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PATTERNS OF ILLICIT DRUG USE AMONG AMERICAN HIGH SCHOOL YOUTH: AN EXAMINATION FOR THE YEARS 1976 AND 1986

by

Dennis Rosado Malaret

A Thesis Submitted to the Faculty of The Graduate College in partial fulfillment of the requirements for the Degree of Master of Arts Department of Sociology

Western Michigan University Kalamazoo, Michigan August 1991
PATTERNS OF ILLICIT DRUG USE AMONG AMERICAN HIGH SCHOOL YOUTH: AN EXAMINATION FOR THE YEARS 1976 AND 1986

Dennis Rosado Malaret, M.A.
Western Michigan University, 1991

Previous studies have noted the importance of structural and demographic variables for the study of drug use among high school students. The present study focuses on the pattern and extent of legal and illegal drug use by high school seniors, by variables such as gender, race, religion, and academic achievement, among others.

The data used for this study were taken from Monitoring the Future (Bachman, O'Malley, & Johnston, 1980, 1987) for 1976 and 1986. Each data collection phase included a sample of over 15,000 students from approximately 125 to 135 public and private high schools, selected to provide an accurate cross section of high school seniors throughout the contiguous United States.

The degree to which high school seniors were involved with drug use was related to the student's level of social bonds, level of education of parents, gender, and race. Cross tabulations were utilized in the analysis of data. The findings in this study tend to support Hirschi's (1969) social control theory.
I would like to express my sincere appreciation to the many people involved in the preparation of this study. Particularly, I would like to acknowledge and express my thanks to my committee members, Dr. Lewis Walker, Dr. Subhash Sonnad, and Dr. David Chaplin, of the Department of Sociology, whose knowledge, advice, guidance, effort, and especially patience have made this endeavor possible.

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Finally, my deepest gratitude and appreciation are extended to my mother, back home in Puerto Rico, for everything she has done for me that has led me to where I am today.

Dennis Rosado Malaret
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CHAPTER I

INTRODUCTION

The problem of illicit drug use, and its abuse, among America's youth is one of great concern of parents, politicians, criminologists, and other social scientists. The youngsters' demands for and choice of drugs, and their involvement in other types of law violation have become very worrisome issues for society as a whole. For almost three decades, there has been an upsurge in youth drug participation and other forms of law violation. This increase of drug use and abuse has been associated with "the great American drug revolution of the 1960's" (Beschner & Friedman, 1986, p. 25).

The contributions made by criminologists and other social scientists have been substantial in helping to assess the extent of the problem, its etiologies, and in the development of prevention and treatment strategies. Unfortunately the problems associated with survey statistics, used in measuring the nature and extent of high school students' involvement with drugs, still prevail. Consequently, it is difficult to understand clearly what leads high school youth to the use of drugs and the
extent to which young people are compulsive drug users. However, it is estimated that four to five percent of our young population between 15 to 19 years of age, depending on the geographic area of the United States, use illicit drugs regularly (Trebach, 1987).

Regarding juvenile drug use, a basic difficulty lies in measuring and identifying the root causes of this phenomenon. Previous researchers have focused on the joint relationship of the structure of the family, ethnicity, social class, peer groups, etc., in an attempt to understand the youth's involvement with drug abuse. Additionally, the rate or frequency of involvement in drug use often is attributable to particular social categories, specific geographical areas, or even to certain socio-economic sectors (SES). However, research evidence has shown that youth drug use, drug sales and its abuse, are not restricted solely to a unique factor or to any particular subgroup in our society.

In the last two decades, the U.S. has spent millions of dollars fighting drug use and its abuse through law enforcement, treatment, and research. These initiatives, as assessed by our federal agencies, have produced rather mixed results (Goode, 1989, pp. 26-35; Trebach, 1987). In fact, the numbers of high school drug users and associated misdemeanors continue to rise, especially in
suburbs and rural areas, which previously had relatively few incidents of drug use.

In spite of an increased awareness, the nature and extent of illicit drug use among the younger population remains unclear since there are no detailed national statistics on the actual incidence of high school drug users. Current statistical research reflects only the cases that have been reported and these are likely to represent only a portion of all the incidents that have actually occurred.

Overall, researchers have stated that the incidence of juvenile drug involvement is higher than it has been revealed in previous published statistics. Estimates, for example, show that the extent of the problem of drug use among high school youth is disproportionately greater among nonwhite youth than their white counterparts. The numbers, of course, vary depending upon the method and the sources from which the data have been obtained. Therefore, in order to determine what influences most white and nonwhite youth's illicit drug use, and other types of misdemeanors, a comparative, empirical examination is indispensable. More specifically, to understand the patterns of high school students' drug involvement, an evaluation of demographic, background and social-structural variables such as personality variables about self (including self-esteem), educational level of
parents, religion, race, the importance placed on various social institutions, such as religion and school, is necessary.

Monitoring the Future (Bachman, O'Malley, & Johnston, 1980, 1987), an annual data collection source, has made it possible to examine, using a major theoretical perspective, the relationship of the dependent variable, drug use, and independent variables such as religion, school, beliefs, values and social attitudes.

Overview

Monitoring the Future, data source, consists of a set of data that have already been collected. It is one of the most important sources of self-reported data collected from a national survey of juvenile misbehavior carried out annually by researchers at the University of Michigan, Ann Arbor. The 1976 and 1986 data used in this study each involve a sample of over 15,000 senior high school students, who were attending either private or public schools.

The objective of this study is to develop hypotheses, conclusions, and recommendations regarding the extent to which high school seniors use drugs and engage in other types of illegal activities (such as property damage, aggression, stealing, among others). Also, the extent to which these behaviors are influenced by
religious and school attachment, social and religious values, attitudes about the self, background and social-structural variables will be studied.

Another objective of this thesis is to determine the patterns of variation of drug use among senior high school students over a ten-year span, 1976 and 1986, to identify factors that encourage high school seniors to use or abuse drugs, to examine some factors associated with this involvement, and to suggest patterns that may result from their collective decision toward drug use. These objectives are addressed more fully in the chapters that follow.

Chapter II will provide a research and conceptual framework that includes tracing the development over time that has led to the dilemma of drug use or abuse among our high school population. It also will present information about different types of mind altering drugs, it will define terms such as "drug abuse," "illicit drugs," and some of the most common illicit drugs used by juveniles. Statistically, it will show the nature and extent of drug involvement by our high school teens. Finally, this chapter will present information on white (Anglo) and non-white (black, Hispanic and others) drug use and provide facts about the relationship between selected demographic, social and structural variables and drug use. Finally, theories which try to explain the
relationship between demographic, social and structural variables and drug use and different forms of illegal acts will be presented.

Chapter III will describe the sample and methods used in the study. Chapter IV will present some limitations and the findings obtained from an analysis of data used in this study. Chapter V summarizes, discusses, and concludes the findings of the study. This chapter will also present and discuss some recommendations for future analyses.

General Statement of the Problem

The degree of involvement of high school seniors in drug use has raised a great deal of concern throughout the country. The appearance of "addiction," "psychosis," "alienation," and "rebellion" among our youth has generated dramatic reactions. Adolescents, in many cases, are informed of the consequences and repercussions of drug use—not only to themselves, but also to society as a whole.

The federal government spends huge sums of money; legislatures enact laws and create control agencies; therapists develop treatment and prevention programs; parents worry about their children; and social scientists conduct research. While there is a large number of research works on the extent of juvenile drug involvement
and/or its abuse, primarily outside the school setting, there are few studies that deal with trends of illicit drug use among high school students.

This study takes as its central task an investigation of the nature and extent of drug use among high school seniors. Specifically, the study will examine the role that demographic and social variables, such as race, gender, religious importance and attendance, father's and mother's educational background, among others, play on the high school senior drug involvement.

In essence, this study will compare and contrast high school seniors at two points in time, 1976 and 1986, in order to determine if there are any differences in the patterns of drug use; also, it will be seen if there are any differences in the social and demographic background of those high school seniors who are involved in drug use and other forms of deviancy. For instance: Has the pattern of drug use changed or remained the same from 1976 to 1986? If so, what is the extent and nature of that change? Do non-white youth vis-a-vis white youth differ in their pattern of drug use and other forms of deviancy? Are females less frequently involved in drug use and other forms of deviancy when compared to their male counterparts?

Additionally, this study will also use the empirical data to assess certain theoretical tenets of a popular
delinquency theory. In this connection, Hirschi's (1969) social control theory will be examined. Briefly, Hirschi's theory contends that social bonding is a strong predictor of whether or not an individual will engage in drug use and/or other delinquent acts. Although there are other contemporary delinquency theories, Hirschi's bonding theory will be used in this study because (a) it is well known; (b) it has been empirically tested in various social settings, e.g., U.S., Canada, and Jordan; and (c) it will be useful in explaining the findings in the current study. A more detailed discussion of this theory and its relevancy will be presented in Chapter II.

The key issues or questions this study will attempt to investigate are, among others: (a) Is there a relationship between race and drug use among high school seniors? (b) Is there a relationship between periodic use of drugs and the students' academic performance? (c) Is there a relationship between religious commitment and drug involvement? and (d) Is there a relationship between the frequency of drug use and other types of delinquency committed?

In addition, the following is a set of research questions this study will attempt to answer.

1. Is there a relationship between high school seniors' attachment to religious beliefs and their likelihood to use drugs?
2. Is there a relationship between high school seniors' attachment to school (grades and attendance) and their likelihood to use drugs?

3. To what extent do the race and gender factors determine whether a high school senior will use drugs, and frequency of drug use?

4. What part does self-image play in influencing high school seniors to use drugs?

5. Is there a relationship between the amount of time spent in out-of-school activities and time spent with friends and drug use?

Specific Hypotheses

Taking into consideration the variables used in the larger study, from both 1976 and 1986, this study will focus on the following general hypotheses as they relate to high school seniors:

Hypothesis 1: There is no significant difference between races (white and non-white) and drug use.

Hypothesis 2: There is no significant difference between gender and drug use.

Hypothesis 3: There is no significant relationship between gender and race, and drug use for 1976 and 1986.

Hypothesis 4: There is no significant relationship between the type of delinquent behavior of students and drug use.
The following set of hypotheses is associated directly with the testing of specific aspects of Hirschi's (1969) social control theory. In this connection, we hypothesized that:

**Hypothesis 5:** There is no significant relationship between parents' levels of education and students' drug use.

**Hypothesis 6:** There is no significant relationship between academic achievement and students' drug use.

**Hypothesis 7:** There is no significant relationship between the importance placed on religion and students' academic achievement and drug use.

**Hypothesis 8:** There is no significant relationship between the level of self-esteem and student involvement in drug use.

**Hypothesis 9:** There is no significant relationship between the amount of time spent by students in extracurricular activities and drug use.

**Hypothesis 10:** There is no significant relationship between attachment to social institutions such as school, church, work and family, and drug use.

**Hypothesis 11:** There is no significant relationship between the frequency of church attendance and drug use.

While it is true that adolescents are the ones who choose which drugs to try, the patterns of life they will settle on, and who experience the effects of drug use,
there also exist structural components that lead youth toward the use of drugs. Thus, one of the goals of this study is to examine the ways in which drug use is a part of the high school seniors' social world, the uses, meanings, and repercussions of drug use as reported by high school seniors themselves.
CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

This chapter consists of three parts. First, "The Law and Drugs" addresses the legal history of drugs in the United States. The second section gives a brief description of some of the most appropriate terms concerning the use/abuse of legal/illegal mind altering drugs in our society. Finally, this chapter will discuss social control theory, a major approach in explaining juvenile drug use and other kinds of delinquent behavior.

The Law and Drugs

In the United States, different types of drugs that may produce emotional dependence, characterized by the need to maintain a good mood, and/or physical dependence, in turn characterized by a need of the user's body to ingest the drug in greater amounts, can be found either legally or illegally. Some of the permissive drugs that can only be obtained with a prescription from a doctor are: amphetamines, barbiturates, morphine, and tranquilizers. Other drugs, the possession of which is not
permissive, are marihuana or hashish, cocaine, heroin, and hallucinogens. There also is a third category of drugs that are permissive and a prescription is not required. Some of these drugs include alcohol and cigarettes ("Drug Abuse," 1985).

