

## **Chapter 1 – History**

### **Chapter Overview**

The first part of this chapter provides a historical survey of the pharmacologic and political influences on the use of psychoactive substances and compulsive behaviors in all civilizations. The second part presents a system for classifying these psychoactive substances along with major legislation impacting use of drugs and treatment of addictions.

Throughout the last 10,000 years, humans have used psychoactive drugs to alter their perception of reality for a variety of reasons. By studying the history of drug use and abuse, a number of historical themes become apparent.

1. There is a basic need of human beings to cope with their environment and enhance their existence.
2. Human brain chemistry can be affected by psychoactive drugs, behavioral addictions, and mental illness to induce an altered state of consciousness.
3. The ruling classes, governments, and businesses have always been involved in trying to control the drug trade, often using it as a source of revenue through trade and taxes.
4. Technological advances in refining, synthesizing, and manufacturing psychoactive drugs have increased their potency and abuse liability.
5. Users and researchers have discovered new ways of taking drugs so they reach the brain faster, thus increasing their abuse liability.

For example, opium was used originally for medicinal and spiritual purposes. Once people discovered that opium created mental effects because of the way it manipulated the brain's own natural chemicals especially endorphins, the body's own painkillers, they used it to change their mental/emotional state. Legal, social, and health problems multiplied after people began to smoke it, when it became a lucrative source of income for governments and trading companies, when it was refined to the stronger morphine and heroin and when it could be delivered directly into the bloodstream using a hypodermic needle.

The discovery of psychoactive plants (opium poppy, coca bush, coffee bean, *Cannabis*, and the tobacco plant) and the subsequent synthesis of hundreds of other psychoactive substances, has led to a medicine chest full drugs, most useful and some desirable but all causing problems when abused.

Today alcohol, tobacco, marijuana, cocaine, opioids (especially prescription drugs), crystal meth, and ecstasy are the most widely used drugs. The recent development of synthetic marijuana sold as “herbal incense” and synthetic stimulants sold as “bath salts” represent a great potential for a renewed proliferation of traditionally dangerous “designer drugs.” Behavioral addictions (gambling, internet, shopping, sex, compulsive eating disorder) are now formally recognized as addictions that affect the same natural brain chemicals and neural pathways as addictive substances. The popularity of abusing specific psychoactive substances is cyclical; cocaine in the 1880s, the 1910s and '20s, and the 1970s to '80s; opiates, beginning thousands of years ago and continuing through numerous cycles to the present. By viewing these cycles and the themes of drug use through the lens of history, we can understand the enormous influence psychoactive drugs had on the development of civilizations.

### **CLASSIFICATION**

Psychoactive drugs include those substances that affect the central nervous system. This book classifies drugs according to their effects: stimulants (uppers), depressants (downers), and psychedelics (all arounders). Other groups of drugs include inhalants, sports drugs (e.g., anabolic

steroids), and psychiatric medications such as Haldol® and Prozac®. Also included are compulsive behaviors (e.g., gambling, eating disorders, etc.) that can be acted out in an addictive manner.

## **Chapter 1 – History Outline**

### **INTRODUCTION**

#### ***I. FIVE HISTORICAL THEMES OF DRUG USE***

1. Human need to cope with the environment
2. A susceptible brain chemistry
3. Business & government involvement
4. Technological advances in making drugs
5. More efficient methods of putting drugs into the body

### **HISTORY OF PSYCHOACTIVE DRUGS**

#### ***II. PREHISTORY & THE NEOLITHIC PERIOD (8500–4000 B.C.)***

#### ***III. ANCIENT CIVILIZATIONS (4000 B.C.A.D. 400)***

- A. Alcohol
- B. Opium
- C. Cannabis (Marijuana)
- D. Mescal Bean, San Pedro & Peyote Cacti (Mescaline) In Mesoamerica
- E. Psychedelic Mushrooms in India, Siberia, & Mesoamerica
- F. Tobacco & Coca Leaf in Mesoamerica

#### ***IV. MIDDLE AGES (400–1400)***

- A. Psychedelic “Hexing Herbs”
- B. Psychedelic Mold-Ergot (St. Anthony’s Fire)
- C. From Medicine, to Psychoactive Drug, To Poison
- D. Alcohol & Distillation
- E. Islamic Substitutes for Alcohol
- F. Coffee, Tea & Chocolate (Caffeine)

#### ***V. RENAISSANCE & THE AGE OF DISCOVERY (1400–1700)***

- A. Alcohol
- B. Coca & the Conquistadors
- C. Tobacco Crosses the Oceans
- D. Coffee & Tea Consumption Spreads
- E. Opium Returns

#### ***VI. THE AGE OF ENLIGHTENMENT & THE EARLY INDUSTRIAL REVOLUTION(1700–1900)***

- A. Distilled Liquors & The Gin Epidemic
- B. Tobacco, Hemp, & The American Revolution
- C. Ether, Nitrous Oxide, Other Anesthetics, & Other Inhalants
- D. Opium to Morphine To Heroin
  1. Opium Smoking
  2. Morphing
  3. Hypodermic Needle
  4. Heroin
  5. Opium Wars
- E. From Coca to Cocaine

- F. Temperance & Prohibition Movements
- G. Opiates & Cocaine in Patent Medicines & Prescription Drugs

## **VII. TWENTIETH CENTURY**

- A. From Pipes & Smokeless Tobacco to Cigarettes
- B. Drug Regulation
- C. Alcohol Prohibition & Treatment
- D. Marijuana: From Ditchweed to Sinsemilla
- E. Amphetamines in War & Weight Loss
- F. Sports & Drugs
- G. Sedative-Hypnotics & Psychiatric Medications
- H. LSD & the New Psychedelics
  - I. Methadone
- J. Heroin & Vietnam
- K. Preventing & Treating Drug Abuse
- L. Cocaine & the Crack Epidemic

## **VIII. TODAY & TOMORROW**

- A. Geopolitics of Drugs
  - 1. Heroin
  - 2. Cocaine
- B. HIV, AIDS, & Hepatitis C
- C. From Club Drugs to Synthetic Drugs
- D. Marijuana (Cannabis) & Health
- E. Tobacco, Health, & The Law
- F. Amphetamine, Methamphetamine & Ecstasy
- G. Other Stimulants
- H. Prescription Drug Abuse
- I. Buprenorphine
- J. Alcohol Hangs On
- K. Steroids & Sports
- L. Behavioral Addictions
  - M. Court-Referred Treatment
  - N. Co-Occurring Disorders

