

DRUG ADDICTION, TREATMENT, AND POLICY

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# CHAPTER I

## U.S. DRUG POLICY

### Introduction

During the 1980s, President Ronald Reagan called for our country to declare a "War on Drugs." This declaration was put forth because drug use had reached an all-time high in the late 1970s (Goode 99). The United States also had "the highest rate of drug abuse of any industrialized country in the world" (Bender 18). More than 26 million people used illicit drugs in 1991, and almost 13 million used at least once a month (Bender 18).

Although it was with good intentions that Reagan supported a tough drug policy, ultimately time has proven it to be a failure. Since 1981, our government has spent over \$100 billion in federal, state, and local taxes to support our drug enforcement programs (Bender 20). The 1995 budget for this War on Drugs equaled a record high of \$13.2 billion, and has increased every year since being implemented (Ray 78). About \$8 billion alone is spent on reducing the supply of drugs in our country, which is an extremely high figure considering drugs are readily available in virtually every city in the United States (Ray 78).

After a decline during the 1980s, drug use is on the rise again, prisons are overcrowding, relapse rates are

still high, and essentially the problem is becoming increasingly worse (Koch). Also each new year we can read in the newspaper that record drug seizures are being made and that more and more drugs are being confiscated.

Because of these occurrences, I believe an alternative solution is necessary. In this paper, I will examine first (in Chapter I) our current drug policies and evaluate their effectiveness. Next, to further my argument, it is helpful to review (in Chapter II) the physiological effects of drugs on the human body. A review of the physiological factors will render an awareness of the different categories of drugs in our society, legal and illegal. This study will then enable us to identify (in Chapter III) some effective treatment possibilities for drug addiction problems relating to specific drugs. An example of an effective treatment for a drug addiction problem is using methadone to treat heroin addiction. Finally, studying the sociological factors of drug abuse (in Chapter IV) will possibly present alternatives to simply jailing users, perhaps thereby reducing the crime rate and other economic expenses associated with drug use.

### Drug Policy Background

First, it is necessary to discuss the current drug policies of the United States and to provide an explanation of the evolution of those policies. The current drug policies of the United States were essentially created with

the passing of two historic laws: the Eighteenth Amendment of 1919 and the Comprehensive Drug Abuse Prevention and Control Act of 1970 (Ray 66-68).

The passing of the Eighteenth Amendment, which also led to the prohibition of alcohol, created a division of government whose sole responsibility was preventing the use of narcotics (Ray 66). This 1919 act proposed that "the cure for narcotic addiction was to prevent the addict from having access to the drug" (Ray 66). With the enactment of this legislation, many physicians prescribing illicit drugs were arrested and the illicit drug trade was created. Unfortunately, addicts could then be charged fifty times the legal retail drug prices (Ray 66), so that the illicit drug trade flourished with this incentive. Another important law was the Harrison Act of 1914, which enforced similar penalties, but more leniently than the 1919 act (Ray 65-6). Many other acts would follow these laws, primarily focusing on increasing penalties for dealing in the vastly growing drug trade (Ray 66).

The 1970 Comprehensive Drug Abuse Act also plays a major role in our present drug policy. This act established the five separate schedules for classifying all narcotics and other dangerous drugs and made any first-time possession offense punishable with fines and/or imprisonment (Vallance 139). These types of legislation have created the current measures, which are intended to send a "get-tough message to

casual users, drug addicts, street dealers, and major traffickers" (Vallance 6).

The effects of this "get-tough" policy are evident in our prison population, where from 1980-1992 the number of people in U.S. prisons has doubled (Traver 17). It is also true that 50% of the people in prison are there for either possession or sale of drugs, and possession convictions account for more than 90% of those convicted on drug charges (Traver 17). From 1989-90, the states' capital expenditures for prisons increased 150.6% (Baum 310). The prison population in the United States is 426 per 100,000 citizens, the highest of any country, compared with 35 per 100,000 in Holland, which has a more medicalized drug policy (Vallance 88).

Another act passed earlier this century that has become a controversial topic was the Marijuana Tax Act of 1937. This act placed marijuana "under the same type of legal control as cocaine and the opiates" (Ray 67). There were two factors that prompted this legislation. The first occurred when newspaper reports began falsely linking the use of marijuana with crime (Ray 67). The other was the 1937 government endorsed film Reefer Madness, which exaggerated marijuana use to be more dangerous than heroin (Walker 8).

Because of the passing of this propaganda-induced legislation, "over 400,000 Americans are arrested each year

for marijuana offenses at an estimated cost of \$5 billion" (Traver 157). Furthermore, the ten-millionth American was arrested on marijuana charges early in 1996 (Buckley 75). After analyzing the physiological effects of marijuana, it was discovered that the active ingredient in this drug (THC) "is one of the least toxic drugs known to man" and "that marijuana does not create a physical dependence" no matter how much one uses it (Goode 56-7).

### Current Policy Problems

Examination of our current drug prohibition legislation renders an understanding of the problems that occur because of their existence. It can be stated that our War on Drugs has fundamentally created the same effects as prohibition of alcohol in the 1920s by establishing "more laws and policemen, more violence and corruption, more crowded courts and jails, wider disrespect for government and the law, and more power and profits for the gangsters of organized crime" (Boaz 24). Prohibition of alcohol led to the increases in crime rates during the twenties, just as prohibition of drugs has caused today's alarming crime rates (Boaz 1).