Although there has been a number of governmental attempts to regulate and control the illicit use of the drugs mentioned above, the problem persists. Since the start of the century and particularly during the 1960s, various kinds of treatment programs, including those of law enforcement agencies, have been initiated to deal with the problem of illicit drug use by the country's juveniles. The following section discusses the legislation and enforcement agencies that have been established in order to restrict drug use and drug dealing.

The Harrison Narcotic Act

The 1915 Harrison Narcotic Act constitutes one of the nation's first basic attempts to legally regulate narcotics (Abel, 1984). Specifically, it was enacted to control the importation, production, preparation, purchase, sale, and distribution of narcotics and their derivates. Persons authorized to handle or manufacture those drugs are required to register, pay a fee, and keep records of narcotics and their possession (p. 75).
Prior to this act, opium and its derivates could be purchased at drug stores without prescriptions. This mechanism of regulation is still enforced, and was expanded under the Supreme Court decision to prohibit the possession of smuggled drugs by an addict. Further, the court made it illegal for a doctor to prescribe narcotics to an addict to relieve or keep him/her comfortable over a period of time (Lingeman, 1969, pp. 91-92).

Later, the Supreme Court made some other modifications (1925) to the amendment, implying that a physician should be the only one who can decide what drug, quantity, and number of dosages can be prescribed to the patient. Hence, the addict caught with such untaxed drugs in his possession is labeled as a criminal and put under supervision as an adjunct of his/her incarceration (Lingeman, 1969, p. 92).

Boggs Amendment of 1951 and Narcotic Drug Control Act of 1956

The Boggs Amendment of 1951 (Drug abuse education, 1970) and the Narcotic Drug Control Act of 1956 were two subsequent pieces of narcotic legislation (Abel, 1984). They resulted from intensive studies commissioned by the Senate and House Committees that investigated the narcotic problem in the United States in the wake of the post-war increase in juvenile addiction. Both committees
recommended the imposition of Harrison Act by establishing severe penalties as the strongest known deterrent to narcotic traffic and narcotic addiction (Abel, 1984, p. 21). For example, one of its severe stipulations warns that, those over 18 who are caught selling heroin to another individual under 18 years old will be sentenced from 10 to 20 years to life in prison, with an optional fine up to $20,000. No probation, suspension of sentence or parole is allowed (Drug abuse education, 1970, p. 108). The individual may even be sentenced to death if the jury recommends it (Abel, 1984, p. 112).

Federal Drug Abuse Control Amendment of 1965

The Drug Abuse Amendments of the Federal Food, Drug and Cosmetic Act, passed in 1965 and effective as of February 1, 1966, are the result of increasing national concern over the widespread abuse of three groups of dangerous drugs, amphetamines, barbiturates, and hallucinogens which, by containing depressants or stimulants, were placed under federal control (Drug abuse education, 1969, p. 102). The purpose of the law was to gain better control of illegal manufacturing and sales of these three categories of drugs, and to control other drugs found as potential for abuse because of their depressant or hallucinogenic effects, excluding narcotic drugs and
marihuana, which currently are regulated by the Harrison Narcotics Act (Abel, 1984, p. 53).

**Federal Bureau of Narcotics**

The Federal Bureau of Narcotics, an agency within the Treasury Department, is responsible for administering and enforcing those sections of the International Revenue Code taxing and regulating narcotic drugs and marihuana. This agency investigates, detects, and prevents violations of laws prohibiting unauthorized possession, sale, or transfer of opium, opium derivatives, synthetic opiates, cocaine, and marihuana. This agency (FBN) was initially responsible for the enforcement of the Harrison Narcotics Act, discussed earlier (see pp. 13-14 of the present chapter). This act also regulates and sets quotas for the import of narcotic drugs and manufactured narcotics, and sets the amount of such drugs that can be manufactured legally in the United States for use in medicine, scientific research, and other purposes authorized by law (Lingeman, 1969, pp. 31-32).

**Bureau of Drug Abuse Control**

The Bureau of Drug Abuse Control, another enforcement agency within the former Department of Health, Education, and Welfare, was charged with controlling the illegal traffic of certain stimulants, depressants, and
hallucinogenics. The bureau was created by the Drug Abuse Control Amendment of 1965 (Lingeman, 1969, p. 31), which brought these types of drugs under federal regulation.

The main duties carried out by this enforcement agency are the surveillance of drug imports, the surveillance of retail druggists to prevent illegal dispensing of drugs without a prescription and, requiring inventory records by drug manufacturers, the prevention of diversion of drugs into illicit channels. The bureau also is in charge of investigating the illicit traffic in prescribed drugs. Additionally, it offers to the public educational programs aimed at emphasizing the social, physiological, and psychological aspects of drugs and warns of their potential dangers (Lingeman, 1969, p. 31).

In conclusion, it is worth mentioning that the Bureau of Drug Abuse Control, as well as many other agencies, was created to reduce the trade in amphetamine and barbiturate drugs, narcotics and several other tranquilizers. Although these drugs are legitimately manufactured for medical and scientific purposes, they have been diverted into a rapidly growing and, seemingly, uncontrollable illicit traffic. They are also illegitimately manufactured in clandestine laboratories (e.g., Hallucinogens), or smuggled in from abroad (Lingeman, 1969, pp. 67-69).
Drugs

The first step in understanding drugs is to know what the word "drug" and the term "drug abuse" mean. It is also very valuable to identify what illicit (prohibited) and legitimate (permissive) drugs are, and what role they play for those who make use of them.

Drug Abuse and Drug Addiction

Guggenheimer, Bartlett, and Klebl (1982) define "drug" as any chemical substance used in medicine in the treatment of disease or abused by drug dependent persons. They define "drug abuse" as "the non-therapeutic use of any drug or substance to an extent detrimental to the individual. Drug abuse represents the outcome of an interaction between the individual, the drug and his social and physical environment" (Section 1-18).

In Colliers's Encyclopedia ("Drug Abuse," 1984) drug abuse appears as "the habitual self-administration of narcotics, sedatives, stimulants, hallucinogens, and similar substances to a point where harm results to the individual and the society" (p. 394).

For the purpose of this thesis, drug abuse is defined as the misuse of legitimate (permissive) drugs1 and

---

1 The term abuse of legitimate or permissive drugs refers to the consumption or nontherapeutic use of any prescribed drugs by an individual.
illicit (prohibited) drugs such as alcohol, cigarettes, heroin, cannabis, cocaine, LSD and PCP; and various other prescribed drugs such as barbiturates, tranquilizers--including Librium, Valium, Miltoun, Equanils, Mepromabate, Serox, Aterox, Tranxene, and Vistoril--amphtamines, morphine, and methamphetamine, for purposes which are not therapeuic.

Guggenheimer et al. (1982), in their dictionary, define drug addiction as:

physical as well as psychological need for a drug and drugs. The user feels the need as a compulsion and should he stop taking the drug he will suffer from withdrawal illness (Sec. 1-19).

Additionally, Guggenheimer et al. (1982) point out that drug addiction is characterized by a strong desire or compulsion to continue taking the drug and to obtain it by any means; and addiction is also characterized by a tendency to increase the dose which represents a psychological and physical dependency on the effect of the drug (Sec. 1-18).

A comparable definition of drug addiction was also given by Lingeman (1969), who pointed out that:

Addiction is also characterized by a high rate of relapse after the addict has been withdrawn from the substance. Although, addiction refers to such compulsive, excessive use of narcotic drugs, the term properly encompasses any substance so used (p. 3).
Types of Drugs

The first step in understanding the problem of drug use and/or abuse is to know what drugs are, their classification, and to be familiarized with the most common ways in which they are objects of abuse. Drugs can be categorized by their form (liquid, solid, and gas), the way they are taken (swallowed, inhaled, and injected), by general composition or by the general effect they have on the body. However, for the purpose of this thesis, drug use will be classified in two ways. First, legal drugs that can be acquired through legitimate means for therapeutic purposes; and, second, prohibited drugs that are obtained by illegitimate means for nontherapeutic purposes. These are drugs that are related to either hallucinations, aggressive behavior or loss of inhibition. Additionally, this section discusses the methods by which drugs are taken, the purpose, their primary effects and how hazardous they can be.

Stimulants

This category of drugs includes amphetamines, cocaine, crack, caffeine and tobacco. The immediate subjective effect of the stimulants is euphoria and a sense of confidence and well-being. Accordingly, cocaine and amphetamines are the two with the greatest immediate
sensual appeal. Stimulants speed up signals passing through the nervous system; they activate organs and functions of the body, heighten arousal, increase overall behavioral activity, and suppress fatigue.

In low doses, stimulants can heighten the body's sensitivity and improve mental and physical performance. At high doses, however, behavior becomes unfocused, supersensitivity translates easily into paranoia, and mental and intellectual performance become uncontrol­lable, ineffective, often compulsively repetitive (Goode, 1989, p. 188).

**Amphetamines**

Amphetamines are sometimes called: uppers, ups, speed, bennies, dexies, pep pills, diet pills (Goode, 1989). The periodic use of amphetamines can result in delusions, hallucinations, paranoia, and psychoses. In addition, amphetamines have the capacity to cause abnormalities in the person's blood pressure, increased muscle tension, abnormal heart symptoms, or severe heart attacks. Although amphetamines are legally sold with a prescription, they are often used illegally for euphoric effects ("Drug Abuse," 1981).
Cocaine and Crack

Cocaine (slang names: snow, speed-balls) is a potentially highly addictive drug, extracted from the leaves of the coca bush. It is a white, odorless, and fluffy powder. This type of drug pharmacologically is classified as a stimulant but it can be used as a local anesthetic (Goode, 1989, pp. 194-196).

It is taken by abusers orally or intravenously, alone or combined with heroin. It is said that oral use of cocaine relieves hunger and fatigue, and produces some degree of exhilaration. Intravenous use will produce marked psychotoxic effects, hallucinations with paranoid tendencies, and convulsive movements. In larger doses, cocaine may produce convulsions, excitement, and in some cases it may cause death.

Moreover, those who inject cocaine often mix it with heroin or inject heroin frequently in order to dampen the hyperexcitability that cocaine produces. Cocaine acts upon the central nervous system to produce a euphoric excitement and hallucinatory experience. Although the body does not develop significant tolerance to cocaine, psychic dependence on cocaine does occur (Goode, 1989, p. 197). The user compulsively seeks the extreme mood elevation and grandiose feeling of heightened physical and mental prowess induced by this drug. Chronic use of
this drug, however, will produce an increasingly unpleasant hyperstimulation, accompanied by digestive disorders, nausea, loss of appetite, chronic insomnia, convulsions, and paranoid delusions accompanied by auditory and visual hallucinations.

At the beginning of 1985, crack, a potent crystalline form of cocaine, was practically an unknown—and unused—drug in the United States. By late 1985, however, the drug was beginning to be used extensively in urban areas.

Like "freebase" cocaine, crack is a crystalline form of cocaine. Like "freebase," crack is smoked. Moreover, the onset of crack's impact is even faster than cocaine, a matter of six to eight seconds, and the intense orgasm-like high or rush lasts for perhaps a few minutes, followed by a kind of afterglow that lasts ten to twenty minutes. The euphoria achieved in this rush is extreme, and it motivates the user to want to use the drug over and over again (Goode, 1989, pp. 202-205).

**Barbiturates**

Barbiturates (slang names: Red Bird, Yellow Jackets, Blue Heavens, and goof balls) are sometimes called: downs, downers, reds, blues, rainbows (Goode, 1989). They are hypnotic, sedatives derived from barbituric acid to depress the central nervous system.
Presently over 2,500 variants have been synthesized. Actually only about 15 of these are used for medical purposes. These drugs are medically prescribed to induce sleep or to provide a calming effect.

A small amount of barbiturates makes the user relaxed, sociable, and good humored. However, when taken in heavy doses, their selective action is lost, while their depressant actions spread to all parts of the central nervous system and the spinal cord, causing drowsiness, and makes him/her sluggish, or violent (Lingeman, 1969, p. 15).

According to Lingeman (1969), barbiturates are another means of suicide. Many deaths occur every year from intentional and unintentional overdose. Accordingly, it is estimated that over 4,000 people a year die in the United States because of these drugs.