## **IX. CONCLUSIONS**

### **CLASSIFICATION OF PSYCHOACTIVE DRUGS**

#### **X. WHAT IS A PSYCHOACTIVE DRUG?**

- A. Definition
- B. Chemical, Trade, & Street Names
- C. Classification by Effects

#### **XI. MAJOR DRUGS**

- A. Uppers (Stimulants)
  - 1. Physical Effects
  - 2. Mental/Emotional Effects

- B. Downers (Depressants)**
  - 1. Physical Effects**
  - 2. Mental/Emotional Effects**
- C. All Arounders (Psychedelics)**
  - 1. Physical Effects**
  - 2. Mental/Emotional Effects**

## ***XII. OTHER DRUGS & ADDICTIONS***

- A. Inhalants (Deliriant)**
  - 1. Physical Effects**
  - 2. Mental/Emotional Effects**
- B. Anabolic Steroids & Other Sports Drugs**
  - 1. Physical Effects**
  - 2. Mental/Emotional Effects**
- C. Psychiatric Medications**
- D. Compulsive Behaviors**
  - 1. Physical Effects**
  - 2. Mental/Emotional Effects**

## ***XIII. CONTROLLED SUBSTANCES ACT OF 1970***

## **Chapter 1 – Extended Outline**

### **INTRODUCTION (pp. 1.2–1.3)**

Presidential attitudes towards psychoactive drugs have changed over the years due more to the political climate rather than the actual effects of the drugs. As a result, the War on Drugs expenditures went from \$3.7 million to \$15.6 billion over the last 40 years

*Certain historical themes are evident in the way societies perceive and use drugs.*

### **I. FIVE HISTORICAL THEMES OF DRUG USE (P. 1.3–1.5)**

#### **1. Human beings have a basic need to cope with their environment and enhance their existence.**

Early man lived in a dangerous and mysterious environment, they found that ingesting certain plants could ease fear, reduce pain, treat some illnesses, give pleasure, and help them connect with their gods.

#### **2. Human brain chemistry can be affected by psychoactive drugs, behavioral addictions, and mental illness to induce an altered state of consciousness.**

If psychoactive drugs and behavioral addictions did not affect human brain chemistry in a desirable manner, they would not be used voluntarily.

#### **3. The ruling class, government, business and criminal organizations have been involved in growing, manufacturing, distributing, taxing, and prohibiting drugs.**

Ongoing struggles to control the supplies through colonization, exportation and the sale of drugs along with excise taxes to support governments are documented throughout history. Control of the drug trade has financed revolutionary and terrorist movements.

#### **4. Technological advances in refining, synthesizing, and manufacturing drugs have increased the potency of these substances.**

Over the centuries various cultures have learned how to distill alcoholic beverages, refine opium and coca, synthesize methamphetamines and LSD, use the sinsemilla growing technique, and produce MDMA. These and other techniques enable drug users to deliver more of a drug's active psychoactive ingredients into the body at one time.

#### **5. The development of faster and more efficient methods of delivering drugs into the body intensified the effects.**

Technological and pragmatic discoveries have taught users to mix alcohol and opium, absorb more juice from the chewed coca leaf, inhale nitrous oxide, inject heroin, smoke crack cocaine, and crush and inject time-release medications. The availability of rapid-play poker machines increased the number of pathological gamblers; online pornography increased the level of sexual addiction

## **II. PREHISTORY & THE NEOLITHIC PERIOD (8500–4000 B.C.)** **(p. 1.3)**

Over 4,000 plants yield psychoactive substances, 60 or so have been in continuous use. The shaman, used both naturally induced (e.g., fasting and dancing) and drug-induced altered states of consciousness.

## **III. ANCIENT CIVILIZATIONS (4000 B.C.–A.D. 400)** **(p. 1.3–1.9)**

The earliest crops were wheat and barley, used to make bread and beer. In Asian civilizations, rice was used to make wine (sake). Some ancient cultures also cultivated the opium poppy and the hemp plant (*Cannabis*).

### **A. ALCOHOL (pp. 1.5–1.6)**

Many ancient cultures considered alcohol, particularly wine, a gift from the gods. Workers drank beer, the pharaohs and members of the upper class drank wine. Because alcoholic was desirable, most civilizations throughout history have placed religious, social, and legal controls on its use. The temperance of later Greek society gave way to binge drinking in Roman society, encouraged by Bacchus.

### **B. OPIUM (pp. 1.6–1.7)**

Remnants of ancient poppy plantations in Spain, Greece, northeast Africa, Egypt, and Mesopotamia are evidence of the widespread early use of opium. It was used both for its medicinal properties of pain relief, cough suppression, and diarrhea control as well as for its sedation and euphoria.

### **C. CANNABIS (MARIJUANA) (p. 1.7)**

*Cannabis* was prized as a source of oil and fiber, for its edible seeds, as a medicine, and as a psychedelic. It is referenced in ancient texts as a medication (for constipation, dysentery, analgesic,) as well as a substance with stupefying and hallucinogenic properties. Most ancient civilizations, (e.g., Greece, Rome, and England), used *Cannabis* (hemp) as a fiber.

### **D. MESCAL BEAN, SAN PEDRO & PEYOTE CACTI (mescaline)** **IN MESOAMERICA (p. 1.8)**

Dozens of indigenous hallucinatory plants in North and South America were used in complex ceremonies overseen by shamans, who had positions of spiritual influence. Some South American cultures boiled peyote and San Pedro cacti for up to seven hours and drank the potion to produce hallucinations and communicate with the supernatural.

### **E. PSYCHEDELIC MUSHROOMS IN INDIA, SIBERIA & MESOAMERICA** **(pp. 1.8–1.9)**

Archeology suggests that the sacramental use of mushrooms began about 7,000 years ago during Paleolithic times. The mushrooms used include the *Amanita muscaria* in India and *Psilocybe* in Aztec and Mayan cultures in pre-Columbian Central America.