The effects of drug prohibition in our society are numerous, ranging from increases in crime to increases in costs and to the creation of stronger drugs, like crack (Boaz 1-3). These effects include the fact that 25% of people arrested for drugs are involved in trafficking compared to the 75% arrested for simple possession, often

for marijuana (Benjamin 3). According to Boaz (1990), "most, if not all, drug related murders are the result of drug prohibition" (45).

In 1992, it was estimated that the drug market in the United States generated in excess of \$130 billion a year, all the money going to organized crime and drug dealers (Traver 16). "By criminalizing drug use, we have done nothing but allow vast criminal enterprises not only to flourish but to take over the governments of nations like Mexico and Colombia" (Wenner et al. 54). "We're spending billions of dollars in an effort that is enriching the very people we're trying to stop" (Boaz 12).

Because of these many problems associated with our current drug policies, the time has come to develop alternative solutions. After thirteen years, our government repealed the prohibition of alcohol, and the benefits were seen immediately. While murder rates rose during prohibition of alcohol, they declined for eleven consecutive years following its repeal (Boaz 45). Basically, "the repeal of Prohibition was used to put the bootleggers, like Al Capone, out of business and to eliminate the costs associated with the prohibition laws" (Boaz 24).

## CHAPTER II

### PHYSIOLOGICAL EFFECTS OF DRUGS

The biochemical mechanisms of drug actions are dependent on specific neurotransmitters, their receptor sites, and their particular location in the neuron system. Each of the drugs that will be mentioned binds to one of five neurotransmitters -- acetylcholine, dopamine, GABA, serotonin, or epinephrine (Pinger 67).

Neurotransmitters are chemical messengers within nerve cells that produce postsynaptic responses when released in the body (Pinger 67). The five neurotransmitters most involved with the main categories of abused drugs are all excitatory or inhibitory, meaning they lead to an action potential or withhold an impulse transmission (Pinger 68).

It is believed that drugs may work in several different ways. Pinger (1995) proposes that drugs can either (1) bind with autoreceptors that inhibit the release of neurotransmitters, (2) bind with receptors that lead to a formation of an action potential, or (3) destroy enzymes that break down neurotransmitters, allowing the drugs to continue to affect the receptor sites (70). The effects of drug use may lead to changes in perception, mood, thinking, or behavior (Pinger 70).

Administration of drugs causes specific physiological actions. In the human body, the hypothalamus organ in the brain maintains a homeostatic balance (Taylor). This

balance is necessary to maintain heart rate, body temperature, blood pressure, etc. (Taylor). Similarly, homeostasis is achieved at the neuronal level (Taylor). This means the receptor sites on a receiving neuron are adjusted correctly in order to accept information from the sending neuron (Taylor). After the administration of a drug, the receiving neuron is excessively stimulated, which causes increased heart rate and a "downregulation" of receptor sites to accommodate for this excess (Taylor). Heart rate eventually returns to normal, and tolerance sets in, meaning it becomes necessary for more of the drug to be taken in order to achieve the same effect (Taylor). Tolerance leads to even more "downregulating" of receptor sites and to possible withdrawal depending on the drug (Taylor).

Withdrawal is a phenomenon that takes place when a person takes a certain drug in high quantities over a long period of time and then immediately stops (Taylor). Withdrawal usually produces physiological effects opposite to the direct side effects of the drug (Taylor). For example, heroin produces euphoria, but withdrawal produces dysphoria (Taylor).

Withdrawal, in certain drugs, can be a major indication of addiction. This occurs because "drugs that reach the brain quickly, and are metabolized quickly, will produce tolerance faster" (Taylor). These are "fast in, fast out"

drugs (Taylor). An example of this type of addiction is crack cocaine addiction from inhalation, which develops more quickly than barbiturate addiction from oral administration (Taylor).

The treatment for withdrawal can occur in one of two ways, either by the "cold turkey" method or by a gradual reduction of the drug intake (Taylor). The preferred strategy is a gradual reduction because "cold turkey" brings on strong withdrawal symptoms that may cause severe discomfort for the addict (Taylor).

Addiction is essentially defined as being either a "classic" addiction or a psychological addiction (Goode 29). "Classic" addiction is a form which involves withdrawal symptoms including chills, fever, diarrhea, muscular twitching, nausea, vomiting, cramps, and general aches and pains usually in the bones and joints (Goode 28). This form of addiction is physical and evident in alcohol, tranquilizers, barbiturates, and in the narcotics (heroin, morphine, etc.) (Goode 28).

Goode (1993) has stated that addiction may exist in a psychological sense with possible "cravings" (28-9). It is possible that some addiction definitions are "disseminating propaganda to convince people that nonaddicting substances were just as bad for them, that they could be just as dependent on them as on the truly addicting drugs" (Goode 29). Psychological dependence is difficult to define

because it is possible that this form of addiction relates to the individual, but may not be present in all individuals.

In order to understand why some people become either physiologically or psychologically addicted to a certain drug, it is essential for us to understand the effects created in the body by each different category of drugs. In my research I have found that most authors agree that most of our drug abuse in this country occurs within six major categories of drugs. These categories include marijuana, the hallucinogens, the opiates, the depressants, the stimulants, and nicotine. Alcohol, which is a depressant, is also often discussed as a separate category.