Narcotics

Opium, morphine and heroin are the main types of narcotics. According to Abel (1984):

Around the turn of the century, narcotic came to be used as a synonym for illegal drugs, primarily the opiates. This was later expanded to include cocaine, marijuana, mescaline, and chloral hydrate. The term has also been used as a synonym for drugs that cause dependence and are associated with criminal activity (p. 111).
Narcotics are widely used in medicine as analgesics that relieve pain and induce sleep. They will also produce physical analgesia, euphoria, drowsiness, mental and physical impairment, including unconsciousness, poor contraction and attention, reduced hunger and sex drives, and in some, apathy. They also are prone to produce physical dependence.

**Opium**

Opium (slang names: M dreamer, white stuff) is extracted from ripe seed pods of the poppy plant. Morphine is derived from opium (morphine sulfate), and heroin is diacetylmorphine, an alkaloid derived from morphine. In most cases, opium is used illegally as a mood changer.

Abusive use is mostly acquired by intravenous injections. Among the immediate effects are euphoria and drowsiness. The dependence liability of drugs of this type is very high *(Drug abuse education, 1969, p. 161)*.

**Heroin**

Heroin (slang names: snow, stuff, H or horse, junk) is classified as one of the prohibited drugs in the United States. Heroin, long the preferred choice among opiate addicts, has the same effects as morphine in all aspects, but it is shorter acting.
Hallucinogens

Hallucinogens (slang names: LSD-25, PCP, mescaline, acid) are a type of drug that produces hallucinations, exhilaration, or depression in the user. They also lead to serious mental changes, psychotic manifestations, or suicidal or homicidal tendencies (Drug Abuse Education, 1969). LSD-25 is derived from lysergic acid. Mescaline is a chemical taken from peyote cactus. Another form of this type, psilocybin, is synthesized from Mexican mushrooms. Other drugs, such as marihuana and alcohol, may also produce hallucinations but are not classified as hallucinogens because these substances do not usually produce the same effects to the same degree (Abel, 1984, p. 56).

In relation to other hallucinogens, LSD is considered 5,000 times as potent as mescaline and 200 times as potent as psilocybin. Additionally, it is said that one ounce of LSD will furnish about 300,000 individual doses on the illicit market. Some of the psychological effects produced by LSD are distortions of light, colors, images, perception of non-existent sounds, and changes in feelings of awareness of the self, and the loss of a sense of personal identity (detachment, dissonation, prolonged panic, paranoid reactions, sociopathic impulses, suicide attempts, uncontrolled aggression, attempt of homicide,
among others).

PCP also creates temporary psychosis which is similar to acute schizophrenia. Its effects will also lead to paranoia and have been linked to street violence. The chief hazard of PCP lies in illicit, unsupervised use in untoward circumstances that increases the risk of a psychotic break under the influence of the drug, or use by latently psychotic individuals (Lingeman, 1969, p. 132).

Marihuana and Hashish

Marihuana and hashish (slang names: cannabis, joints, sticks, reefers, weed, grass, pot, muggles, mooters, Indian hay, locoweed, mu, gigglesmoke, grillo, hakasky, Mary Jane, dubis, wacky tabacky) are a derivative of a plant called Cannabis Sativa L., commonly called Indian Hemp. The dried, chipped leaves are called marihuana, while the dark brown residue from the tops of the plant is called hashish.

Pharmacologically, marihuana is classified as a stimulant, depressant or hallucinogen. It is usually smoked as a cigarette (joint) or in pipes. The usual dose of marihuana varies, but most often it is 1 or 2 joints, and its effects last for about 4 hours.

Hashish is a preparation of cannabis. It can be taken orally, incorporated in food, sniffed in powder form, or mixed with honey for drinking. Small doses of
this drug produce a feeling of great perceptiveness and pleasure. However, a large dose may cause erratic behavior, loss of memory, distortion of time and spatial perceptions, and hilarity (Drug abuse education, 1969, p. 160). Other effects of this drug include: altered perceptions, difficulty in thinking and concentrating, speaking, and remembering. Accordingly, depersonalization, visual hallucinations and pseudo hallucinations can also be experienced when using this drug.

It was not until the mid-thirties, with reports of a "crime wave," that marihuana use among high school teens was viewed with any concern.

According to Lingeman (1969):

In 1937, guided by lurid publicity about marihuana-induced crimes and the testimony by the man then Commissioner of Narcotics, Harry Anslinger, that marihuana was criminogenic, Congress passed the Marihuana Tax Act modeled after the Harrison Narcotics Act. This assertion that marihuana use caused criminal activity later was dismissed, and in 1951, during the hearing on amendments to the United States's narcotics laws, Commissioner Anslinger testified that the real danger of marihuana was that its users inevitably proceeded to Heroin addiction (pp. 144).

Despite the efforts made by the Bureau of Narcotics in regulating and controlling marihuana use, apparently its use steadily increased, spreading among minority groups (particularly among blacks and Hispanics), musicians and to the middle-class sector. The highest increase of marihuana use among the young population in
colleges occurred during the 1960s; this use later spread into high schools (Lingeman, 1969, pp. 145-146).

Alcohol

Alcohol (ethyl alcohol, ethanol or grain alcohol) also known as ethanol or grain alcohol, is a colorless liquid that is the principal intoxicating substance found in wine, beer, and liquors. It is a drug that affects the central nervous system and it belongs in a class with barbiturates, minor tranquilizers, and general anesthetics, which are commonly classified as depressants. Its effect on the brain is rather biphasic; at quite low concentrations it can serve as an excitant or stimulant of some functions, but as the concentration increases, the effect is constantly more depressant, going to sedation, stupor, and coma. The excitement phase exhibits the well-known sign of exhilaration, loss of socially expected restraints, loquaciousness, unexpected changes of mood and occasionally uncontrolled emotional displays (Goode, 1989, pp. 111-112).

Concerning alcohol consumption, in determining what is considered a small, moderate, or heavy amount of alcohol consumed by a person, it varies from one expert to another, and, again, from one culture to another. In most Western societies, moderate alcohol consumers are considered those who drink an average of 7 to 8 g. per
day (Lingeman, 1969, p. 73), and a person who drinks up to 50 g. per day will be considered an alcoholic.

In conclusion, the physical and psychological effects that these types of drugs, previously mentioned, have on the individual vary depending on the quality and the quantity of the drug, amount of dosage used, and the frequency with which they are used. Also, the effects that drugs may have on a person vary when taken in combination with other categories of drugs and the physiological and mental characteristics of the individual are important considerations.

It is unfortunate that many of these drugs, if not most of them, seem to have particular attraction during adolescence. It is at a time in their lives that young people are most curious as to who they are and what they want to do with their lives ("Narcotics, drugs and other Harmful Substances," in Drug abuse education, 1969, p. 100). It is also a time that adolescents are often rebelling against their parents and other adults. Their focus is on having fun, exploring new things, while criticizing the "old ways." Most adolescents today have heard about the drugs mentioned above as a way to find oneself, and provide a solution to or escape from their problems.
Patterns of Drug Use in the United States

Since the start of the 20th century, American society has been encountering an enormous increase in the number of crimes and other social problems. Most of the time, the nature of the illicit drug-use problem in the U.S. society is identified as a problem of drug abuse, which has touched almost all sectors of the American population. However, the immense cost in this upsurge of drug use has been largely paid by our young population more than in any other sector of the American public.

It was not until the early 1960s that state authorities, researchers, and national polls revealed for the first time to the mass-media, the current alarming proportion of juveniles involved in drug use as well as other forms of criminal involvement. This period was characterized by an upsurge of youth's drug taking that was called "the great American drug revolution of the 1960s" (Beschner & Friedman, 1986, p. 25).

During this time billions of dollars were spent fighting drug abuse through law enforcement, treatment, control and correction agencies, as well as research. This period also constituted one more declared and unfruitful war against drugs (Musto, 1987). This war on drugs, at the beginning of its implementation, provided some positive results. However, by the late 1960s the
incidence of juvenile drug involvement escalated at alarming proportions.

Although we cannot rely on the numbers given by current national statistics, it is a fact that there is a drug problem among our high school youth. Consequently, this drug-abuse problem has the potential to aggravate other social problems. Among these other problems we find a high number of young people dropping out of school, larceny, theft, truancy, assault, teenage pregnancy, and vandalism/damage to property, and more.

A great proportion of our youth has been experimenting with illicit drugs since their early adolescence. The nature of this problem covers all groups of adolescents, particularly those who are in high school. It also can be found in the streets, in suburbs, or even in rural areas. Previously the suburbs and rural areas accounted for a relatively low share of this problem; nowadays, however, high school students' drug use constitutes one of the most challenging problems facing Americans regardless of their location.

The social cost of drug abuse can be extremely high for both the individual involved and for society as a whole. The cost manifests itself in alcohol/drug-related driving accidents, massive high school dropout rates, murder, gang conflicts, an elevated number of drug-
related deaths, suicides, homicides, organized crime, disease transmission (e.g., AIDS), and so forth. According to some studies, by 1962, an increase in drug use occurred among the young adult population between the ages of 18 and 25. Since 1962, the proportion of this group that tried marihuana has jumped from 4 percent to 68 percent. The number of people who have taken harder drugs—including cocaine, heroin and angel dust—has risen from 3% to 33% ("Kids and Narcotics," 1980, p. 72).

Estimates by a national survey of drug abuse revealed that from 1972 to 1977 there had been a significant increase in drug abuse, especially of marihuana, among those 12 to 17 years-of-age. Overall, marihuana, the most popular illegal drug in the United States, has been used by more than 60 million Americans, some 18 million of whom smoked it once or more during the last month (Krasnegor, 1979). Additionally, the proportion of those who have used a drug other than marihuana has increased from 35% in 1976 to 39% in 1980. According to Johnston, Bachman, and O'Malley (1986), this increase is due to the popularity of cocaine and prescribed stimulants such as amphetamines and other barbiturates (p. 134).

According to other estimates, since the mid-1970s there has been a slight decrease in the percentage of teenage drug-users. Two criminologists, Beschner and
Friedman (1986), assert that this trend can be attributed in great part to a decline in the number of juveniles in our population as a whole and not because our youth are dismissing the use and/or abuse of drugs (p. 33).

In 1978, national statistics indicated that by the twelfth grade, only about 10% of youths reported never having used any substance, and an estimated 90% of the youth had used alcoholic beverages near the time they were surveyed. It also was found that about 30% of them reported using cigarettes, about 50-60% reported using marihuana, and 20% reported using other substances or types of drugs such as hallucinogens, sedatives, stimulants, tranquilizers, and opiates, and 5% had used cocaine (Krasnegor, 1979, p. 21).

Similarly, a study conducted by the National Institute on Drug Abuse (Battjes & Pickens, 1988) in which about 8,814 people age 12 and up were surveyed, indicated that by 1987 drug use in the United States had dropped slightly since 1985. However, in examining hard drugs such as cocaine, heroin and others, it was found that in 1987, 292,000 people used cocaine at least daily during the previous year, compared with 246,000 in 1985, and the number for those who used it once a week or more also rose from 647,000 in 1985, to 862,000 in 1987.

Although national statistics, and various other studies, suggest a slight decrease in the number of young
people using illicit drugs, the fact remains that there is a significant increase in the number of high school students involved with drugs such as marihuana, cocaine, heroin, and barbiturates. Moreover, the extent of this social problem is still higher in the United States when compared with most industrialized nations (Comer, 1982, p. 100; Johnston et al., 1986, p. 310).

According to Bower (1985a), Johnston et al., in their national drug abuse survey released in 1985, found that about 16% of the class of 1984 had tried cocaine "at least once." Marihuana use, which marked a decline among teenagers since 1979, had remained at the same level it was in previous years (p. 38). Additionally, the researchers found that alcohol, marihuana, amphetamines, cocaine, and other substances were the most widely used illicit drugs for 1984. Additionally, stimulants--like nitrites, amphetamines, and hallucinogens--were greatly accepted among our high school population. The incidence of alcohol use remained at the same pattern as in previous years, but daily alcohol use among seniors increased slightly (Bower, 1985, p. 310).