## **F. TOBACCO & COCA LEAF IN MESOAMERICA (p. 1.9)**

Plants with stimulant alkaloids (nicotine and cocaine) have been around for 65 million to 250 million years. Humans started drinking, chewing, snorting, and smoking tobacco for rituals and stimulation around 5000 B.C. They chewed the coca leaf for stimulation, nutrition, and appetite control.

## **IV. MIDDLE AGES (400–1400) (p. 1.9–1.10)**

### **A. PSYCHEDELIC “HEXING HERBS” (p. 1.9)**

Psychedelics used over the centuries include those members of the nightshade family that contain atropine and scopolamine. In the Middle Ages, the nightshade varieties were sometimes used by medicine men and women who were later accused of witchcraft. Drugs included datura, henbane, belladonna, and the mandrake root.

### **B. PSYCHEDELIC MOLD—ERGOT (Saint Anthony’s Fire) (p. 1.9–1.10)**

Ergot, a brownish purple fungus (*Claviceps purpurea*), grows on infected rye and wheat plants. The active ingredient is lysergic acid diethylamide (LSD). Over the centuries there have been numerous outbreaks of ergot poisoning. Hallucinations, convulsions, insanity, and a burning sensation in the feet and hands were common symptoms.

### **C. FROM MEDICINE, TO PSYCHOACTIVE DRUG, TO POISON (p. 1.10)**

Most drugs can be used as a medicine, a desirable psychoactive drug, or a deadly poison. Opium suppresses pain at low doses, causes euphoria at a higher dose, and stops breath at very high doses.

### **D. ALCOHOL & DISTILLATION (p. 1.10)**

In the eighth to fourteenth centuries, knowledge of distillation techniques became widespread. Evaporation raised the alcohol content of beverages from 14% to 40%. The increased strength caused cultural attitudes to shift from abstinence to temperance to bingeing.

### **E. ISLAMIC SUBSTITUTES FOR ALCOHOL (pp. 1.10–1.11)**

In the Qur’an (Koran), the holy book of Islam, drinking wine was frowned upon because it made a drinker forget his religious duties. Muslims searched for alternatives. Opium for the relief of pain, both physical and mental, was seen as an acceptable substitute for alcohol along with tobacco, hashish, khat, and coffee.

### **F. COFFEE, TEA & CHOCOLATE (CAFFEINE) (p. 1.11)**

The coffee plant *Coffea Arabica* was found growing wild in Ethiopia, about A.D. 850. Potency was increased when the beans were roasted then ground. Tea from the leaves of the *Thea sinensis* (chinensis) bush was used in China 4,700 years ago. Today, tea remains at the heart of social and religious ceremonies in Japan, England, and a number of other countries. Approximately 60 plants contain caffeine, including guarana, maté, yoco, kola, and the cacao tree (chocolate).

## **V. RENAISSANCE & THE AGE OF DISCOVERY (1400–1700) (PP. 1.11–1.14)**

Exploration, trade, and colonization by Portugal, Spain, England, France,

and the Netherlands put Europeans in contact with diverse cultures and the unfamiliar psychoactive plants that they then brought home.

#### **A. ALCOHOL (p. 1.11–1.12)**

Laws limiting alcohol were based on the effects of overuse and were aimed at temperance rather than prohibition because distilled beverages produced hefty tax revenues. Ships involved in the slave trade introduced rum to cultures where mild beer and wine were the strongest beverages previously available. Rum caused more harmful side effects.

#### **B. COCA & THE CONQUISTADORS (p. 1.11–1.12)**

Economic and political needs transform the way a psychoactive substance is used. The Spanish conquistadors who colonized Peru in the 1500s took control of the Incas' coca plantations to ensure a steady supply of leaves that were supplied to their coerced labor force to keep them working. Coca chewing increased dramatically as did revenue to support the colony.

#### **C. TOBACCO CROSSES THE OCEANS (p. 1.12–1.13)**

When Christopher Columbus arrived in America in 1492; he noted the natives' use of tobacco in pipes, cigars, cigarettes, nasal snuff, and chew tobacco. Shamans in South America used tobacco to induce trancelike states. It was also used as a medicine for a wide variety of ailments. Soon the Spaniards and the British were exporting tobacco from their North American colonies to Europe. Sir Walter Raleigh brought tobacco to the court of Queen Elizabeth I. The abuse of tobacco by the clergy led to vigorous attacks by authorities, including King James I of England. However, the craving for tobacco overwhelmed most calls for prohibition, as did the rich revenues it generated for many governments.

#### **D. COFFEE & TEA CONSUMPTION SPREADS (p. 1.13–1.14)**

historically, coffee and tea were first perceived as drugs and medications and then as social lubricants. Coffee drinking became widespread in Europe, and became the center of social interaction and a ritualistic part of family life. Cortez, sampled chocolate in Montezuma II's court in the Aztec's Mexican Empire and brought it back to Europe.

#### **E. OPIUM RETURNS (p. 1.14)**

During the Renaissance the use of opium returned to favor when the works of the second-century Greek physician, Galen, and the eleventh-century Moorish physician, Avicenna, became widely taught in medical education causing a revival of theriac, one of the opium preparations mentioned by both physicians. In 1524, Paracelsus returned to Western Europe with the secret of laudanum, a tincture of opium in alcohol used as a cure-all. A medicine that could kill pain and make one feel euphoric was highly prized.

### **VI. AGE OF ENLIGHTENMENT & THE EARLY INDUSTRIAL REVOLUTION (1700–1900) (PP. 1.14–1.15)**

The development of refined forms of psychoactive drugs, new methods of use, improved production techniques, and government and merchants' economic motives all played a role in leading more people to use. More



users resulted in more mental and physical problems, including abuse and addiction.

### **A. DISTILLED LIQUORS & THE GIN EPIDEMIC (pp. 1.14–1.15)**

When the English Parliament encouraged the production and consumption of gin, urban alcoholism skyrocketed. The London Gin Epidemic (1710 to 1750) illustrated how unlimited availability of a desirable substance causes excess use. Only stiff taxes and the strict regulation of sales brought the epidemic under control.

About the same time, rum was the chief medium of exchange in the slave trade and, along with whiskey, one of the mainstays of the economy of colonial America.

