyptian and Babylonian societies, the influence of shamanism gradually declined. The power to heal through one's knowledge of drugs passed into the hands of the priesthood, which placed greater emphasis on formal rituals and rules than on hallucinations and trances.

The most dramatic testament to the development of priestly healing during this period is a 65-foot-long Egyptian scroll known as the **Ebers Papyrus**, named after a German Egyptologist and novelist Georg Ebers who purchased it in 1872. This mammoth document, dating from 1500 B.C., contains more than eight hundred prescriptions for practically every ailment imaginable, including simple wasp stings and crocodile bites, baldness, constipation, headaches, enlarged prostate glands, sweaty feet, arthritis, inflammations of all types, heart disease, and cancer. More than a hundred of the preparations contained castor oil as a natural laxative; some contained "the berry of the poppy," which we now recognize as the Egyptian reference to opium. Other ingredients were quite bizarre: lizard's blood, the teeth of swine, the oil of worms, the hoof of an ass, putrid meat with fly specks, and crocodile dung (excrement of all types being highly favored for its ability to frighten off the evil spirits of disease).[10]

How successful were these strange remedies? It is impossible to know because no records were kept on what happened to the patients. Although some of the ingredients

(such as opium and castor oil) had true medicinal value, much of the improvement from these concoctions may have been psychological rather than physiological. In other words, improvements in the patient's condition resulted from the patient's *belief* that he or she would be helped—a phenomenon known as the **placebo effect**. Psychological factors have played a critical role throughout the history of drugs.

Along with substances that had genuine healing properties, some psychoactive drugs were put to less positive use. In the early Middle Ages, Viking warriors ate the mushroom *Amanita muscaria*, known as fly agaric, and experienced a tremendous increase in energy, which resulted in wild behavior in battle. They were called Berserkers because of the bear skins they wore, but this is the origin of the word "berserk" as a reference to reckless and violent behavior. At about the same time, witches operating on the periphery of European society created "witch's brews," mixtures made of various plants such as mandrake, henbane, and belladonna, creating strange hallucinations and a sensation of flying. The toads that they included in their recipes didn't hurt either: We know now that the sweat glands of certain toads contain a chemical related to dimethyltryptamine (DMT), a powerful hallucinogenic drug.[11]

1.4: Drugs in the Nineteenth Century

1.4 Discuss the widespread and varied usage of drugs in the nineteenth century

By the end of the nineteenth century, the medical profession had made significant strides with respect to medicinal healing. Morphine was identified as the active ingredient in opium, a drug that had been in use for at least three thousand years and had become the physician's most reliable prescription for the control of pain due to disease and injury. The invention of the syringe made it possible to deliver the morphine directly and speedily into the bloodstream. Cocaine, having been extracted from coca leaves, was used as a stimulant and antidepressant. Sedative powers to calm the mind or induce sleep had been discovered in bromides and chloral hydrate.

There were also new drugs for specific purposes or particular diseases. Anesthetic drugs were discovered that made surgery painless for the first time in history. Some diseases could actually be prevented through the administration of vaccines, such as the vaccine against smallpox introduced by Edward Jenner in 1796 and the vaccine against rabies introduced by Louis Pasteur in 1885. The discovery of new pharmaceutical products marked the modern era in the history of healing.[12]

The social picture of drug-taking behavior during this time, however, was more complicated. By the 1890s, prominent leaders in the medical profession and social reformers had begun to call attention to societal problems resulting from the widespread and uncontrolled access to psychoactive drugs. Remedies called **patent medicines**, sold through advertisements, peddlers, or general stores, contained opium, alcohol, and cocaine and were promoted as answers to virtually all common medical and nonmedical complaints.

Around 1900, heroin was advertised as a completely safe remedy for common ailments, along with aspirin. No one knows how many people became dependent on heroin as a result.

Opium itself was cheap, easily available, and completely legal. Most people, from newborn infants to the elderly, in the United States and Europe "took opium" during their lives. The way in which they took it, however, was a critical social factor. The respectable way was to drink it, usually in a liquid form called *laudanum*. By contrast, the smoking of opium, as introduced by Chinese immigrants imported for manual labor in the American West, was considered degrading and immoral. Laws prohibiting opium smoking began to be enacted in 1875. In light of the tolerant attitude toward opium drinking, the strong emotional opposition to opium smoking may be viewed as more anti-Chinese than anti-opium.[13]

Like opium, cocaine was in widespread use and was taken quite casually in a variety of forms during this period. The original formula for Coca-Cola, as the name suggests, contained cocaine until 1903, as did Dr. Agnew's Catarrh Powder, a popular remedy for chest colds. In the mid-1880s, Parke, Davis, and Company (since 2002, merged with Pfizer, Inc.) was selling cocaine and its botanical source, coca, in more than a dozen forms, including coca-leaf cigarettes and cigars, cocaine inhalants, a coca cordial, and an injectable cocaine solution.[14]

A Viennese doctor named Sigmund Freud, who was later to gain a greater reputation for his psychoanalytic