### Marijuana

Marijuana is one of the least understood drugs as well as one of the most controversial. "It is the most popular illicit drug in the United States and the third most popular of all drugs, after alcohol and nicotine" (Pinger 315). With the recent passing of laws such as Proposition 215 in California and Proposition 200 in Arizona, we can probably expect even more controversy. These laws have made it legal for the medical uses of marijuana for certain AIDS patients, cancer patients, glaucoma patients, and others seeking relief from painful diseases ("Marijuana as..." 1997). The guidelines of these laws state that "a sick person and their primary caregiver could legally possess and grow marijuana

for medical use when recommended by a doctor" ("Marijuana as..." 1997).

The active ingredient in marijuana is delta-9-THC (Taylor). In 1992, scientists discovered a natural substance in the brain of pigs that is similar to marijuana, which they called anandamide (Pinger 312). It is believed that delta-9-THC binds to the receptors for the anandamide neurotransmitter (Taylor). "The isolation of a natural marijuana-like substance provides hope that the mode of action of THC will eventually be understood" (Pinger 312). It is believed that THC "has effects on the electrical properties of nerve membranes, and alters turnover rates of serotonin and dopamine" (Ray 412).

The acute physiological effects of marijuana produce increases in pulse rate, decrease in muscle strength, increase in blood pressure, impairment of motor tasks and reaction times, reddening of the eyes, and dryness of the mouth (Pinger 312). The acute psychological effects are euphoria, relaxation, sleepiness, and an enhancing of the senses (Pinger 314). When taken in high doses, possible hallucinations, confusion, paranoia, and disorientation have been found (Pinger 315).

The chronic effects of marijuana use are believed to be similar to tobacco use, specifically with effects on the respiratory system (Pinger 312). However, "no definite links between marijuana use and cancer or heart disease have

been established yet" (Pinger 313).

It has been found that physiological tolerance to THC can develop in both human and animal subjects (Pinger 313). However, the addiction risk for marijuana is low when compared to the other categories of drugs (Taylor), and it has been stated that marijuana "does not create physical dependence and one cannot possibly become addicted" (Goode 57). This is quite unusual for a drug that is inhaled, but probably is caused by its slow metabolization, or a "fast in, slow out" drug (Taylor).

The question of dependence regarding marijuana is also not fully understood (Pinger 313). "Studies with animals resulted in no observable withdrawal symptoms" (Pinger 313). In humans, the desire to use is present, but this is not defined as physical dependence (Pinger 313). An interesting fact of marijuana use is that "there has never been a reliably reported human death from overdose of THC, marijuana, hashish, or any cannabis preparation," which could never be said about such legal drugs as alcohol and nicotine (Goode 56).

Even though marijuana is placed in the Schedule I drug category, there are a few medical uses of the drug. Schedule I drugs are defined as having a "high potential for abuse and possess no acceptable medical use in treatment in the U.S." (Ray 70). However, in 1975 medication containing THC was found to be effective in reducing severe nausea

caused by cancer fighting drugs (Ray 417). This led to the sale of Marinol, THC containing capsules, to cancer chemotherapy patients (Ray 417).

Current groups are seeking to have marijuana cigarettes approved, thus moving marijuana from a Schedule I drug to Schedule II (Ray 417). As of 1995, only 13 patients have received FDA approval for medical marijuana use since 1975 (Ray 417-8). This number has already been increasing since the passing of the two laws in California and Arizona.

### Hallucinogens

The hallucinogen, or pyschedelic, category of drugs includes substances such as LSD, psilocybin, mescaline, MDMA, DMT, and PCP (Ray 399). The effects of hallucinogenic drugs in the body often include changes in visual perception, altered sense of time, changes in perception of one's own body, some alterations of auditory input, and at times a "mixing of senses" called synesthesia (Ray 377).

The physical symptoms associated with these types of drugs often produce dilated pupils, elevated temperature and blood pressure, and increased salivation (Ray 376). Some of the drugs in this category (such as PCP or the amphetamine derivatives like MDMA) may create different symptoms, and it is often argued that they do not, therefore, belong in this category (Ray 389-93).

It is believed that many of the hallucinogenic drugs like LSD and psilocybin work in the body by affecting

serotonin receptor sites (Ray 377). Serotonin is primarily an inhibitory neurotransmitter, but may have excitatory properties as well (Ray 377). Serotonin is mainly involved in alertness, eating, sleep, dreaming, mood, sexual activity, and pain perception (Taylor). Low levels of serotonin are linked to clinical depression (Taylor).

Hallucinations are believed to occur because LSD and the other psychedelics interfere with serotonergic nuclei in the pons area of the brain (Taylor). The pons is the primary area involved in regulating dream activity (Taylor). The action of these drugs is a complicated issue because at times they may act as either an agonist or antagonist at different serotonergic receptors (Ray 377).

Another phenomenon of LSD and psilocybin is the fact that they are very potent substances. LSD is known as "one of the most potent psychochemicals known to man" (Ray 376). Only a very small sample of the drug is needed to produce effects, sometimes as low as 0.03 mg (Ray 372). Even though this drug is quite potent, "LSD has never been definitely linked to even one human overdose death" (Ray 376). In rats, the lethal dose of 50% (LD50) of the group studied is 400 times the effective dose (Ray 376).

A physical dependence or addiction to these types of drugs has also not been shown to be possible (Ray 376). Tolerance does develop after daily use, but the recovery is equally as rapid (Ray 376). The treatment for adverse

with serotonin receptor antagonists such as chlorpromazine (Thorazine) (Ray 376-7).