### **B. TOBACCO, HEMP & THE AMERICAN REVOLUTION (p. 1.15–1.16)**

Tobacco (*Nicotiana tabacum* or Virginia leaf) was introduced to the Jamestown colony in 1612, the harvested leaves were shipped to England over the next century and a half. It was a financial mainstay for the southern colonies. Virtually all of it was chewed or smoked in cigars and pipes.

In 1764, King George III of England encouraged the planting of hemp (*Cannabis*) in the new American colonies for the fiber. The financial viability of the crop depended on slave labor and it ceased to be profitable post Civil War.

### **C. ETHER, NITROUS OXIDE, OTHER ANESTHETICS & OTHER INHALANTS (p. 1.16)**

In 1275 ether was discovered; 300 years later Paracelsus discovered its hypnotic effects. 200 years later, a liquid form of ether called anodyne was used as an anesthetic. Joseph Priestly discovered nitrous oxide (laughing gas) in 1776. Chloroform was discovered in 1831.

Both men and women participated in “gas frolics” in the 1830s. Beginning in the nineteenth century, volatile solvents were used as inhalants.

### **D. OPIUM TO MORPHINE TO HEROIN (p. 1.16–1.17)**

Scientific developments, changes in methods of use, economic innovation, and political expediency escalated the use, abuse, and addiction of opiates.

#### **1. Scientific Developments**

In 1804, morphine was refined from opium. It was about 10 times more powerful than opium, which led to a more-rapid development of tolerance and therefore greater dependence. After scientists discovered active alkaloids in many other plants (e.g., cocaine in the coca leaf), more concentrated forms of a number of drugs were produced.

In 1874 heroin was derived by chemically altering morphine. It was marketed for coughs, chest pain, and tuberculosis. Heroin use led to a more rapid progression to abuse and addiction.

#### **2. Changes in Methods of Use**

Opium smoking was first introduced to China around 1500.

In 1855, the reusable hypodermic needle was invented. This method of introducing drugs into the body bypasses the natural barriers that protect the body from infection.

### **3. Economic & Political Developments**

During the Opium Wars in the 1800s, colonial powers vied for the right to sell opium in China. The British government grew opium in India to trade with China for silver in order to buy tea. Britain prevailed, forcing China to grant greater trade concessions, an unacknowledged right to sell opium, and Hong Kong became a British colony.

### **E. FROM COCA TO COCAINE (p. 1.17)**

In 1859, Albert Niemann isolated the alkaloid cocaine from the coca leaf. The leaf was chewed or chopped and absorbed on the gums. The mild excitement of the coca leaf became an intense cocaine rush, particularly when injected, smoked, or snorted. The physician Karl Koller found that cocaine was a strong topical anesthetic; Angelo Mariani popularized his cocaine wine (Vin Mariani) as a medicinal tonic; Sigmund Freud published his treatise, *Über Coca*, and suggested cocaine's use for a number of ailments. Freud and others also used cocaine to feel better and relieve depression. The possibility of negative consequences was minimized.

### **F. TEMPERANCE & PROHIBITION MOVEMENTS (p. 1.18)**

The first temperance movement in the United States began around 1785 spearheaded by Dr. Benjamin Rush, a noted physician and reformer. The first national temperance organization, the American Temperance Society, was created in 1826; it was supported by businessmen who needed sober and industrious workers. After the Civil War, the Women's Crusade, the Woman's Christian Temperance Union and the Anti-Saloon League (1893) led the temperance movement.

### **G. OPIATES & COCAINE IN PATENT MEDICINES & PRESCRIPTION DRUGS (p. 1.18)**

At the turn of the 20th century, hundreds of patent medications were available, many loaded with opium, morphine, cocaine, Cannabis, and alcohol. Listing a product's ingredients was not required, and manufacturers were not held to any claims they made to sell their product. During the Victorian era physicians' over prescribed psychoactive medications for patients (mostly women) causing dependency (iatrogenic addiction). From 1886 until 1903, Coca-Cola® contained about 5 mg of cocaine, or one-third to one-half of a "line."

## **VII. TWENTIETH CENTURY (PP. 1.19–1.26)**

### **A. FROM PIPES & SMOKELESS TOBACCO TO CIGARETTES (p. 1.19–1.20)**

As governments and businesses exploited psychoactive substances, especially tea, coffee, alcohol, and tobacco, they became more readily available to the public. The Bonsack automatic cigarette-rolling machine was invented in 1884 and the price of cigarettes dropped. A more

plentiful and milder strain of tobacco, aggressive advertising and marketing, vastly increased the number of smokers. By the 1930s taxes on cigarettes were providing a rich source of revenue for state and federal governments. Warnings of the health hazards of smoking were issued as early as 1945. In 1964 and 1967, the U.S. Surgeon General issued reports that concluded, "Cigarette smoking is a health hazard." Smoking in the United States decreased through the 1960s, rose during the 1970s, and went into a decline that continues into the present.

#### **B. DRUG REGULATION (pp. 1.20–1.21)**

1906-The Pure Food and Drug Act;  
1909-The Opium Exclusion Act;  
1914-The Harrison Narcotic Act;  
1920-Volstead Act or prohibition;  
1933-Prohibition was repealed;  
1937-Marijuana Tax Act;  
1965-Drug Abuse Control Amendments;  
1970-Comprehensive Drug Abuse Prevention and Control Act  
1984- Drinking age was raised to 21 years; .  
2000- The Substance Abuse & Crime Prevention Act, (California Prop. 36)  
1996–present-Laws legalizing the medical use of marijuana were passed in  
16 states and the District of Columbia.

#### **C. ALCOHOL PROHIBITION & TREATMENT (pp. 1.21–1.22)**

The Eighteenth Amendment (Prohibition) was ratified in 1920, and repealed 13 years later. Prohibition created other serious problems (criminal organizations) but helped control many serious health/social issues.

Alcoholics Anonymous (AA), is a spiritual program that teaches 12 steps to recovery. Today there are 52,050 groups in the United States with a membership of 1,068,516. Other programs use the 12-step model to help narcotics addicts (NA), overeaters (OA), gamblers (GA), and dozens of other addictions. The belief that alcoholism is a disease and not a moral weakness changed treatment practices.