The dimensions of the problem of drug abuse are also indicated by some statistics concerning the use of marihuana and cocaine by high school seniors. The rate of cocaine use by seniors rose from 4.9% in 1973 to 5.8% in 1984 to 6.7% in 1985. The estimates indicate that at
At least 17% of all seniors have tried cocaine. Among seniors the use of opiates, other than heroin, has been relatively stable, though annual prevalence rose from 5.2% in 1984 to 5.9% in 1985 (Hymes, 1986, p. 7).

Although tranquilizers had shown a decline among high school seniors from 1977 to 1984, this decline halted in 1985, remaining at 6.1%. Since that time, however, there has been a long-term, steady decline in the use of tranquilizers among college students.

The rate of cocaine use increased almost as much in 1985 as it did in the preceding five years. The use of butyl and amyl nitrites, marihuana, cigarettes, alcohol and PCP increased somewhat during 1984 to 1985 (Hymes, 1986, p. 17). Overall, national statistics estimated that by 1985, 61% of our high school population had tried at least one illicit drug, a number that had grown substantially over the previous decade (Johnston et al., 1986, pp. 9-10).

In reviewing the arrest statistics regarding drug abuse in the United States, Beschner and Friedman (1986) found that between 1969 and 1974, the number of apprehensions related to drugs rose from 233,000 to 642,000. The incidence of arrests per 100,000 people reached 393 in large cities in 1970. A similar pattern was observed when studying suburban and rural communities, where it peaked in the mid-1970s (p. 33). Additionally, regarding
those arrested, Beschner and Friedman found that the size of the population under 18 years of age and those between 18 to 20 years of age remained about the same as it had been at the end of the 1960s.

According to official estimates from the FBI's Uniform Crime Reports, there were some 580,900 arrests for drug abuse violations in the United States in 1980. Over 400,000 of these arrests involved marihuana, about 12% of the persons arrested were under age 18, and almost a third were under the age of 21 (Beschner & Friedman, 1986, p. 66).

National statistics regarding traffic accidents indicate that more than half of all traffic accidents involved persons who had been drinking (Gardner, 1981, p. 21). In addition, it is also estimated that over 80% of fire-related deaths, 65% of drownings, and 22% of home accidents, involved the use of alcohol. Drunk driving was related to 5,000 deaths and 130,000 injuries of teens in 1984 (Hymes, 1986, p. 17).

In 1984, the National Drug Abuse Warning Network showed a five-fold increase in cocaine related medical emergencies, from 8,831 to 46,020. Additionally, emergency room admissions related to crack, a super potent smokable form of cocaine, increased 28-fold, from 549 cases in 1984 to 15,306 in 1988 (Sperling, 1989, p. 1).
Emergency rooms around the country in 1981 reported that more than 50% of heroin users seeking treatment were in their twenties, and 35% were in their thirties. In 1985, it was estimated that less than 40% were in their twenties, and just under 45% were in their thirties. In 1981, 48% of all drug abusers seeking treatment listed heroin as their drug of choice, while only 11% listed cocaine. In 1986, only 13% listed heroin, and a majority, 52%, named cocaine or crack (Kerr, 1986, pp. 1-8).

In explaining the nature and extent of the problem of illicit drug involvement among high school students and their implications, we can conclude that it is a phenomenon that affects all sectors of our society. It is a dilemma that affects an alarming portion of our high school youth, currently estimated at an overall rate of up to 90%. Moreover, this pattern of increasing numbers of young people involved in drug abuse, and consequently other forms of deviant behavior, constitutes one of the most challenging problems we face today. This phenomenon also has been considered as an issue very difficult to understand, particularly in terms of the specific factors that drive young people to use and/or abuse drugs, and into other types of criminal involvement. In fact, various theoretical approaches have attempted, and failed, to decipher the root of the drug problem among our youth. Nonetheless, they have contributed by identifying
a number of socio-structural and demographic variables that are influential among young drug users. Once those factors are understood, however, how to control them is a corollary issue. The next section will address these issues.

Theoretical Approaches

A number of social science professionals have attempted to provide explanations of the causes, consequences, and cures of drug use and/or its abuse and other forms of nonconformity in our juvenile population. But not all such specialists look at deviance in the same way. Indeed, specialists often divide their vision along disciplinary lines. Psychiatrists, sociologists, psychologists, criminologists, medical researchers, and other specialists, frequently present divergent and even contradictory perspectives of deviance. In this sense, images of deviance are commonly organized according to the selective vision of the disciplines in which specialists are trained. In fact, they vary greatly even within the social sciences (Wiatrowski & Roberts, 1981).

There are distinctive psychosociological and structural theories that have been advanced to explain the nature and extent of youth drug abuse in the United States. A number of psychologists have attempted to explain this phenomenon by studying intelligence and
self-esteem of those participating in drug abuse. Also, psychoanalysts (e.g., Freud) have been primarily interested in exploring individual personality structure and correlating it with deviant personality types.

However, the more sociologically-oriented researchers (e.g., Parsons, 1964; Merton & Nisbet, 1971) have been studying the context or setting in which the dysfunctional behavior takes place. More often researchers attempt to find variables attributed to the family, peers, socio-economic composition, cultural values, social class, geography, race, and ethnic background, among others, that may influence dysfunctional relations such as illicit drug abuse and crime involvement.

The causes and consequences of conformity and delinquent behavior by our high school youths can be approached through the social control perspective. Like other social control perspectives (Mye, 1958; Reckless, 1967; & Reiss, 1951, in Hirschi, 1969), Hirschi's social bonding theory attempts to explain why people conform. Hirschi pointed out that it is necessary to explain the motivation for delinquency, since we are all inherently aggressive and naturally capable of committing delinquent acts. He proposed a control theory that locates the causes of delinquency in the processes that set people free from the bonds of normative constraint.
According to Hirschi, individuals bonded to social groups such as family, school and peers, would be less likely to be involved in delinquent acts. Thus, according to Hirschi, individuals are prevented from engaging in delinquency by four social bonds—attachment, commitment, involvement, and belief. When these bonds are weak, the individual is "free" to engage in delinquency and, given the appropriate motivation, is likely to engage in delinquency (Hirschi, 1969, pp. 31-34).

The first of Hirschi's (1969) social control bonds is "belief," which refers to the individual commitment to the central value system of the society (Agnew, 1985, p. 47). A similarity in beliefs is said to induce a similarity in behavior. According to Roy (1987), socialization into society's conventional belief system is an important feature of bonding or social control. Among these are included beliefs consistent with parental norms, legal norms, and beliefs in the value of our educational system. In addition to this, Wiatrowski and Roberts (1981) also stated that the family environment is the source of attachment because parents act as role models and teach their children socially acceptable behavior. Hirschi (1969, p. 29) argues that there is a dominant social order and that even delinquents may recognize the validity of those values, although they may not feel bonded by them because of their weakened ties to

Attachment refers to a person's affective bond to individual institutions, the world of work, and peers. For him/her, relational ties to one's parents and contemporary peers are the most emphasized source of attachment (Agnew, 1985). Strongly attached people are expected to be sensitive to the opinions of others. They are pictured to have a great investment in achieving or maintaining the respect of those with whom they associate.

Commitment refers to the individual's actual or anticipated investment in conventional activities such as "getting an education, building up a business, or acquiring a reputation of virtue" (Hirschi, 1969, p. 20). It also refers to the process of assessing the cost of delinquent acts compared to those of conformity. In contrast to youth with well-defined goals, adolescents engaged in drinking, using drugs, smoking, dating, and other behavior not oriented toward future goals are much more likely to engage in delinquent behavior (Wiatrowski & Roberts, 1981, p. 525).

Involvement refers to the amount of time spent in conventional activities such as reading and doing homework. According to the social control approach, individuals who spend much time in such activities have less time for delinquency. Here are included school-related
variables such as grades, attachment to school, and academic competence (Krohn & Massey, 1980, p. 531). Time spent on homework, for example, is viewed as antecedent to success in attaining educational goals that are prerequisites to high status occupation (Wiatrowski & Roberts, 1981, p. 525). In summary, involvement refers to the proportion of a person's time engaged in the pursuit of conventionality.

Using a behavioral paradigm, Hirschi analyzed the effects of attachment to parents, school and peers on the reported delinquent act. One important theme of Hirschi's and other control theories is the role of companionship in causing juvenile delinquency. Boys who have delinquent peers have probably been involved in delinquent acts, especially if their attachments to conventional society are weak (Hirschi, 1969). According to Hirschi (1969, p. 16), "delinquent acts result when an individual's bond to society is weak or broken." Thus, for Hirschi, the individual's bonds do play a decisive role in whether or not he/she will entertain delinquent activities.

Overall, Hirschi's examination of bonding mechanism represents a social-psychological consideration of forces that control or constrain persons to stay within the boundaries of the established normative order. According to the disorganizational perspective, social change
destroys the control power of the normative order. According to Roy (1987), Hirschi's picture of the bonding process allows us to look at the way change disrupts one or more of the components of bonding, weakening or suspending the power of internalized beliefs and external attachments, commitment, and involvements (Roy, 1987, p. 8).

Sociologist E. Goode (1989), in his attempt to outline the central assumptions of social control theory, stated that:

The more attached we are to conventional others—parents, teachers, clergy, employers, and so on—the less likely we are to break society's rules and use drugs. The more committed we are to conventional institutions—family, school, religion, work—the less likely we are to break society's rules and use drugs. The more involved we are in conventional activities—familiar, educational, religions, occupational—the less likely we are to break society's rules and use drugs. And the more deeply we believe in the norms of conventional institutions—again family, school, religion, and occupation—the less likely we are to break society's rules and use drugs. Drug use is "contained" by bonds with or adherence to conventional people, institutions, activities, and beliefs. If they are strong, recreational drug use is unlikely (pp. 66-67).

Under the social control approach, what causes drug use, and other type of deviant behavior, is the absence of the social attachment that leads individuals to conformity. Thus, most young people do not engage in deviant and/or criminal acts because of strong bonds with conventional, mainstream social institutions. Weakened or broken bonds would free the young person from
society's rule and, thus, free to deviate, including the use of drugs (Goode, 1989, p. 66).

Hirschi's social control theory locates the causes of deviance and/or juvenile involvement in drugs, in the circumstances that set people free from the bonds of normative constraint. Unlike most theories, social control theory attempts to specify the diverse aspects of the social bonding process which, when these are not favorably developed, increase the likelihood of deviant behavior (Pfohl, 1985, p. 163).

The main purpose of this section was to give a more articulate and summarized description of the nature and extent of the involvement of high school seniors in drug use and/or its abuse, and also to provide some guidelines for the current investigation. Additionally, this research will pinpoint some of the most influential social, structural, and demographic variables that influence this phenomenon. On the basis of the theoretical views expressed above, this study also will investigate the nature and extent to which our teens, and particularly our high school seniors, turn toward the use and/or abuse of drugs as well as their involvement in other types of delinquency.
CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

Introduction

This study attempts to investigate the nature, the extent and patterns of drug use among high school students. This study will also look at some important demographic, structural, and social variables that might have led to this phenomenon. However, in order to determine the extent of drug use and its pattern of variations for both 1976 and 1986, an empirical examination is crucial.

This chapter is divided into three sections. The first section will be devoted to the population and research sampling procedures, characteristics of the sample, research instrument, research variables, and the analysis of the data. The second part will discuss the statistical techniques used to analyze the data. Finally, the third part will discuss the research methodology employed, which includes the data analysis, instrument, definition of terms, definition of variables, statistical techniques, and research hypotheses.
Population and Sampling Procedures of the Research

The data utilized in this study were made available by the Inter-University Consortium for Political and Social Research. The data for Monitoring the Future, for both 1976 and 1986 (the years that are examined), were originally collected by Jerald G. Bachman, Lloyd D. Johnston, and Patrick M. O'Malley of the Survey Research Center, Institute for Social Research, University of Michigan (Bachman et al., 1980, 1987, p. 1).

Monitoring the Future data are collected from high school seniors during the spring of each year, beginning with the high school senior class of 1975. In order to provide an accurate cross-section of high school seniors, data collection takes place in approximately 125 to 135 public and private high schools across the United States. In 1976 and 1986, respectively, a representative sample of more than 15,000 high school seniors participated during the data collection phase.