### Depressants

The depressants are the category of drugs that include alcohol, barbiturates, and benzodiazapines (Taylor). This category of drugs binds to different sites of the neurotransmitter GABA in the brain (Taylor). GABA exists in the brain as a major inhibitory neurotransmitter (Taylor). Depressants work by "enhancing the activity of GABA, by not binding with the neuron's receptor sites, but by binding at sites nearby and somehow enhancing the binding of GABA at its binding sites" (Pinger 144). These drugs are all available legally either through a physician's prescription for barbiturates and benzodiazapines, or at local stores for alcohol-containing products.

The physical effects of the depressants include symptoms such as anxiety relief, sedation, hypnosis, general anesthesia, and possible coma or death occurring by the depression of the respiratory system (Pinger 144). They also create a strong disinhibiting effect on the frontal lobe, especially alcohol (Taylor).

The chronic effects produced by depressants include insomnia, weakness, cardiovascular problems, anorexia, nausea, and possible seizures (Pinger 144). The addiction risk for these substances is moderately high, but not as

high as for heroin, crack, or nicotine (Taylor). The depressants can also produce tolerance as well as psychological and physiological dependence (Pinger 144).

The chronic use of depressants may also cause withdrawal symptoms (Pinger 144). Alcohol withdrawal can be fatal, producing delirium tremens, or the D.T.s, which are dangerous convulsions (Taylor). "The mortality rate from untreated, abrupt withdrawal from barbiturates is about 5%" (Pinger 144).

Although the benzodiazapines themselves may cause withdrawal symptoms as well, they may provide partial relief from withdrawal of barbiturates and alcohol (Pinger 145, 152). Other medical uses of the depressants include anesthetic agents, preanesthetic agents, antiepileptic agents, anxiolytic agents, and management of sleep disorders (Pinger 145).

Because it is one of the most dangerous substances known to man, alcohol is usually discussed on its own. It is estimated that 85% of all "violent" crime involves the presence of alcohol (Taylor), and alcohol is present in 67% of all homicides (in either the victim, perpetrator, or both) (Pinger 195). Rapists are intoxicated 50% of the time and the victim 30% of the time (Pinger 195). These statistics might surprise people in our society who believe that the illegal drug addicts are causing all our problems.

It has long been established in our society that alcohol has been associated with family violence, physical abuse, child abuse, psychological abuse, abandonment, and suicides, more so than any other substance (Pinger 195). One-half of all fatal traffic accidents are alcohol-related as are the four leading causes of accidental death (Pinger 194). The overall costs of alcohol abuse and alcohol dependence is equivalent to over \$150 billion a year (Pinger 194). It should be clearly evident, therefore, that our government needs to be more concerned with the problems associated with alcohol abuse versus the much smaller problem of illegal drug abuse.

### Stimulants

The category of drugs known as the stimulants includes cocaine, amphetamines, and the cathinoids (Pinger 242). These drugs increase the activity of the central nervous system by intensifying the action of the neurotransmitters dopamine and norepinephrine (Pinger 242). They accomplish this by blocking the reuptake of the two neurotransmitters and thus increasing their availability in the synapses between nerve fibers in the central and peripheral nervous systems (Pinger 250).

Dopamine is primarily an inhibitory neurotransmitter that is involved in motor control, memory and learning, and the experience of pleasure (Taylor). Low levels of dopamine are linked with Parkinson's disease, while high levels are

linked with schizophrenia (Taylor). Norepinephrine is an excitatory neurotransmitter that is involved in alertness, wakefulness, and mood (Taylor). Low levels are linked with depression, while elevated levels are linked with manic behavior (Taylor).

The immediate mode of action for the stimulants, however, is not clearly understood (Pinger 250). These drugs may be administered through ingestion, absorption, inhalation, or injection (Pinger 242). The acute effects of the stimulants include increases in respiration and heart rate, loss of appetite, decrease of fatigue, and increases in blood pressure, body temperature, and alertness (Pinger 251). Low doses generally produce euphoria, excitation, and increased energy in subjects, whereas large doses produce hallucinations, psychosis, and repetitive behavior (Taylor).

The chronic effects associated with this type of drug use include dizziness, irregular heart beat, sleeping disturbances, chest pains, impotence, tolerance, depression, and possible seizures (Pinger 251-3). The addiction risk for these drugs is high, especially for crack and I.V. cocaine use (Taylor).

The stimulants may produce possible withdrawal-like symptoms in some users, but they are not believed to be "classically" addictive as the opiates and barbiturates are (Goode 28-9). Classic withdrawal symptoms include shaking, convulsions, and possible coma (Pinger 266). "Primary

withdrawal symptoms in cocaine are believed to be psychological, including cravings and depression" (Pinger 253).

Animal experiments have also shown the addictive characteristics of cocaine and amphetamines (Goode 30). Discontinuing the use of amphetamines brings on many withdrawal-like symptoms including severe depression, anxiety, fatigue, lethargy, sleeplessness, nightmares, irritability, fear, and muscle aches and pains (Taylor).

Two alarming statistics involving cocaine use include the number of drug-related deaths and the number of emergency room episodes (Ray 27). In 1992, cocaine had the highest number of drug-related deaths at 3,465 (alcohol-in-combination was second with 2,944) and the second highest number of emergency room episodes with 119,843 (alcohol-in-combination was first with 141,773) (Ray 27). It is also reported that there are possibly more than five million users of cocaine each year (Bender 28).