#### **D. MARIJUANA: FROM DITCHWEED TO SINSEMILLA (pp. 1.22–1.23)**

Marijuana smoking wasn't common in the United States until about 1910. Gradually, it spread to the Southwest and the West. The federal response was the 1937 Marijuana Tax Act, which banned *Cannabis sativa*. The ban on growing and using occurred despite its use in numerous medicines for more than 5,000 years. In the 1960s a new generation ignored prohibitions against marijuana and used it as a symbol of youthful rebellion against parents, authority, and the war in Vietnam. In the 1970s, the sinsemilla growing technique (which increased the concentration of THC) was widespread and the price skyrocketed.

#### **E. AMPHETAMINES IN WAR & WEIGHT LOSS (p. 1.23)**

Amphetamine was first synthesized in 1887 in Germany, and methamphetamine was created in 1919 in Japan. In the 1930s amphetamine's stimulating effects on the CNS become widely known and

exploited. During World War II, American, British, German, and Japanese army doctors routinely dispensed amphetamines (speed) to “elevate the fighting spirit.” The appetite-suppressant effects led to the massive use of amphetamines as diet drugs in the fifties and sixties. They also fueled the hippie movement in the late sixties. As a reaction, Congress passed the Comprehensive Drug Abuse Prevention and Control Act of 1970.

#### **F. SPORTS & DRUGS (pp. 1.23–1.24)**

The Cold War politicized athletic competition between the Free World and the Communist-bloc countries, particularly during the Olympics. The use of anabolic androgenic steroids, stimulants, and other performance-enhancing drugs became widespread. By 1968, the International Olympic Committee began drug testing. The National Collegiate Athletic Association (NCAA) began drug testing in 1986.

#### **G. SEDATIVE-HYPNOTICS & PSYCHIATRIC MEDICATIONS (p. 1.24)**

Drug companies discovered a way to synthesize medications rather than having to rely on extracts from natural products. Sedatives, such as bromides and chloral hydrate, gave way to barbiturates. Benzodiazepines dominated the prescription downer market because of a lower overdose liability.

The recognition that brain chemical imbalances cause almost all mental illnesses spurred the development of psychiatric medications (antipsychotics, antidepressants, anxiolytics, and mood stabilizers). Research also led to the development of medications to treat drug abuse and addiction, including aids for detoxification, long-term abstinence, and relapse prevention.

#### **H. LSD & THE NEW PSYCHEDELICS (p. 1.25)**

Lysergic acid diethylamide (LSD) is the active ingredient in ergot fungus. It was isolated and extracted in 1938 by Swiss scientist Albert Hoffman and was considered as a potential treatment for mental illness. The army and the CIA experimented with it and other psychedelics as mind-control drugs. Dr. Timothy Leary publicly supported its use and encouraged the youth of the sixties to “turn on, tune in, and drop out.” Starting in the 1960s, a flood of synthetic psychedelic drugs (MDA, DMT, PCP, 2CB, and CBR), and rediscovered natural psychedelic substances, (peyote, psilocybin, salvia divinorum, and MDMA [ecstasy]), were tried.

#### **I. METHADONE (p. 1.25)**

Methadone, a long-acting opioid designed as a legal substitute for heroin, is an early example of harm reduction that was targeted to benefit society. More than 1,235 clinics supply methadone to about 285,000 heroin addicts. With more and more people using prescription opioid painkillers, methadone maintenance is now a treatment for more than just the heroin addict.

#### **J. HEROIN & VIETNAM (p. 24)**

A new group of heroin addicts, both at home and abroad, was created during America’s involvement in the Vietnam War. Only 5% continued their heroin use after the war.

## **K. PREVENTING & TREATING DRUG ABUSE (p. 1.26)**

Attempts to address the problems of drug abuse, and crime brought on by the misuse of drugs focused on:

- supply reduction—interdiction plus stricter laws concerning use
- demand reduction—prevention coupled with treatment
- harm reduction—reducing the harm caused by abuse (methadone maintenance, free needle distribution).

The discovery of brain chemicals (endorphins) that act like psychoactive drugs expanded the understanding of the process of addiction. The treatment of addiction became a medical as well as a social science.

## **L. COCAINE, THE CRACK EPIDEMIC & ICE (p. 1.26)**

Heavy cocaine use occurred from 1880 to 1905 and 1920 to 1930. New ways of preparing and using the drug made cocaine fashionable again beginning in the 1970s.

A smokable form of cocaine, known as “freebase,” gave way to smokable crystals called “crack.” Over the years, crack use moved to the inner city, and heavy use became more prevalent among minorities. In the late 1980s, a slightly altered smokable methamphetamine called “ice” came onto the scene. Most methamphetamine seized by law enforcement consists of this form of the drug (called “crystal meth”).

## **VIII. TODAY & TOMORROW (PP. 1.26–1.35)**

Worldwide, 76 million people have an alcohol use disorder, 180 million abuse illicit drugs, 1 billion use tobacco, and 147 million smoke marijuana. 30% to 60% of all hospital beds are occupied by patients suffering from the medical consequences of drug abuse, such as heart disease and cirrhosis of the liver.

The Mexican drugs wars claimed more than 34,000 lives over the last five years, problem gambling and electronic addictions are growing, and synthetic drugs are making a splash among drug users. The positives include new diagnostic imaging techniques, genetic research, new medications to control craving, and better treatment techniques.

## **A. GEOPOLITICS OF DRUGS (pp. 1.27–1.29)**

The monetary value of drugs is often part of government’s economic plan.

### **1. Heroin**

Although four geographic regions grow and export heroin, 90% of the world’s supply is from Afghanistan. Currently in the United States, Colombian white heroin, Mexican black tar and brown heroin, and Afghani white are the most common. Various terrorist groups use the profits from the drug trade to fund insurgencies.

## **2. Cocaine**

All cocaine is grown in South America, in Colombia, Peru, and Bolivia. About 65% of the cocaine smuggled into the United States comes across the U.S.-Mexican border. Colombian and Mexican cartels control the trade.

### **B. HIV, AIDS & HEPATITIS C (p. 1.29)**

Worldwide, more than 25 million people have died of AIDS while over 30 million are living with the disease, the majority in sub-Saharan Africa with growing numbers in Asia. In the U.S., more than 600,000 have died while one million are living with the disease. About 4 million Americans suffer from hepatitis C (HCV), a liver infection that can be fatal. A test for HCV was developed and prevention efforts lowered the rate of infections among IV drug users.