The questionnaire includes approximately 100 questions on drugs and demographics, plus an average of 200 additional questions on a variety of subject areas including drug use and related attitudes about government, social institutions, race relations, changing roles for women, educational aspirations, occupational aims, marital and family plans, as well as a variety of other background and demographic factors. The questionnaire is designed to elicit answers that allow one to explore for...
changes in the life-style orientations of contemporary American youth.

The researchers used a multi-stage procedure to collect and secure the data for Monitoring the Future. The first stage focused on the selection of the geographic areas. These consist of 74 primary areas throughout the "contiguous" United States—including the 12 largest metropolitan areas, which contain about 30% of the nation's population. Of the 62 other primary areas, 10 are in the Northeast, 18 in the North Central area, 24 in the South, and 10 in the West.

The second stage identified the schools. For the purpose of the sample design, in major metropolitan areas, more than one high school was chosen. The selection of high schools was made in such a way that the probability of drawing a school is proportionate to the size of its senior class. When an identified school was unwilling to participate, a similar school (in terms of size, geographic area, urbanity, etc.) was recruited as a replacement.

The third stage includes students. Within each selected school, up to about 400 seniors may be included in the data collection. In schools with fewer than 400 seniors, an attempt was made to include all of them in the data collection. Moreover, in larger schools, a
subset of seniors was selected by randomly sampling classrooms.

For 1976 and 1986 the total number of participating schools and students yielded in the three-stage sampling procedures described above is depicted in Table 1.

Because many questions are needed to cover all of the topic areas, much of the questionnaire content is divided into five different questionnaire forms that are distributed to participants in an ordered sequence that produced five virtually identical subsamples. About one-third of each questionnaire form consists of key or "core" variables that are common to all forms. All demographic variables and some measures of drug use are included in the "core" set of measures.

Table 1
Participation of Respondents

<table>
<thead>
<tr>
<th>School/Students</th>
<th>1976</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td># Public Schools</td>
<td>108</td>
<td>113</td>
</tr>
<tr>
<td># Private Schools</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Total # Schools</td>
<td>123</td>
<td>129</td>
</tr>
<tr>
<td>Actual # Students</td>
<td>16,677</td>
<td>15,713</td>
</tr>
<tr>
<td>Student Response Rate (%)</td>
<td>77</td>
<td>83</td>
</tr>
</tbody>
</table>
The population examined in this study is included for only the years 1976 and 1986, and it was drawn from Bachman et al. (1980, 1987), Monitoring the Future. The questionnaire administration in each school was carried out by the local Survey Research Center (SRC) representatives and their assistants, following standardized procedures detailed in a project instruction manual. The questionnaires were administered in classrooms during regular class periods. Teachers were not requested to do anything more than remain in the classroom to help guarantee an orderly atmosphere for the survey. Finally, the questionnaire was designed to be finished within a 45 minute class period; for those who could not do so, a few minutes of additional time was provided.

Concerning the student rate of participation, completed questionnaires were obtained from three-fourths to four-fifths of all students sampled. Students were missed because they were absent from class at the time of the data collection or because they refused to complete or turn in the questionnaire. The overall proportion of absenteeism is estimated to be only about one percent, and the student response rates were 77% in 1976 and 83% in 1986.

However, the data are given only for the two largest racial or ethnic subgroups in the population, i.e., those who identified themselves as white or Caucasian and those
who identified themselves as non-white. Unfortunately, specific data are unavailable on American Indians, Asian Americans, Mexican Americans, Puerto Ricans, or other Latin Americans. These groups constitute less than three percent of the sample in any given year, which means that their small numbers (in combination with their clustered groupings in a limited number of schools) would yield numbers that would be too unreliable. In fact, blacks only constitute approximately 12% of each year's sample, which translates into only 350 to 425 respondents per year.

Research Variables

Drug use is the topic that will receive the most extensive analysis in this study, but other subjects such as social institutions, race and gender link, educational aspirations, family social economic status, as well as background and demographic factors will also be examined. In addition, demographic variables, such as geographic region, age, marital status, among others, were used for descriptive purposes only, and their respective frequency distributions are included in Chapter IV of this thesis.

The procedure followed for the selection of the variables to be used in this study was made difficult because of the extent of the data and the way in which they were presented. These data are thus very complex,
being composed of five different questionnaires, each one with a different set of questions, measuring a number of issues.

As noted elsewhere, this study focuses on Hirschi's (1969) social control theory, which asserts that the more committed the individual is to social institutions the less likely s/he will be involved in drug use and/or other types of delinquency. In other words, juveniles who, during the socialization process, did not develop strong bonds with social institutions, such as their family, religion, and school, are more likely to be involved in drug use and other crimes. Accordingly, variables such as religious importance and church attendance, school activities, and self-image were used to test Hirschi's social control theory.

**Dependent Variable**

**Drug Use**

Drug use is used in this study as a dependent variable to test Hirschi's (1969) social control theory. More specifically, the objective is to ascertain whether certain social bonds, e.g., attachment to religious beliefs, to school, and to family, are influential factors in determining whether a youngster will use drugs. In most instances, drug use will be measured by
use or nonuse of drugs in the last 30 days, and in other cases it will be used as level of drug use such as 0 times, 1-2 times, 3-5 times and so on, in the last 30 days.

**Independent Variables**

**Gender**

In this study, gender is utilized as an independent variable to test for any differences that may exist regarding the degree of drug involvement by males and females.

**Race**

Race is used as an independent variable to test for any differences that may exist regarding the degree of drug involvement by the race of the individual. However, this study will consider the race of the respondents as white and non-white, as described earlier.

**Education**

As an independent variable, education is used to test for any association between education of parents and the degree of high school seniors involved with drugs.
Interpersonal Relationships

Here, time spent with friends and time spent in extracurricular activities operate as independent variables in order to determine their influence on high school seniors' involvement with drugs.

Religious Commitment

Religious practices and views are used as independent variables to test the association between the degree of religious commitment and school performance of high school seniors and their drug involvement. Other personality variables, such as self-image, self-esteem, and the self-rating of intelligence, are also used as independent variables to test their influence of high school seniors drug involvement.

Deviant Behavior

To test for any relationship between drug use and delinquent behaviors a set of independent variables such as fights with parents, fights with supervisor, fights with gangs, stealing money, shoplifting, car theft, theft of parts of cars, trespassing a building, arson, school damage, work damage, and trouble with the police will be used.
Analysis

This section of this chapter is concerned with the procedures employed to analyze the data used in this study. Regarding the hypotheses, included in Chapter I, an investigation of any associations existing between the independent variables and the degree of drug use (dependent variable) among high school seniors is essential. Additionally, this study will explore any differences in the degree of each type of drug used by gender, social economic status, race and other social-structural variables.

Frequency and percentage distributions will be used to describe the samples. Descriptive analysis of the research sample is useful in determining the number of observations in each response category for the variables for both years, 1976 and 1986, examined in this study. The frequency and percentage distribution table analysis will be organized, analyzed, and interpreted in a clear, straightforward way in order to ascertain if there are any different relationship patterns between the independent and dependent variables. The same tables will be used in testing the statistical significance of differences between subgroups, to compare trends, and the significance of year-to-year changes.
The chi-square statistical technique will also be utilized with the degrees of freedom (alpha) at the standard .05 level of significance. The chi-square will be utilized with the dependent variable—high school seniors' drug use—and the independent variables under the general categories: demographics, background, social attitudes and activities, religion, family, social economic status of parents, and personal variables. This type of test will help determine the role of these covarying variables and other associations and relationships.

Summary

This chapter presented in some detail the characteristics of the research design and the methodology, including the sampling procedure, used in the data collection. Additionally, the research variables and statistical techniques were discussed.
CHAPTER IV

PRESENTATION OF THE FINDINGS

Introduction

This chapter presents the results of the data analysis performed in this study. First, a description of the respondents is provided, using demographic and background data. This is followed by an examination of the data and their relationship with each hypothesis. Frequency and percentage distributions are also provided in this study. Finally, contingency tables are utilized along with the chi-square test of significance to evaluate these findings.

Description of the Sample

Demographic and Religious Factors

Each frequency and percentage distribution presented in this section considers the entire sample population for each year studied, 1976 and 1986: 15,154 and 15,660, respectively. However, it should be noted that Tables 1 through 8 represent valid percentages that do not include the number of missing values in the calculation of
percentages for each variable.

In order to test specific hypotheses for both years studied, two data files were chosen. First, a main file that contained a general description (background and demographic) of the entire sample population was chosen. Second, for 1976, a student subsample of 3,353 cases, and, for 1986, a subsample of 3,174 were selected, both of which focused on drug use and juvenile delinquency.

Table 2 below depicts various demographic variables such as gender, age, race, and marital status.

Table 2

Frequency and Percentage Distribution of Respondents by Gender, Age, Race, and Marital Status

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>7257</td>
<td>50.0</td>
<td>7215</td>
<td>47.9</td>
</tr>
<tr>
<td>Female</td>
<td>7254</td>
<td>50.0</td>
<td>7441</td>
<td>52.1</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-</td>
<td>9</td>
<td>.1</td>
<td>1</td>
<td>.0</td>
</tr>
<tr>
<td>16-17</td>
<td>374</td>
<td>2.6</td>
<td>215</td>
<td>1.4</td>
</tr>
<tr>
<td>18-19</td>
<td>14030</td>
<td>94.9</td>
<td>14701</td>
<td>96.2</td>
</tr>
<tr>
<td>20+</td>
<td>369</td>
<td>2.5</td>
<td>372</td>
<td>2.3</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>11809</td>
<td>87.3</td>
<td>11672</td>
<td>87.7</td>
</tr>
<tr>
<td>Non-white</td>
<td>1716</td>
<td>12.7</td>
<td>1644</td>
<td>12.3</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>374</td>
<td>2.5</td>
<td>331</td>
<td>2.2</td>
</tr>
<tr>
<td>Engaged</td>
<td>1073</td>
<td>7.3</td>
<td>957</td>
<td>6.3</td>
</tr>
<tr>
<td>Separated or Divorced</td>
<td>69</td>
<td>.5</td>
<td>119</td>
<td>.8</td>
</tr>
<tr>
<td>Single</td>
<td>13231</td>
<td>89.7</td>
<td>13881</td>
<td>90.8</td>
</tr>
</tbody>
</table>

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Table 2 shows the various pertinent demographic characteristics of the high school senior sample population which was selected from four distinct geographical areas in the contiguous United States for 1976 and 1986. The population is almost evenly distributed between the genders. For 1976, the split was exactly half: 50% male, and 50% female. In 1986, 47.9% were male, while 52.1% were female. As was expected, the age of high school seniors was almost evenly distributed among the 18-19 age category. In 1976, 94.9% of the sample were among the ages 18-19 years old, while in 1986 students within the same age category increased slightly to 96.2%.

The original data used in this study included race under two categories, white or Caucasian and non-white—including blacks, Hispanics and other minority groups. In 1976, the majority or 87.3% of the sample were white, and only 12.7% were non-white. The percentage of white high school seniors had increased slightly from 87.3% in 1976 to 87.7%, in 1986, while non-white high school seniors slightly decreased from 12.7% in 1976 to 12.3% in 1986.

Concerning marital status, not surprisingly the great majority of high school seniors were single. For 1976, 89.7% of the entire sample population of high school seniors were single and for 1986, 90.8% fell under the same category.
Table 3 depicts the home region and the school region of the sample population. In 1976, 29.6% of the high school senior population reported living in "a small city or town (under 50,000 people)," a percentage which increased to 33.2% in 1986. While 14.1% of the senior student population reported living "in the country (not a farm)" in 1976, 13.6% did so in 1986. Additionally, in 1976, 12.9% of the senior student population reported living "in a medium size city (50,000-100,000 people)," while in 1986, 13.4% reported doing so. Only 4.2% in 1976 and 4.0% in 1986 reported living "in a suburb of a very large city (50,000 or more)."

School region has four categories: North East area, North Central area, South, and West. The frequency and percentage distributions, for both years examined, appeared to be very similar. In 1976, 23.7% of the schools were in the North East area, 30.9% in the North Central area, 30.4% in the South, and 15.1% in the West region. The 1986 figures are 23.6%, 28.3%, 30.8%, and 17.3%, respectively.