It is believed by most that cocaine can be lethal because of possible blockages of blood circulation (infarcts), abnormalities in the heart's rhythm (arrhythmias), and strokes (Drug... 115). However, it is unproven that there is a direct relationship between cocaine and these types of cardiac problems (Drug... 116).

The current treatment for stimulant dependence is not very helpful. Currently, there is no antidote drug for

cocaine and amphetamine dependence, and a search for one is underway (Pinger 261). Detoxification is typically carried out fairly easily, but preventing a relapse is the main problem (Goldstein 163).

The current standardized treatment for stimulant drug dependence includes typical antidepressant medications which may alleviate the profound depression associated with their use (Goldstein 163). These antidepressant drugs are used to reduce cravings and increase the abstinence rate (Goldstein 163).

There are very few medical uses for the stimulants (Pinger 242). Amphetamines are used to treat obesity, narcolepsy, and attention deficit disorder with hyperactivity (Pinger 266). The medical uses of cocaine include local anesthetic before examinations and before surgeries in the oral, nasal, and laryngeal areas (Pinger 253).

One problem that has been found with the production of legal stimulants, such as amphetamines, is that they are difficult to control (Traver 156). Amphetamines are addictive, mind-altering, and life threatening drugs that are legal because they are thought "to help good people do good things" (Traver 156). It is estimated that eight to ten billion amphetamine pills are sold legally each year even though there are relatively few known medical uses (Traver 156).

Another aspect of concern for these legal drugs is the fact that massive amounts are illegally diverted to the black market each year (Traver 156). The reason for the failure to control these substances is probably due to the powerful lobby of the drug manufacturers (Traver 156).

### Opiates

The category of drugs called the opiates, or narcotics, include opium, morphine, codeine, heroin, and fentanyl (Taylor). The symptoms produced by these drugs often include euphoria, relaxation, pain relief, detachment, impotence, and stupor (Taylor). Opiates also may induce vomiting or nausea because of their ability to stimulate the brain area controlling these symptoms (Ray 357).

One of the most dangerous side effects of these drugs is their ability to depress the areas of the brain involved in respiration (Ray 356). These respiratory centers, located in the brainstem, respond less to carbon dioxide levels in the blood and may cause death in excessive doses of these drugs (Ray 356). "There is also evidence that a large fraction of those who die from heroin overdose have elevated blood alcohol concentrations" (Ray 357).

The physiological actions of this category of drugs works differently from all the other groups in that it does not involve neurotransmitter receptor sites (Ray 351). Instead, these drugs work by stimulating the body's own internal pain control center in the brain, known as the

periaqueductal grey (Taylor). The periaqueductal grey is a "self-inhibiting" organ that is inactive during pain free episodes (Taylor). However, during times of traumatic pain it is the job of this organ to release the endogenous opioids known as endorphins or enkephalins (Taylor).

It is the job of these endogenous opioids to stop the periaqueductal grey's self inhibition, thus ending pain messages at the spinal cord level (Taylor). The opiate drugs bind to these endogenous opiate receptor sites, thus externally triggering the periaqueductal grey (Taylor). Despite earlier beliefs, the use of opiate drugs does not cause damage to any tissue or organ system (Ray 357).

The addiction risk for the opiate category of drugs is dependent upon the route of administration chosen (Taylor). For example, smoking morphine or opium possesses a high addiction risk, whereas injected heroin has a very high addiction risk (Ray 31). The addiction risk is also related to the time that it takes to reach the brain. The faster a drugs' effects occur, the more addictive the substance is (Taylor). Tolerance may develop in chronic users and may lead to physical and psychological dependence (Ray 354-5).

Opiate withdrawal symptoms are described as being similar to a "24-hour flu" but often twice as long (Ray 354). However,

most regular users of heroin are not physically addicted in the classic sense. They take wildly varying amounts of heroin on a day-by-day basis, often go a day or two without the drug and do not suffer powerful withdrawal symptoms. (Goode 29)

This is a common misconception, but the facts tell us that there are about 500,000 addicts in the United States with maybe two or three times as many occasional users (Ray 359).

The opiate drugs also have a few important medical uses in our society. Heroin remains a Schedule I drug, however, with no acceptable medical uses (Ray 70). One major medical use of these drugs is reducing the response to pain, especially the suffering component involved (Ray 353). Pain relief is essential when patients undergo surgery or when involved in a painful accident. Other medical uses include counteracting the effects of diarrhea, removing the symptoms of dysentery, and suppressing "unproductive" coughing (Ray 353).

Immediate treatment for narcotic overdoses usually involves narcotic antagonists, such as naloxone (Ray 350). Naloxone can save lives by reversing a narcotics' effect of depressed respiration (Ray 350). If given to a person who is physically addicted, immediate withdrawal symptoms may occur (Ray 350). The preferred long-term treatment of the opiates is methadone and LAAM maintenance because they prevent withdrawal symptoms and the associated cravings (Ray 363).

## Nicotine

Nicotine is the main ingredient in substances such as cigarettes, chewing tobacco, and snuff. Nicotine has also been labeled as "the most addictive drug known to man" (Benjamin 3). There are forty-three known carcinogenic, or cancer causing, agents in nicotine (Pinger 221). It is also true that nicotine and tobacco products "kill more Americans each year than alcohol, cocaine, heroin, homicide, suicide, car crashes, fires, and HIV infections combined" (Pinger 215). The four leading causes of death each year in the United States are related to smoking (Pinger 223).