### **C. FROM CLUB DRUGS TO SYNTHETIC DRUGS (pp. 1.29–1.30)**

Raves, clubs and music parties are keeping alive the tradition of mixing music and psychoactive drugs. The most common drug used at these venues, MDMA (ecstasy), is a psychedelic, also referred to as a psychostimulant. One dose runs from \$20 to \$30. The development of synthetic marijuana (K-2,<sup>®</sup> Spice) and synthetic cocaine/methamphetamine has drawn the attention of the DEA. Other club drugs include GHB, a sedative, and dextromethorphan (DXM), found in many cough and cold medications. DXM can induce psychedelic effects when abused.

### **D. MARIJUANA (CANNABIS) & HEALTH (p. 1.30)**

As of May 2011, medical marijuana is legal in 16 states and the District of Columbia. There are conflicts between state and federal laws that remain unresolved. Sinsemilla cultivation techniques have made high-potency marijuana widely available which has increased the compulsive liability and the need for treatment.

### **E. TOBACCO, HEALTH & THE LAW (pp. 130–131)**

Smoking prevention and cessation efforts have increased worldwide. Between 1966 and 2009, the number of U.S. smokers declined from 44% to 23%. However, smoking among women multiplied lung cancer deaths past those from breast cancer. In an attempt to sustain revenues, tobacco companies are focusing on foreign markets, primarily in third world countries. They are also releasing new products (strips, tablets, electronic cigarettes, and flavored tobacco) to attract and retain customers.

In 1998, the biggest class-action lawsuit settlement in history ordered the major tobacco companies to pay \$246 billion over a period of 25 years to 46 states for prevention and treatment of tobacco-related illnesses. Recent lawsuits have focused on secondhand smoke, and smoking in public places. The U.S. Family Smoking Prevention and Tobacco Control Act enacted in 2009 gave the FDA more control over tobacco products.

### **F. AMPHETAMINES, METHAMPHETAMINES & ECSTASY (pp. 1.31-1.32)**

Worldwide, an estimated 35 million people use amphetamines, half that number use cocaine. Newer and cheaper ways of manufacturing methamphetamines continue to proliferate. A significant portion of the



manufacture and wholesale is controlled by Mexican trafficking organizations in Mexico and the United States. A number of states, including Hawaii, Idaho, Iowa, and Oregon, have restricted OTC sales of cold medications containing meth precursors.

From 1998 to 2008, admissions to drug treatment facilities for meth rose from 56,000 to 123,000. In the Philippines, Thailand, and other parts of Asia, small methamphetamine pills called “yaa baa” are more popular than ecstasy.

### **G. OTHER STIMULANTS (p. 1.32)**

There has been a huge growth in the number of coffee outlets, caffeinated soft drinks, and energy drinks (Red Bull®, Rockstar®). The use of khat and betel nuts, in countries outside the United States has also expanded.

### **H. PRESCRIPTION DRUG ABUSE (pp. 1.32-1.33)**

The abuse of prescription and over-the-counter medications especially by adolescents has reached alarming levels. “Generation X” of the rave and club drug scene had morphed into “Generation Rx,” cohorts who share their diverted prescription drugs at “pharming parties.” Pharmaceuticals are now available at the click of a mouse on the Internet.

The most widely abused (and most often diverted) prescription opioids are pain medications like OxyContin® and hydrocodone (Vicodin®). Methadone is now used for pain control as well as for methadone maintenance programs, which has led to increased abuse and diversion of the drug resulting in large numbers of overdoses.

### **I. BUPRENORPHINE (p. 1.33)**

Administering buprenorphine in a doctor’s office to treat opioid craving, rather than exclusively at a drug clinic, is becoming more widespread. Physicians must complete special training to qualify to provide this service to clients. An increase in treatment referrals often results.

### **J. ALCOHOL HANGS ON (p. 1.33)**

Alcohol kills more than 75,000 people a year in the United States and 1.8 million worldwide. An estimated 17.6 million Americans have an alcohol use disorder. The latest research includes a focus on the genetic components of susceptibility, neurobiology of satiation, pharmacological interventions to reduce cravings, and refining treatment techniques.

### **K. STEROIDS & SPORTS (p. 1.33)**

There have been a number of drug-use allegations, positive tests, and drug use suspensions in various sports especially competitive cycling. The World Anti-Doping Agency was created in 1999 to promote, coordinate, and monitor doping in sport.

### **L. BEHAVIORAL ADDICTIONS (pp. 1.33-1.34)**

Behavioral addictions include compulsive gambling and shopping/buying, food addictions, electronic addictions, and compulsive sexuality.

Forty-eight states sponsor or allow legalized lotteries, poker machines, and/or off-track betting. There are also 300-plus Indian gaming

establishments throughout the United States. The federal government passed legislation to make online gambling for money illegal.

The main eating disorders are anorexia, bulimia, and binge-eating disorder. Fast-food-rich environments aggravate eating disorders, particularly compulsive overeating. Food companies foster these disorders by manufacturing foods that are more addictive because of the excessive amount of salt, fat, and sugars they contain.

Electronic media is the newest source of addiction in a technological age; television watching, MMORPG game playing (World of Warcraft<sup>®</sup> and Farmville<sup>®</sup>), and social media.

#### **M. COURT-REFERRED TREATMENT (p. 1.35)**

The current emphasis on demand reduction led to the creation of drug courts in all 50 states. First-time offenders are diverted from jail to treatment. There are more than 2,140 drug courts nationwide.

#### **N. CO-OCCURRING DISORDERS (p. 1.35)**

An increased effort to recognize and treat patients with co-occurring disorders (a substance-abuse disorder and a serious mental illness) has resulted in more frequent use of psychiatric medications. About one-third of those with a mental illness have a substance abuse problem and vice-versa, one-third of those with a substance abuse problem have a mental illness. Continuing concern exists regarding the overuse of psychiatric medications for children.

### ***IX. CONCLUSIONS (p. 1.35)***

Historically, drug abuse and addiction have altered government policies, created new social structures, and hijacked personal priorities. The drive to alter states of consciousness is as essential to human nature as the drive to survive and procreate.