Table 4 includes additional demographic factors for the high school senior sample population for 1976 and 1986. For both years, a large number of high school seniors' fathers had finished high school or some college: 43.2% for 1976, and 44.9% for 1986. Moreover, for 1986, there was a marked increase (7.5%) in the
Table 3
Frequency and Percentage Distribution of Respondents by Home Region and School Region

<table>
<thead>
<tr>
<th>Variable</th>
<th>1976 (N=15,154)</th>
<th>1986 (N=15,660)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency (%)</td>
<td>Frequency (%)</td>
</tr>
<tr>
<td><strong>Home Region</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On a farm</td>
<td>1440 10.6</td>
<td>840 5.9</td>
</tr>
<tr>
<td>In the Country (not on a farm)</td>
<td>1928 14.1</td>
<td>1935 13.6</td>
</tr>
<tr>
<td>In a small city (under 500,000)</td>
<td>4037 29.6</td>
<td>4723 33.2</td>
</tr>
<tr>
<td>In a medium size city (50,000-100,000)</td>
<td>1763 12.9</td>
<td>1907 13.4</td>
</tr>
<tr>
<td>In a Suburb of Med. size city</td>
<td>1125 8.3</td>
<td>1098 7.7</td>
</tr>
<tr>
<td>In a Large city (100,000-500,000)</td>
<td>1089 8.0</td>
<td>1278 9.0</td>
</tr>
<tr>
<td>In a suburb of a Large city</td>
<td>1031 7.6</td>
<td>1119 7.9</td>
</tr>
<tr>
<td>In a Very Large city (over 500,000)</td>
<td>647 4.7</td>
<td>749 5.3</td>
</tr>
<tr>
<td>Suburb of a Very Large city</td>
<td>567 4.2</td>
<td>569 4.0</td>
</tr>
<tr>
<td><strong>School Region</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North East Area</td>
<td>3586 23.7</td>
<td>3699 23.6</td>
</tr>
<tr>
<td>North Central Area</td>
<td>4678 30.9</td>
<td>4436 28.3</td>
</tr>
<tr>
<td>South</td>
<td>4607 30.4</td>
<td>4819 30.8</td>
</tr>
<tr>
<td>West</td>
<td>2282 15.1</td>
<td>2707 17.3</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Educational Level</th>
<th>1976 (N = 15,154)</th>
<th>1986 (N = 15,660)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency (%)</td>
<td>Frequency (%)</td>
</tr>
<tr>
<td><strong>Father</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some High School</td>
<td>3293</td>
<td>2810</td>
</tr>
<tr>
<td>or Less</td>
<td>27.3</td>
<td>18.5</td>
</tr>
<tr>
<td>High School or</td>
<td>5217</td>
<td>6824</td>
</tr>
<tr>
<td>some College</td>
<td>43.2</td>
<td>44.9</td>
</tr>
<tr>
<td>Completed College</td>
<td>2705</td>
<td>4701</td>
</tr>
<tr>
<td>or Graduate, or</td>
<td>22.4</td>
<td>30.9</td>
</tr>
<tr>
<td>Professional School</td>
<td>853</td>
<td>876</td>
</tr>
<tr>
<td>Don't Know</td>
<td>7.1</td>
<td>5.8</td>
</tr>
<tr>
<td><strong>Mother</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some High School</td>
<td>2837</td>
<td>2533</td>
</tr>
<tr>
<td>or Less</td>
<td>23.4</td>
<td>16.7</td>
</tr>
<tr>
<td>High School or</td>
<td>6786</td>
<td>8580</td>
</tr>
<tr>
<td>some College</td>
<td>54.9</td>
<td>56.4</td>
</tr>
<tr>
<td>Completed College</td>
<td>1999</td>
<td>3662</td>
</tr>
<tr>
<td>or Graduate, or</td>
<td>16.5</td>
<td>24.1</td>
</tr>
<tr>
<td>Professional School</td>
<td>511</td>
<td>439</td>
</tr>
<tr>
<td>Don't Know</td>
<td>4.2</td>
<td>2.9</td>
</tr>
</tbody>
</table>
percentage of fathers who had completed college or graduate/professional school; 22.4% in 1976 and 30.9% in 1986, while the percentage of fathers who had some high school or less decreased markedly, 27.3% in 1976 to 18.5% in 1986.

Regarding the educational level of the mothers of high school seniors, the data revealed that more mothers than fathers have "high school or some college": 54.9% for 1976 and 56.4% for 1986. Also, fewer (6.7%) mothers than fathers have "some high school or less": 23.4% for 1976, 16.7% for 1986. Also, for 1976 and 1986, fewer mothers than fathers had completed college or graduate/professional school: 16.5% and 24.1% respectively.

Additionally, in respect to the respondents' household (Table 5), the data showed that a great majority of the high school seniors sampled lived with their parents and siblings. For the ten-year span, however, there was a marked decrease of seniors who lived with their fathers.

For 1976 and 1986, a large percentage of high school seniors' future aspirations involved graduating from a four-year college, 53.3% and 66.7%, respectively. Moreover, a sizable number of high school seniors indicated that they would like to attend graduate or professional school after college: 33.6% for 1976 and 43.0% for 1986. (Note the marked increase (9.4%) for 1986). In addition,
Table 5
Frequency and Percentage Distribution of Respondents by Household and Their Future Aspirations

<table>
<thead>
<tr>
<th>Variable</th>
<th>1976</th>
<th>(%)</th>
<th>1986</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Respondents' household</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father</td>
<td>12014</td>
<td>81.7</td>
<td>11627</td>
<td>74.4</td>
</tr>
<tr>
<td>Mother</td>
<td>13535</td>
<td>92.0</td>
<td>13775</td>
<td>90.5</td>
</tr>
<tr>
<td>Brother(s) and/or Sister(s)</td>
<td>11424</td>
<td>77.7</td>
<td>10840</td>
<td>71.2</td>
</tr>
<tr>
<td>Grandparents</td>
<td>796</td>
<td>5.4</td>
<td>896</td>
<td>5.9</td>
</tr>
<tr>
<td>Husband/wife</td>
<td>206</td>
<td>1.4</td>
<td>145</td>
<td>1.0</td>
</tr>
<tr>
<td>Children</td>
<td>138</td>
<td>.9</td>
<td>148</td>
<td>1.0</td>
</tr>
<tr>
<td>Other relative(s)</td>
<td>629</td>
<td>4.3</td>
<td>735</td>
<td>4.8</td>
</tr>
<tr>
<td>Non relative(s)</td>
<td>330</td>
<td>2.2</td>
<td>498</td>
<td>3.3</td>
</tr>
<tr>
<td><strong>Respondents' future aspirations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attend technical or vocational school</td>
<td>3842</td>
<td>25.4</td>
<td>3302</td>
<td>22.4</td>
</tr>
<tr>
<td>Serve in the Armed Forces</td>
<td>2210</td>
<td>15.5</td>
<td>2400</td>
<td>16.3</td>
</tr>
<tr>
<td>Graduate from two-year college prog.</td>
<td>3497</td>
<td>24.5</td>
<td>3753</td>
<td>25.5</td>
</tr>
<tr>
<td>Graduate from college (four-year program)</td>
<td>7602</td>
<td>53.3</td>
<td>9828</td>
<td>66.7</td>
</tr>
<tr>
<td>Attend graduate or prof. school after college</td>
<td>4795</td>
<td>33.6</td>
<td>6333</td>
<td>43.0</td>
</tr>
<tr>
<td>None of the above</td>
<td>1859</td>
<td>13.0</td>
<td>1077</td>
<td>7.3</td>
</tr>
</tbody>
</table>

25.4% for 1976, and 22.4% for 1986, wished to attend technical or vocational school. Further, 15.5% for 1976 and 16.3% for 1986 wished to serve in the armed forces.

In Table 6, the data revealed that, for both years, approximately 40% of high school seniors were enrolled in
an academic or college preparation high school program. In addition, 32% and 31.6% of high school seniors, for 1976 and 1986 respectively, were enrolled in a general high school program.

Table 6

Frequency and Percentage Distribution of Respondents by High School Program, High School Grades and Self-Intelligence Average

<table>
<thead>
<tr>
<th>Variable</th>
<th>1976 (N=15,154)</th>
<th>1986 (N=15,660)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency (%)</td>
<td>Frequency (%)</td>
</tr>
<tr>
<td>Respondents high school program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic or College preparation</td>
<td>6143</td>
<td>7363</td>
</tr>
<tr>
<td>General</td>
<td>4650</td>
<td>4746</td>
</tr>
<tr>
<td>Voc., technical or commercial</td>
<td>2364</td>
<td>1956</td>
</tr>
<tr>
<td>Others</td>
<td>1358</td>
<td>976</td>
</tr>
<tr>
<td>High school Grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A (100-90)</td>
<td>2793</td>
<td>2719</td>
</tr>
<tr>
<td>B (89-80)</td>
<td>7900</td>
<td>7915</td>
</tr>
<tr>
<td>C (79-70)</td>
<td>3561</td>
<td>4132</td>
</tr>
<tr>
<td>D (69 or below)</td>
<td>148</td>
<td>199</td>
</tr>
<tr>
<td>Self-intelligence Average</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below average</td>
<td>758</td>
<td>882</td>
</tr>
<tr>
<td>Average</td>
<td>5656</td>
<td>5302</td>
</tr>
<tr>
<td>Above average</td>
<td>7923</td>
<td>8683</td>
</tr>
</tbody>
</table>

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Moreover, for 1976 and 1986, slightly more than half of the sample population reported having a B average in their academic work: 54.9% for 1976 and 52.9% for 1986. Approximately 1 in 4 of high school seniors, for both years, reported having a C average. Additionally, 19.4% for 1976 and 18.2% 1986, reported having an A as their grade average in high school.

Concerning the average self-rating of intelligence, for 1976 and 1986, it seems that over 90% of the respondents rated themselves average or above average.

Table 7 reveals religious affiliations concerning the high school senior sample population. For both years a greater percentage of those surveyed were affiliated with Protestant churches such as Baptist, Churches of Christ, Disciples of Christ, Episcopal, Lutheran, Methodist, Presbyterian, United Church of Christ, or other Protestant churches. Accordingly, 51.9% for 1976 and 49.7% for 1986 fell under the Protestant category.

A much smaller percentage of the respondents, as expected, were Roman Catholic: 24.5% for 1976, and 28.3% for 1986. In 1976, 8.3% of high school seniors reported being affiliated with other religious faiths such as Unitarian, Eastern Orthodox, Jewish, or others. That percent was increased to 10.1% in 1986. Additionally, in 1976, 10.8% of the respondents, and 11.9% in 1986, reported having no religious affiliations.
Table 7

Frequency and Percentage Distribution of Respondents by Religion, Religious Attendance, and Religious Importance

<table>
<thead>
<tr>
<th>Variable</th>
<th>1976 (N=15,154)</th>
<th>Frequency (%)</th>
<th>1986 (N=15,660)</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protestant</td>
<td>7861</td>
<td>51.9</td>
<td>7447</td>
<td>49.7</td>
</tr>
<tr>
<td>Roman Catholic</td>
<td>3713</td>
<td>24.5</td>
<td>4249</td>
<td>28.3</td>
</tr>
<tr>
<td>Others</td>
<td>1250</td>
<td>8.3</td>
<td>1516</td>
<td>10.1</td>
</tr>
<tr>
<td>None</td>
<td>1636</td>
<td>10.8</td>
<td>1785</td>
<td>11.9</td>
</tr>
<tr>
<td><strong>Religious Attendance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>1590</td>
<td>10.9</td>
<td>1829</td>
<td>12.1</td>
</tr>
<tr>
<td>Rarely</td>
<td>4670</td>
<td>30.8</td>
<td>5586</td>
<td>36.1</td>
</tr>
<tr>
<td>Once or twice a month</td>
<td>2390</td>
<td>15.8</td>
<td>2554</td>
<td>16.8</td>
</tr>
<tr>
<td>Once a week or more</td>
<td>5955</td>
<td>39.3</td>
<td>5201</td>
<td>34.3</td>
</tr>
<tr>
<td><strong>Religious importance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not important</td>
<td>1869</td>
<td>12.8</td>
<td>2014</td>
<td>13.3</td>
</tr>
<tr>
<td>A little important</td>
<td>4064</td>
<td>27.9</td>
<td>4206</td>
<td>27.7</td>
</tr>
<tr>
<td>Pretty important</td>
<td>4451</td>
<td>30.5</td>
<td>4972</td>
<td>32.8</td>
</tr>
<tr>
<td>Very important</td>
<td>4203</td>
<td>28.8</td>
<td>3973</td>
<td>26.2</td>
</tr>
</tbody>
</table>

Concerning religious attendance, in 1976 a larger percentage of respondents (39.3%) attended religious events once a week or more, compared to 34.3% in 1986. For 1986, a greater percentage of respondents, or 36.1%, reported that they attended religious events "rarely," while for 1976, 30.8% reported doing so. Also, the number of high school seniors reporting that they "never
attended" religious events increased slightly (1.2%) from 1976 to 1986: 10.9% and 12.1%, respectively.