The total number of premature deaths in the United States each year due to smoking is over 400,000, equalling about 20% of all deaths (Ray 279). In 1992, there were 54 million U.S. smokers, while 3,000 U.S. teenagers start to smoke each day (Pinger 222, 215). Smokers can also expect to live from seven to eighteen years less than nonsmokers (Koch).

Nicotine works physiologically in the body by binding to acetylcholine receptors and affecting the transmission of nerve signals by mimicking its behavior (Pinger 219). Nicotine binds to receptors at the synapses and blocks the nerve signals between neurons and muscle cells (Pinger 219). This process produces feelings of mild stimulation and increased energy (Taylor).

Nicotine works at the cholinergic synapses at the neural level (Fletcher). Nicotine binds to the nicotinic receptors, which first excites and then blocks the cholinergic receptors (Fletcher). This effect involves the antagonism of acetylcholine at the neuromuscular junctions, which causes reduced muscle tone and muscle relaxation (Fletcher). Acetylcholine is a neurotransmitter that is involved in learning and memory, sleep, and arousal (Taylor). Nicotine also causes the release of epinephrine, which could cause an increase in respiratory rate, heart rate, blood pressure, and coronary blood flow (Pinger 220). Constriction of blood vessels and a loss of appetite sometimes occurs (Pinger 220).

The addiction rate for nicotine use is also high (Taylor). In 1989, the Surgeon General finally stated that tobacco use is addicting (Pinger 222). People who quit smoking often experience strong cravings that are similar to physiological withdrawal symptoms (Goode 262). These symptoms might include irritability, anxiety, headaches, fatigue, energy loss, insomnia, dizziness, and sweating (Goode 262). There is also "no other substance known that is used with such remarkable frequency" (Goode 262).

"The relapse rate of smokers who quit and then return to cigarettes is almost identical to the relapse rate of heroin addicts who kick their habit and become readdicted"

(Goode 262). In a summary of studies it was found that after four years, 80% of smokers who had quit their habit were smoking again (Goode 262).

Many problems in our society have been caused by smoking, and one very important problem is the occurrence of deaths caused by second-hand smoke. In 1993, the Environmental Protection Agency reported that over 3,000 lung cancer deaths each year are a result of second-hand smoke in nonsmoking individuals (Pinger 227). Whereas many other drugs only harm the consumer, smoking can kill friends and relatives who are simply breathing the air around the smoking individual.

There are currently many treatment programs available for those who want to quit their tobacco use. One such treatment program is the use of nicorette gum or the nicotine patch; both are used to increase the nicotine to a significant level to discourage use (Pinger 231). Studies performed in both the United States and in England show a long term success rate of 40% or more when using the gum or patch along with other smoking cessation therapies (Pinger 231).

Other programs include educational programs, behavior modification, aversive conditioning, hypnosis, or acupuncture (Pinger 230). The "cold turkey" approach can also be successful if the individual is highly motivated to quit (Pinger 230).

One reason it is so difficult to quit smoking is the lack of desire on the part of the smoker (Pinger 229). Our 70-80% failure rate is believed to exist because the motivation to discontinue tobacco use is difficult to achieve; and once it is achieved, it is extremely difficult to maintain (Pinger 229). The recommended way to quit smoking is thought to be possible by (1) replacing high tar and high nicotine brands with low tar and nicotine, and (2) by reducing the consumption gradually (Pinger 231).

## CHAPTER III

### DRUG TREATMENT

There are various treatment programs currently available for individuals experiencing addiction to various drugs. Two million people each year will enter some type of outpatient or residential treatment program (Koch). There are currently three stages involved in drug treatment in our country: detoxification, active treatment, and aftercare (Ray 49).

Detoxification is a therapeutically supervised withdrawal phase for the patient to achieve total abstinence from the drug (Koch). Detoxification takes only 5-7 days, but if a patient only completes this step, the odds on relapsing equals 95% (Koch).

The active treatment stage includes specific programs such as residential treatment, chemical dependency centers, and outpatient programs (Ray 50-53). Residential and chemical dependency programs are long-lasting, 24 hour a day supervised treatments intended to change an addict's lifestyle as well as enable the addicted individual to experience remission from the addiction (Vallance 52-3). These programs often have limited space, however, and are more expensive than some of the alternatives (Koch).

The most popular treatment program remains the outpatient type because of its low costs and increased availability (Ray 53). The success rate of outpatient

programs is lower than that of the-residential programs, but both can be effective (Vallance 53).

The aftercare stage of treatment is often accomplished through self-help type programs (Ray 50). These programs include Alcohol Anonymous, Cocaine Anonymous, Narcotics Anonymous, and Methadone Maintenance (Ray 50). Aftercare is necessary in order for an addict to avoid the substance each day and to learn to be a contributing individual to society (Ray 50).

Since treatment programs have been in effect for many years, it is now possible to know whether or not they are worth the costs. In 1990, a report found that methadone maintenance pays for itself because of the increased employment of patients and the decreases in crime (Ray 54). A 1994 report found that alcohol and other drug use declined by two fifths after treatment, and criminal activity decreased by two thirds (Ray 54). It can be said that treatment produces many benefits and that "something seems to be better than nothing" (Vallance 53-4).