The higher the potency of a drug, the more overwhelming is the brain's ability to rebalance itself, which leads to neurochemical changes. Research leads to changes in treatment techniques.

## ***X. WHAT IS A PSYCHOACTIVE DRUG? (PP. 1.35–1.37)***

### **A. DEFINITION (p. 1.36)**

Any substance that directly alters the normal functioning of the central nervous system is considered a psychoactive drug. This definition could be expanded to include any behaviors (e.g., gambling) that directly activate the brain's alcohol and drug addiction pathways.

### **B. CHEMICAL, TRADE & STREET NAMES (p. 1.36)**

Drugs have chemical names, trade names, and street names, e.g., alprazolam, Xanax, and “xannies.”

### **C. CLASSIFICATION BY EFFECTS (p. 36)**

A practical way to classify these substances is by their overall effects:



“uppers” for stimulants, “downers” for depressants, and “all arounders” for psychedelics. Other substances can be defined by their purpose, e.g., performance-enhancing sports drugs, inhalants, and psychiatric medications.

## **XI. MAJOR DRUGS (P. 1.37)**

### **A. UPPERS (STIMULANTS) (p. 1.37)**

Uppers, or CNS stimulants, include cocaine, amphetamines, amphetamine congeners, plant stimulants, look-alike stimulants, caffeine, and nicotine

#### **1. Physical Effects**

Small doses stimulate the central nervous system, creating insomnia, energized muscles, increased heart rate, and decreased appetite. Frequent use depletes the body’s energy chemicals. Large amounts can cause heart, blood vessel, and seizure problems.

#### **2. Mental/Emotional Effects**

Stronger stimulants increase confidence and excitement and can cause a rush and/or high. Larger doses can cause extreme nervousness, anxiety, and anger. Prolonged use causes intense anxiety, paranoia, mental confusion, and sometimes a psychosis.

### **B. DOWNERS (DEPRESSANTS) (p. 1.37)**

The four categories of CNS depressants are:

**Opiates and opioids:** opium, morphine, heroin, oxycodone, hydrocodone, methadone, and buprenorphine.

**Sedative-hypnotics:** benzodiazepines, e.g., Xanax,<sup>®</sup> Valium,<sup>®</sup> barbiturates, and Z-hypnotics, e.g., zolpidem (Ambien<sup>®</sup>).

**Alcohol:** beer, wine, and hard liquors.

**Others:** antihistamines, skeletal muscle relaxants, look-alike sedatives, and bromides.

#### **1. Physical Effects**

Small doses depress the central nervous system. They can slow heart rate and respiration, induce sleep, dull the senses, and most important, diminish pain. Excessive drinking or sedative-hypnotic use can slur speech and cause digestive problems. Sedative-hypnotics and alcohol in large doses, or in combination with other depressants, can cause dangerous respiratory depression and coma.

#### **2. Mental/Emotional Effects**

Initially, small doses act like stimulants because they lower inhibitions thus inducing freer behavior. With excess use, depressant effects begin to dominate. Certain downers can also induce euphoria or a sense of well-being. Long-term use can cause psychological and physical dependence.

### **C. ALL AROUNDERS (PSYCHEDELICS) (p. 1.37)**

Psychedelics are substances that can distort perceptions. They are extracted from plants or synthesized.

**Indole Psychedelics:** LSD, psilocybin mushrooms, ayahuasca, DMT  
**Phenylalkylamines:** peyote (mescaline), ibogaine, MDMA, MDA, 2CB  
**Cannabinoids:** marijuana, hashish.  
**Others:** ketamine, PCP, nutmeg, Amanita mushrooms.

### 1. Physical Effects

Most hallucinogenic plants, cause nausea and dizziness. Marijuana increases appetite and makes the eyes bloodshot. LSD raises the blood pressure and causes sweating. MDMA and LSD act like stimulants. The physical effects are not as dominant as the mental effects in this class of substances.

### 2. Mental/Emotional Effects

Psychedelics distort sensory messages to and from the brain stem so many external stimuli are intensified or altered (illusions). Psychedelics can also trigger hallucinations along with distorted thinking (delusions).

## **XII. OTHER DRUGS & ADDICTIONS (PP. 1.37–1.38)**

Three other groups of drugs can stimulate, depress, or confuse the user: inhalants, anabolic steroids and other sports drugs, and psychiatric medications.

### **A. INHALANTS (DELIRIANTS) (pp. 1.37–1.38)**

Inhalants are gaseous or liquid substances that are inhaled and absorbed through the lungs. They include organic solvents, volatile nitrites, and anesthetics, especially nitrous oxide.

#### 1. Physical Effects

Most often there is CNS depression causing dizziness, slurred speech, unsteady gait, and drowsiness. Heavy use can cause stupor, coma, and asphyxiation. Organic solvents can be toxic to cells in the lung, and other tissues.

#### 2. Mental/Emotional Effects

Small amounts commonly cause impulsiveness, excitement, mental confusion, and irritability. Some inhalants cause a rush through a variety of mechanisms. Larger amounts can cause delirium and hallucinations.

### **B. ANABOLIC STEROIDS & OTHER SPORTS DRUGS (p. 1.38)**

Anabolic-androgenic steroids are the most common performance-enhancing drugs. Others include stimulants (e.g., amphetamines, ephedrine, and caffeine), human growth hormone (HGH), human chorionic gonadotropin (HCG), herbal/nutritional supplements (e.g., creatine and androstenedione), and some therapeutic drugs (e.g., painkillers, beta blockers, and diuretics).

#### 1. Physical Effects

Anabolic steroids increase muscle mass and strength. Prolonged use can cause acne, high blood pressure, shrunken testes, and masculinization in women.

## **2. Mental/Emotional Effects**

Anabolic steroids often cause a stimulant-like high, increased confidence, and aggression. Prolonged large-dose use can be accompanied by outbursts of anger known as “roid rage.”

## **C. PSYCHIATRIC MEDICATIONS (p. 1.38)**

Psychiatric medications are used to try to rebalance irregular brain chemistry that has caused mental problems, drug addiction, and other compulsive disorders. The most common are antidepressants (e.g., Tofranil,<sup>®</sup> Prozac<sup>®</sup>), antipsychotics (e.g., Risperidol,<sup>®</sup> Zyprexa<sup>®</sup>), and antianxiety drugs (e.g., Xanax<sup>®</sup> and BuSpar<sup>®</sup>) including panic disorder drugs (e.g., Inderal<sup>®</sup>). These drugs are prescribed more frequently today, despite the fact that the national incidence of the disorders has remained fairly constant over the past 30 years.