There was no significant change from 1976 to 1986 concerning high school seniors that viewed religion as "pretty important": 30.5% and 32.8%, respectively. Those who reported religion as "a little important" included 27.9% of the responses in 1976, and 27.7% in 1986. Concerning those who considered religion as "not that important," the percentages were, in 1976, 12.8% and 13.3% for 1986. Religious importance appears to have declined for 1986, exhibiting a slightly (0.5%) higher percentage of students who are not interested in religion. (Note that the percentage of respondents who considered religion "very important" decreased slightly from 1976 to 1986, while the number who considered it not important increased slightly).

Data on "drug use in the last 30 days" are noted in Tables 8, 9, and 10. This variable consists of both licit or permissive drugs as well as illicit or non-permissive drugs used by some high school seniors.

Table 8 depicts cigarette and alcohol use in the last 30 days of the sample student population for 1976 and 1986. For both years, the greater percentage of the respondents had not smoked cigarettes in the last thirty days. Roughly 61.2% in 1976 and 70.4% in 1986 of the sample of high school seniors responded that they have
not used cigarettes in the last thirty days. This pattern, certainly, follows the national trends of declining cigarette consumption among youth.

Table 8

Frequency and Percentage Distribution of Respondents by Cigarettes, Alcohol and Marihuana/Hashish Use in the Last 30 Days

<table>
<thead>
<tr>
<th>Variable</th>
<th>1976 (N=15,154)</th>
<th>Frequency (%)</th>
<th>1986 (N=15,660)</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cigarettes in the past 30 days</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at all</td>
<td>8956</td>
<td>61.2</td>
<td>10760</td>
<td>70.4</td>
</tr>
<tr>
<td>Less than one per day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 cigarettes per day</td>
<td>1400</td>
<td>9.6</td>
<td>1117</td>
<td>7.3</td>
</tr>
<tr>
<td>About 1/2 to one pack per day</td>
<td>2511</td>
<td>17.2</td>
<td>1578</td>
<td>10.4</td>
</tr>
<tr>
<td>About 1 to 2 or more packs per day</td>
<td>297</td>
<td>2.0</td>
<td>174</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Alcohol use last 30 days</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>4415</td>
<td>31.7</td>
<td>5142</td>
<td>34.7</td>
</tr>
<tr>
<td>1-5</td>
<td>5649</td>
<td>40.7</td>
<td>5842</td>
<td>39.4</td>
</tr>
<tr>
<td>6-19</td>
<td>3099</td>
<td>22.9</td>
<td>3114</td>
<td>21.0</td>
</tr>
<tr>
<td>20-39</td>
<td>456</td>
<td>3.3</td>
<td>426</td>
<td>2.9</td>
</tr>
<tr>
<td>40 or more</td>
<td>325</td>
<td>2.3</td>
<td>285</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>Marihuana/Hashish last 30 days</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>9673</td>
<td>67.7</td>
<td>11524</td>
<td>76.6</td>
</tr>
<tr>
<td>1-5</td>
<td>1968</td>
<td>13.8</td>
<td>2021</td>
<td>13.4</td>
</tr>
<tr>
<td>6-19</td>
<td>1487</td>
<td>10.4</td>
<td>908</td>
<td>6.0</td>
</tr>
<tr>
<td>20-39</td>
<td>610</td>
<td>4.3</td>
<td>283</td>
<td>1.9</td>
</tr>
<tr>
<td>40 or more</td>
<td>555</td>
<td>3.9</td>
<td>314</td>
<td>2.1</td>
</tr>
</tbody>
</table>
Additionally, for 1976 just 10.0% and, for 1986, only 10.4% of the high school student population had smoked less than one cigarette per day; the percentages for those who smoked 1-5 cigarettes are slightly (2.3%) different for both years: 9.6% and 7.3% respectively.

The percentage of high school seniors who had used 1/2 to 1 pack of cigarettes per day decreased markedly from 17.2% in 1976 to 10.4% in 1986. Hence, a smaller percentage of the respondents, as expected, can be considered heavy cigarette smokers: 2.0% for 1976 and 1.2% for 1986; these data agree with current national trends concerning cigarette smoking.

With respect to alcohol consumption, in the last 30 days, of high school seniors sampled, a greater number of students for 1986 reported non-use of alcohol in the last 30 days than in 1976: 34.7% and 31.7%, respectively. Not surprisingly, for both years, the majority of high school seniors had used alcohol in the last 30 days.

Interestingly, for 1976, 40.7% and 39.4% for 1986 of the students had used alcohol 1-5 times in the last 30 days (Table 8). There was a slight decrease in all categories of alcohol use in 1986 when compared to those of 1976. Similarly, the same pattern is shown for all the other categories.

Additionally, over the ten-year span there was a marked (8.9%) increase in the percentage of high school
seniors who had not used marihuana/hashish: from 67.7% to 76.6%. At the same time, according to the responses, the percentage of those who used marihuana/hashish 40 or more times in the last 30 days decreased from 3.9% in 1976 to 2.1% in 1986. Whereas, in 1976, 10.4% of high school seniors used marihuana/hashish 6-19 times in the last 30 days, only 6% did so in 1986.

In summary, as disclosed in Table 8, the frequency of alcohol, cigarettes, and marihuana/hashish use among those who reported using these drugs decreased in 1986, as did the total number of actual cases of use reported dropped.

Other aspects of illegal drug use among high school seniors in United States are delineated in Tables 9 and 10.

Table 9 reveals that the percentage of high school seniors who did not use other psychedelic drugs in the last 30 days increased slightly (1.0%) from 1976 to 1986: 97.7% and 98.7%, respectively. In addition, the percentage of those who used other psychedelics drugs 20-39 times in the last 30 days decreased markedly in the 1976 to 1986 time period; 4.3% to 0%, respectively.

The non-use of LSD in the last 30 days, shown in Table 9, increased (0.3%) slightly in the ten-year span: 98.1% in 1976 compared to 98.4% in 1986. Additionally, the non-use of tranquilizers in the last 30 days also
Table 9
Frequency and Percentage Distribution of Respondents' Drug Use in the Last 30 Days

<table>
<thead>
<tr>
<th>Frequency of Usage</th>
<th>1976 (N=16,677)</th>
<th>1986 (N=15,713)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Other Psychodelics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>last 30 days</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>14147</td>
<td>15019</td>
</tr>
<tr>
<td>1-5</td>
<td>287</td>
<td>162</td>
</tr>
<tr>
<td>6-19</td>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>20-39</td>
<td>610</td>
<td>1</td>
</tr>
<tr>
<td>40 or more</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><strong>LSD last 30 days</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>14301</td>
<td>15014</td>
</tr>
<tr>
<td>1-5</td>
<td>257</td>
<td>220</td>
</tr>
<tr>
<td>6-19</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>20-39</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>40 or more</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>Tranquilizers-use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>last 30 days</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>13808</td>
<td>14824</td>
</tr>
<tr>
<td>1-5</td>
<td>415</td>
<td>272</td>
</tr>
<tr>
<td>6-19</td>
<td>77</td>
<td>43</td>
</tr>
<tr>
<td>20-39</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>40 or more</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td><strong>Inhalants use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>last 30 days</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>11562</td>
<td>11813</td>
</tr>
<tr>
<td>1-5</td>
<td>88</td>
<td>248</td>
</tr>
<tr>
<td>6-19</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>20-39</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>40 or more</td>
<td>5</td>
<td>19</td>
</tr>
</tbody>
</table>

slightly increased (1.9%) in the ten-year span, from 96.0% in 1976 to 97.9% in 1986. The percentage of those who used tranquilizers 1-5 times in the last 30 days
decreased from 3.3% in 1976 to 1.8% in 1986.

In regard to inhalants, from 1976 to 1986, the percentage of high school seniors who had not used inhalants in the last 30 days decreased from 99.1% to 97.5%, respectively. Additionally, the percentage of those who used inhalants 1-5 times in the last 30 days increased from 0.7% in 1976 to 2.0% in 1986. The percentage of those who used inhalants 40 or more times, increased slightly from 0% in 1976 compared to 0.2% in 1986.

Table 10 depicts the level of high school seniors' involvement with illicit drugs such as cocaine, amphetamines, quaaludes, barbiturates, heroin and/or other narcotics. From 1976 to 1986, the percentage of high school seniors who had not used cocaine in the last 30 days decreased markedly (4.2%) from 98.0% in 1976 to 93.8% in 1986. The percentage of those who used cocaine 1-5 times in the last 30 days, however, also increased markedly (3.0%) in that time period, from 1.7% in 1976 to 4.7% in 1986. Additionally, there was a slight (0.2%) increase in those who used cocaine 40 or more times in the last 30 days, from 0% in 1976 to 0.2% in 1986.
Table 10

Frequency and Percentage Distribution of Respondents' Drug Use in the Last 30 Days

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>1976 (N=16,677)</th>
<th>1986 (N=15,713)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency (%)</td>
<td>Frequency (%)</td>
</tr>
<tr>
<td><strong>Cocaine last 30 days</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>14187 98.0</td>
<td>14238 93.8</td>
</tr>
<tr>
<td>1-5</td>
<td>245   1.7</td>
<td>707   4.7</td>
</tr>
<tr>
<td>6-19</td>
<td>38    .3</td>
<td>164   1.1</td>
</tr>
<tr>
<td>20-39</td>
<td>6     .0</td>
<td>32    .2</td>
</tr>
<tr>
<td>40 or more</td>
<td>5     .0</td>
<td>35    .2</td>
</tr>
<tr>
<td><strong>Amphetamines last 30 days</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>13326 92.3</td>
<td>14332 94.4</td>
</tr>
<tr>
<td>1-5</td>
<td>792   5.5</td>
<td>626   4.1</td>
</tr>
<tr>
<td>6-19</td>
<td>256   1.8</td>
<td>164   1.1</td>
</tr>
<tr>
<td>20-39</td>
<td>46    .3</td>
<td>36    .2</td>
</tr>
<tr>
<td>40 or more</td>
<td>16    .1</td>
<td>19    .1</td>
</tr>
<tr>
<td><strong>Quaaludes use last 30 days</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>14194 98.3</td>
<td>15100 99.2</td>
</tr>
<tr>
<td>1-5</td>
<td>196   1.3</td>
<td>97    .6</td>
</tr>
<tr>
<td>6-19</td>
<td>32    .3</td>
<td>16    .1</td>
</tr>
<tr>
<td>20-39</td>
<td>4     .0</td>
<td>2     .0</td>
</tr>
<tr>
<td>40 or more</td>
<td>4     .0</td>
<td>4     .0</td>
</tr>
<tr>
<td><strong>Barbiturates last 30 days</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>13857 96.1</td>
<td>14874 98.2</td>
</tr>
<tr>
<td>1-5</td>
<td>443   3.0</td>
<td>223   1.5</td>
</tr>
<tr>
<td>6-19</td>
<td>98    .7</td>
<td>42    .3</td>
</tr>
<tr>
<td>20-39</td>
<td>11    .1</td>
<td>4     .0</td>
</tr>
<tr>
<td>40 or more</td>
<td>5     .0</td>
<td>5     .0</td>
</tr>
</tbody>
</table>
Although the use of amphetamines 40 or more times in the last 30 days remained the same for both years (0.1%), the percentage of students who had not used amphetamines in the last 30 days increased from 92.3% in 1976 to 94.4% in 1986.