Although these treatment programs have proven to be beneficial, there have been a few problems associated with their current arrangement. In 1992, it was estimated that more than 2.8 million addicts could benefit from drug treatment programs, but because of the lack of funds for these programs there are only about 1.7 million slots available (Goldstein 216). Some sources have even reported

that 5.5 million addicts are in need of treatment (Bender 18). It is also reported that 40 million Americans cannot afford outpatient drug treatment, and 60 million cannot afford the residential programs (Walker 57).

## CHAPTER IV

### POLICY REFORM

#### Medical Policy

Because of the alarming statistics, I believe that the first step in creating a better and more humane drug policy involves our treatment programs. In order to decrease the drug use in our country, the money spent on the "war on drugs" needs to be redirected to "make drug treatment programs available to all who need them" (Boaz 16). If our drug addicts have to live in fear of arrest and cannot afford one of the limited treatment slots, how can they be expected to abstain from using?

One way to improve our current treatment policies would be to "link drug treatments more closely with the criminal justice system" (Bender 57). "Addicts and alcoholics who are forced to abstain due to imprisonment are still addicts/alcoholics when they get out whose practice of their addiction has merely been interrupted" (Bender 67). In this case, our criminal justice system's policy of rehabilitation is failing to produce the desired effect, which is a recovered individual.

Experimental programs such as IMPACT in Chicago's Cook County Jail (Swartz 553) and RAPT at Downview Prison in the United Kingdom have implemented a system that concentrates on treating prisoners while they are serving time ("A shock to...", 54). The statistics for these two programs have

shown significant decreases in rearrest rates as well as reducing drug use and the crime activity associated with it (Swartz 554). One of the most important aspects of these programs is that they are providing treatment to individuals who otherwise would not have access. "Only 24% of surveyed jail inmates in the United States had ever participated in a drug treatment program" (Swartz 553-4).

### Decriminalization

The second step in creating a better drug policy involves the decriminalization of drugs, marijuana being the first, considering that "10 million Americans smoke pot every month" (Morris 114-120). There are currently ten states that have passed laws decriminalizing marijuana in our country, each showing no significant increase in use (Vallance 91). These states also show major declines in arrest rates, drops in law enforcement costs, and drops in incarcerations and the costs associated with them (Vallance 91).

In 1976, California joined the decriminalization of marijuana movement, making less than an ounce of marijuana a parking-ticket-type offense, and its use went up zero percent (Baum 5-6). "The state of California also saved more than \$950 million in police and prison costs," which could be better spent on education and treatment programs (Baum 5-6).

If the evidence at home is not convincing enough, we can examine the statistics of the Dutch policy on the marijuana subject. In the Netherlands since the decriminalizing/legalization of marijuana in the 1970s, consumption of the drug has actually declined significantly (Boaz 40-1). In contrast, in our country over 7% of the population abuses marijuana, whereas only 4% abuse the substance in Holland (Morris 114). Also, in 1985 it was reported that 5.5% of American high school seniors smoked marijuana daily compared to the 0.5% in the Netherlands (Boaz 46). Physicians in India have recently urged their government to decriminalize marijuana, based on the Dutch policy and because of its possible medical uses (Mudur 384).

The Dutch policy of legalizing the soft drug marijuana has had an impressive effect on hard drug users as well. Since the changing of the laws in the 1970s, the number of young hard drug addicts equals 2% compared with the rate of 14% a decade ago ("A marijuana mecca...", 15). "Holland also has 1.6 hard drug addicts per 1000 inhabitants, compared with 2.5 in France, 3.0 in Italy, and 5.3 in Switzerland" (Morris 114-20). Also, because of their lower risk of arrest, treatment representatives in Holland have established contact with 70% of their drug users compared with 15% in the United States (Vallance 90). Based on these statistics, I think other countries, including ours, could

definitely benefit by implementing a similar system to that of the Dutch.

### Legalization

After billions of dollars have been saved through the decriminalization of drugs, some type of legalization needs to be established in order to rid our society of "the crime, corruption, and violence often associated with the illicit drug markets" (Stares 8). The term "legalization" is a broad label that could take place either under restrictions similar to alcohol or under strict or loose medical prescriptions or at government controlled clinics under medical supervision similar to methadone maintenance with full volunteerism (Vallance 98). I believe one of these methods should be tested in order to determine if positive results would occur.

Opponents to legalization believe that permitting drug use would lead to increased crime and drug-related deaths because of the possible increases in drug users and addicts (Walker 45). This could quite possibly occur, especially at first, but over time drug use would perhaps seem less appealing, as marijuana smoking has become in the Netherlands (Walker 45).

Proponents of legalization also believe that the law change would save money spent on law enforcement and courts, reduce prison and court overcrowding, decrease the number of overdoses, decrease the spread of infectious diseases, and

eliminate the profits of organized crime (Walker 44-5). It is also assumed that all types of crime would decrease because possession would be legal, traffickers would be unemployed and broke, and drugs would be cheaper (Boaz 28-9).

Legalization advocates also point to the fact that when there were no drug laws or regulations in the late 19th century, the percentage of users then was almost equivalent to today's percentages (Boaz 41,67). Another important aspect to understand is that three-fourths of drug users are white, middle class Americans who are either students or employees (Wenner et al. 54). Most of these individuals are not people who need to be behind bars at our expense.

Also, the myth that illegal drug use leads to thousands and thousands of premature deaths each year is misleading. A 1992 DAWN system reported that only 15,000 deaths were caused by illicit drugs compared with the 500,000 deaths attributed to legal drugs (Ray 29). Also, keep in mind that if drugs were legalized, "it would take a 1,275% increase in drug use to produce as many deaths as drug prohibition is already causing" (Boaz 62). It is also known that 20% of the heavy drinkers/drug users consume 80% of all the alcohol and drugs available (Bender 68).