### **1. Physical Effects**

Psychiatric medications have a wide variety of physical side effects, particularly on the heart, blood, and skeletal-muscular systems.

### **2. Mental/Emotional Effects**

Antidepressants elevate mood, antipsychotics control schizophrenia, thought difficulties, and hallucinations, antianxiety drugs inhibit anxiety-producing thoughts.

## **D. COMPULSIVE BEHAVIORS (p. 1.38)**

Behaviors such as eating disorders, compulsive gambling, sexual compulsion, Internet addiction, and compulsive shopping affect many of the same areas of the brain that are affected by psychoactive drugs.

### **1. Physical Effects**

The major physical effects are generally confined to neurological and chemical changes in the brain’s reward pathway. The exception is eating disorders, excessive or extremely limited food intake can lead to cardiovascular problems, diabetes, nutritional diseases, and/or obesity.

### **2. Mental/Emotional Effects**

The development of tolerance, psychological dependence, and in some cases, withdrawal symptoms occur due to compulsive behaviors. The compulsion to gamble or overeat is every bit as strong as drug-seeking behavior.

## ***XIII. CONTROLLED SUBSTANCES ACT OF 1970 (PP. 1.38–1.39)***

The Comprehensive Drug Abuse Prevention and Control Act of 1970, was enacted to reduce the burgeoning availability and use of psychoactive drugs.

The act consolidated and updated most drug laws that had been passed in the twentieth century.

### **The Schedule of Psychoactive Drugs**

- Schedule I - have a high abuse potential and supposedly no accepted medical use. (LSD, marijuana)
- Schedule II - have a high abuse potential with severe psychic or physical dependence liability even though they have medical uses. (cocaine, methamphetamine, opium, morphine).
- Schedule III - have less abuse potential (Tylenol<sup>®</sup> with codeine).
- Schedule IV - have low abuse potential (the benzodiazepines).
- Schedule V - have very low abuse potential. Some of these drugs are sold over the counter (Lomatil<sup>®</sup>).

## **Chapter 1 - Discussion Topics**

1. How have people throughout history used psychoactive drugs to cope with their environment?
2. Discuss natural highs and rushes that humans can induce without the use of psychoactive drugs (sustained aerobic exercise like running which produces elevated levels of endorphins, thrill-seeking activities that mimic the adrenaline rush of stimulants).
3. Give examples of governmental involvement in the drug trade or behavioral addictions such as gambling.
4. Discuss the different ways technological advances have increased the addictive liability of specific drugs (development of the sinsemilla growing technique for marijuana which have increased the THC levels).
5. Describe how the development of time-release medications changed the abuse of oxycodone.
6. Discuss ways that psychoactive drugs have been used for spiritual and religious purposes.
7. Discuss the development of different ways of refining and using opium in the nineteenth and twentieth century.
8. What were the nineteenth- and twentieth-century developments that led to different ways of refining and using cocaine?
9. What drug problems do we face today that our ancestors did not have to face and why?
10. What technical developments and marketing strategies have made tobacco the health problem it is today?
11. How did the battle between prohibition, temperance, and drinking affect the evolution of laws regulating the use of alcohol?
12. Discuss the reasons drugs have three types of names
  1. Street or slang
  2. Scientific,
  3. trade
13. Have the students list 10 or more reasons people use psychoactive drugs and discuss the reasons as they relate to the following:
  - a. Identify the major age groups in western society (pre-teens, teenagers, young adults, middle age, elderly) and determine if the reasons for use are relevant or the same for all age groups. If they are not the same, how do they differ?
  - b. Identify different cultures within North America and across the globe (Native Americans, British, Islamic, Arabic, Thai) and determine if the reasons for use are relevant or the same for all cultures. Take into consideration the type of use (ceremonial, recreational etc.), and the overall “cultural acceptance” of use.

## **Critical Thinking & Class Exercises**

1. Have the class collectively construct a timeline that illustrates how governments have been involved in the drug trade.
2. Hold a mock public hearing in class to determine if marijuana should be legalized or remain illegal. Use historical examples and current factual information to support the pro and con positions. There are three historical timeframes the students can consider:
  - a. Historical timeframe - A hearing *limiting* the arguments to the information that was available in 1937 when the Marijuana Tax Act was enacted.
  - b. Informed historical timeframe – a hearing conducted in 1937 *including* in the arguments all of the information available today - to determine if marijuana should remain legal, become illegal or be given a status of decriminalization.
  - c. Current day public hearing to determine whether marijuana should be decriminalized or legalized and under what controls in a state in which marijuana is not currently decriminalized and in which medical marijuana is not legal.
3. Have the students play the role of a U.S. Congressional member in 1830. Have the “legislators” discuss and debate whether laws to limit the use of alcohol should be established in support of one of three views of the time; 1.) temperance, 2.) prohibition, 3.) no regulations.
4. Discuss how the lessons of history could suggest solutions to current alcohol and other drug problems.
5. Ask students to collect articles in newspapers and select magazines (online or print) which discuss any one of the five historical themes listed below. Have the students write a brief summary on ways the articles selected illustrate one of the five themes
  1. Human’s basic need to cope with their environment and enhance their existence.
  2. Human brain chemistry can be affected by psychoactive drugs, behavioral addictions, and mental illness to induce an altered state of consciousness.
  3. The ruling classes, governments, and industry, along with criminal organizations, have long been involved in growing, manufacturing, distributing, taxing, and prohibiting drugs.
  4. Technological advances in refining, synthesizing, and manufacturing drugs have increased the potency of these substances.
  5. The development of faster and more efficient methods of delivering drugs into the body has intensified the effects.

6. Ask students to present historical justification for or against the use of medical marijuana, including current federal and state court rulings, particularly in their own state.
7. Have students create a display of images (printed from online sources) that relate to the history of alcohol and other psychoactive drugs – they should be prepared to present a brief description. Suggested image sources include the archives of the National Library of Medicine, the DEA, and the National Archives among others.