Whether you are for or against legalization, there are going to be trade-offs that result. Each American needs to ask whether "society should risk an unknown increase in drug

abuse and addiction to eliminate the harms of drug prohibition" (Walker 55). In my opinion, the current laws are failing to solve the problem; but if a new policy were implemented, a better outcome could possibly unfold.

### Conclusion

The most important reason our country is in need of a new drug policy is that the current one is blinded by the laws' criminal definition of drug use. One example of this blindness is the failure of many states to organize a needle exchange program in order to decrease the spread of AIDS and other infectious diseases. "The United States is essentially alone among advanced industrialized nations in not making access to sterile syringes a central component of its HIV prevention efforts" (Wenner et al. 548). Whereas in our country 28% of AIDS patients are intravenous(IV) drug users (Drug... 114) and over 50% are HIV carriers, only 12% in Holland have even tested positive for HIV (Vallance 90). A country that neglects to decrease the spread of a deadly disease when there are ways in which this can be accomplished is not improving one of the most important issues that affects each and every one of us.

It should also come as no surprise that "the states with the lowest HIV rates for IV drug users" are those with legal purchase or possession of needles (Goldstein 234). The most evidence for this fact is in New York City, where

two-thirds of IV drug users are HIV positive because of the city's lack of a needle exchange program (Goldstein 233-4). New York, and the rest of our country, could model themselves after cities such as New Haven, CT, or Albuquerque, NM, or even Glasgow, Scotland, where needle exchange programs have resulted in low percentages of HIV carriers (Goldstein 233-4).

Another important factor that needs to be taken into consideration is the unrealistic goal of the War on Drugs and its failure to rid our streets of dangerous criminals. In 1988, Congress added a provision to a law that stated its goal was to "create a drug-free society by 1995," which has not occurred (Walker 8). Also, because our prisons are overcrowding, dangerous inmates are receiving early release in order to make room for drug offenders (Vallance 98).

I believe the heart of America's drug problems rests in its' understanding of drug use and drug addiction, and many of the answers lie with a simple alteration of the present definition. Our laws currently see drug use as a criminal activity that can be cured by prisons, courts, and fines. Unfortunately, President Clinton's recent drug control budget supports this outdated policy and will cost the United States \$16 billion in 1997 (Wenner et al. 54). We now know that drug abuse can be cured if it is treated as a health concern problem through the medical field. It is time for our laws to reflect this newly found knowledge and

end a war that is "cruel, wrong, and unwinnable" (Wenner et al. 54).

## BIBLIOGRAPHY

"A Marijuana Mecca..." US News & World Report 120.15 (Apr 15, 1996): 15.

"A Shock to the System." Economist 340 (Jul 13, 1996): 54.

Baum, Dan. "Marijuana." Nation 263.18 (1996): 5-6.

Baum, Dan. Smoke & Mirrors. Boston: Little, Brown, & Co., 1996.

Bender, David (ed). Drug Abuse. San Diego: Greenhaven Press, Inc., 1994.

Benjamin, Daniel K. and Miller, Roger L. Undoing Drugs. USA: Basic Books, 1991.

Boaz, David (ed). The Crisis in Drug Prohibition. Washington D.C.: Cato Institute, 1990.

Buckley Jr., William F. "Dole on Drugs." National Review 48.18 (Sep 30, 1996): 75.

Drug Abuse and Drug Abuse Research. Rockville, MD: U.S. Dept. of Health, 1991.

Fletcher, Donna E. "Drugs, Alcohol, and Behavior Class Lectures." Texas Tech University. Spring Semester, 1997.

Goldstein, Avram. Addiction. New York: W.H. Freeman & Co., 1994.

Goode, Erich. Drugs in American Society. New York: McGraw-Hill Inc., 1993.

Koch, Jerry. "Drugs, Alcohol, and Society Class Lectures." Texas Tech University. Spring Semester, 1996.

"Marijuana As Medicine." (February 4, 1997). [Online].

Morris, Richard C. "Just Say Maybe." Forbes 157.12 (Jun 17, 1996): 114-120.

Mudur, Ganapati. "Doctors Call for Law Change..." British Medical Journal 313 (1996): 384.

- ✱ Pinger, Robert R. Issues For Today Drugs. St. Louis: Mosby-Year Book Inc., 1995.
- ✱ Ray, Oakley. Drugs, Society, and Human Behavior. St. Louis: Mosby-Year Book Inc., 1996.
- Swartz, James A. "The impact of IMPACT." Crime & Delinquency 42.4 (Oct 1996): 553-573.
- Stares, Paul B. "Drug Legalization..." Current 383(1996): 8-11.
- Taylor, Curtis. "Physiological Psychology Class Lectures." Texas Tech University. Fall Semester, 1996.
- ✱ Traver, Harold H. Drugs, Law, and The State. London: Transactive Publishing, 1992.
- ✱ Vallance, Theodore R. Prohibition's Second Failure. Westport, CT: Praeger Publishers, 1993.
- Walker, William (ed.). Drug Control Policy. University Park, Penn.: Pennsylvania State Univ. Press, 1992.
- Wenner, Jann S. and Nadelmann, Ethan A. "Clinton's War On Drugs." Rolling Stone 758 (Apr 17, 1997): 54.