Table 10 reveals that from 1976 to 1986, the percentage of high school seniors who had not used quaaludes in the last 30 days increased from 98.3% to 99.2%. The percentage of those who did not use barbiturates in the last 30 days increased from 96.1% in 1976 to 98.2% in 1986. Also, the percentage of those who used barbiturates 1-5 times in the last 30 days decreased by half,
from 3.0% in 1976 to 1.5% in 1986. However, the use of heroin is the same for both years.

The percentage of high school seniors who did not use other psychedelic drugs in the last 30 days increased slightly (1.0%) from 1976 to 1986: 97.7% and 98.7%, respectively. In addition, the percentage of those who used other psychedelics 20-39 times in the last 30 days decreased markedly (4.3%) in the 1976 to 1986 time period: 4.3% and 0%, respectively. Finally, it can be concluded that among high school seniors the use of barbiturates remained virtually the same with a slight 2% increase of students reporting no use of barbiturates in the ten-year span.

Summary of Demographic Variables

The following is a brief summary of the characteristics of the research population utilized in this study. The majority of high school seniors sampled were white or Caucasian, and the genders were almost similarly distributed. Specifically, 77.9% in 1976 and 87.7% in 1986 were whites or Caucasians. In 1976 both males and females were equally distributed, 50.0% of the cases; and in 1986, males comprised 47.9% of the cases while female made up 52.1% of the whole sample. Roughly, 94.9% in 1976 and 96.2% in 1986 of the sample population who responded were between 18-19 years of age.
The study also revealed the following: in 1976, 89.7% of the senior students were single, compared to 90.8% in 1986 (Table 2); 29.6% in 1976 and 33.2% in 1986 reported living "in a small city or town (under 50,000 people)," while only 4.2% in 1976 and 4.0% in 1986, reported living in a suburb of a very large city; additionally 12.9% in 1976 and 13.4% in 1986 reported living "in a medium size city (50,000-100,000)"; 43.2% in 1976 and 44.9% in 1986 reported father's educational level to be high school or some college, while 54.9% in 1976 and 56.4% in 1986 reported mother's educational level to be on the same category. Additionally, concerning respondents' households, in 1976, 92.0% lived with their mother and 81.7% with their father; the percentages decreased to 90.5% and 74.4%, respectively, in 1986.

In addition, 53.3% in 1976 and 66.3% in 1986 wanted to graduate from college (four year program); 54.9% in 1976 and 52.9% in 1986 had a B grade average; 51.9% in 1976 and 49.7% in 1986 were Protestant; 39.3% in 1976 and 34.3% in 1986 attended church once a week or more; and 30.5% in 1976 and 32.8% in 1986 considered church pretty important.

Concerning the use of licit or illicit drugs in the last 30 days by high school seniors, the percentages were distributed as follow: 61.2% in 1976 and 70.4% in 1986 have not smoked cigarettes in the last 30 days; 40.7% in
1976 and 39.4% in 1986 have used alcohol in the last 30 days; 67.7% in 1976 and 76.6% in 1986 have not used marihuana/hashish in the last 30 days; 97.7% in 1976 and 98.7% in 1986 have not used other psychedelics in the last 30 days; 98.1% in 1976 and 98.4% in 1986 have not used LSD in the last 30 days; 96.0% in 1976 and 97.9% in 1986 have not used tranquilizers in the last 30 days; 99.1% in 1976 and 97.5% in 1986 have not used inhalants in the last 30 days; 98.0% in 1976 and 93.8% in 1986 have not used cocaine in the last 30 days; 92.3% in 1976 and 94.4% in 1986 have not used amphetamines in the last 30 days; 98.3% in 1976 and 99.2% in 1986 have not used quaaludes in the last 30 days; 96.1% in 1976 and 98.2% in 1986 have not used barbiturates in the last 30 days; 99.8% in 1976 and 99.8% in 1986 have not used heroin in the last 30 days; and finally, 98.0% in 1976 and 98.0% in 1986 have not used other narcotics in the last 30 days.

Analysis of Social Relationships Concerning Drug Use

Introduction

The following section discusses the relationship between the independent variables and the dependent variable in the contingency tables. The specific variables were chosen from among 1,300 variables that were contained in the research instrument, Monitoring the Future,
designed to explore changes in many important values, behaviors, and lifestyle orientations of contemporary American youths. The variables used for the purpose of this study are: demographic variables (race, gender, religion, social activities—out-of-school and with friends—delinquency, self-rated intelligence, and high school performance), and the variable, drug use.

Testing the Hypotheses

The eleven hypotheses called for an investigation of the relationships or differences between the independent variables (demographic, background, and social institutions such as church and school) and the dependent variable, drug use. Below each of the hypotheses will be restated and followed by pertinent data and interpretations.

Hypothesis 1. There is no significant difference between races (white and non-white) and drug use.

Table 11 examines race and drug use for 1976 and 1986. Race is one of the demographic or independent variables that was deemed relevant for cross-tab analysis. The data in this table suggest that, for both years, drug use is more prevalent among whites or Caucasians than among non-whites. In comparing the trend, Table 11 reveals that the percentage of white high school
### Table 11

Cross-tabulation of Race by Drug Use for 1976 and 1986

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>Race</th>
<th>1976</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YES</td>
<td>4010</td>
<td>445</td>
<td>3348</td>
</tr>
<tr>
<td></td>
<td>(34.0)</td>
<td>(25.9)</td>
<td>(28.7)</td>
</tr>
<tr>
<td>NO</td>
<td>7799</td>
<td>1271</td>
<td>8324</td>
</tr>
<tr>
<td></td>
<td>(66.0)</td>
<td>(74.1)</td>
<td>(71.3)</td>
</tr>
<tr>
<td>Totals</td>
<td>11809</td>
<td>1716</td>
<td>11672</td>
</tr>
<tr>
<td></td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

1976:  
Chi-square = 43.480  
df = 1  
P > .05

1986:  
Chi-square = 76.158  
df = 1  
P > .05

Seniors who used drugs decreased markedly (5.3%) from 34.0% in 1976 to 28.7% in 1986. Similarly, the percentage of drug use among non-white seniors decreased even more (7.5%) from 25.9% in 1976 to 18.4% in 1986. The percentage of drug involvement among non-whites declined more than that of their white counterparts, 7.5% and 5.3% respectively.

The chi-square tests for 1976 and 1986 were found to be 43.480 and 76.158, respectively, with 1 degree of freedom.
freedom at the .05 level. An examination of Table 11 shows that there is a significant relationship between the variables. Here, the calculated value of chi-square does not exceed the critical value at .05 level of analysis. Accordingly, there is a significant difference between race and high school seniors' drug use, thus, Hypothesis 1 is rejected.

**Hypothesis 2.** There is no significant difference between gender and drug use.

Table 12 examines gender and its relationship with illegal drug use. Gender is another demographic variable that was considered relevant regarding high school seniors' illegal drug use. As shown in this table, among those who use drugs, males tend to use drugs more than females do. This pattern is similar for 1976 and 1986.

Between 1976 and 1986, the sample of high school seniors surveyed who use drugs decreased from 37.9% to 29.9% for males, and from 28.2% to 24.2% for females, respectively. This is consistent with national trends.

The values of the chi-squares are 154.017 for 1976 and 60.724 for 1986, with 1 degree of freedom for both. For each year, the chi-square value is significant at the .05 level, which means there is a significant relationship between the variables. Therefore, gender can be seen as a factor related to high school seniors' drug use, thus rejecting Hypothesis 2.
Table 12
Cross-tabulation of Gender by Drug Use for 1976 and 1986

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>Gender</th>
<th>1976</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>YES</td>
<td>2748</td>
<td>2044</td>
<td>2156</td>
</tr>
<tr>
<td></td>
<td>(37.9)</td>
<td>(28.2)</td>
<td>(29.9)</td>
</tr>
<tr>
<td>NO</td>
<td>4509</td>
<td>5210</td>
<td>5059</td>
</tr>
<tr>
<td></td>
<td>(62.1)</td>
<td>(71.8)</td>
<td>(70.1)</td>
</tr>
<tr>
<td>Totals</td>
<td>7257</td>
<td>7254</td>
<td>7215</td>
</tr>
<tr>
<td></td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

1976: Chi-square = 154.071, df = 1, P > .05
1986: Chi-square = 60.724, df = 1, P > .05

Hypothesis 3. There is no significant relationship between gender and race, and drug use for 1976 and 1986.

Table 13 examines two of the demographic variables that were considered relevant for cross-tab analysis. Additionally, Table 13 revealed the relationship between the respondent's race and gender and his/her illegal drug use. For 1976 and 1986, the incidence of drug use among white males and white females appears to be greater than that of non-white males and females. However, if we compare trends and pattern of variation in a span of ten years.
Table 13
Cross-tabulation of Gender by Race by Drug Use for 1976 and 1986

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>Race and Gender</th>
<th>1976</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White Males</td>
<td>White Females</td>
<td>Non-White Males</td>
</tr>
<tr>
<td>YES</td>
<td>2269</td>
<td>1673</td>
<td>218</td>
</tr>
<tr>
<td></td>
<td>(38.5)</td>
<td>(29.2)</td>
<td>(30.9)</td>
</tr>
<tr>
<td>NO</td>
<td>3620</td>
<td>4056</td>
<td>488</td>
</tr>
<tr>
<td></td>
<td>(61.5)</td>
<td>(70.8)</td>
<td>(69.1)</td>
</tr>
<tr>
<td>Totals</td>
<td>5888</td>
<td>5729</td>
<td>707</td>
</tr>
<tr>
<td></td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

1976:
White Males/Fem. / Non-White Males/Fem. = 112.639
Chi-square = 112.639
df = 1
P > .05

1986:
White Males/Fem. / Non-White Males/Fem. = 16.434
Chi-square = 16.434
df = 1
P > .05

White Males/Fem. / Non-White Males/Fem. = 23.584
Chi-square = 23.584
df = 1
P > .05

White Males/Fem. / Non-White Males/Fem. = 37.011
Chi-square = 37.011
df = 1
P > .05
years, Table 13 revealed that the percentage of white males who used drugs decreased from 38.5% to 30.8%. The percentage of white females who used drugs decreased from 29.2% in 1976 to 26.7% in 1986. The illegal drug use of non-white female high school seniors also decreased significantly, from 22.1% in 1976 to 13.1% in 1986.

The chi-squares for white males and females and non-white males and females in 1976 and 1986 are 112.639 and 16.434, with 1 degree of freedom, respectively. In addition, the chi-squares for white males/white females and non-white males/non-whites females are 23.584 and 37.011, with 1 degree of freedom, for 1976 and 1986, respectively. The chi-square value is significant at the .05 level. For both years, there is a significant relationship between the variables. Both race and gender are influential factors related to high school seniors' drug use, and therefore, Hypothesis 3 is rejected.

**Hypothesis 4.** There is no significant relationship between the type of self-reported delinquent behavior of students and drug use.

Tables 14 and 15 depict the cross-tabulation between the respondents' level of delinquent involvement such as fighting with parents, with supervisors, or fighting with gangs, stealing less than $50 and stealing more than $50 and their illegal drug use, for 1976 and 1986. These
tables also encompass the frequency of self-reported delinquency of high school seniors and their drug use, as well as the data obtained from a subsample of approximately 3,500 cases from the entire high school senior population.

As shown in Tables 14 and 15, the percentage of students who did not use drugs and who reported that they were not involved with any type of delinquent behavior was 22.4% in 1976, a percentage that increased to 24.1% in 1986. Meanwhile, the percentage of those who never used drugs and were not involved in any type of delinquent behavior, decreased from 8.1% in 1976 to 3.5% in 1986.

Additionally, in 1976, of those who never used drugs, 74.0% were involved with fights with either parents, supervisors, or with gangs, a percentage that decreased slightly to 72.8% in 1986. On the other hand, of those who reported using drugs 40 or more times, 54.8% had fights with either parents, supervisors or gangs in 1976, a percentage that decreased to 47.7% in 1986.

The percentage of those who never used drugs and reported either shoplifting, stealing less than $50, or more than $50, increased slightly from 3.2% in 1976 to 3.3% in 1986. Concerning those who used drugs 40 or more times, the percentage of those stealing increased from 24.3% in 1976 to 34.1% in 1986.
Table 14
Cross-tabulation of Drug Use Level by Type of Delinquency for 1976

<table>
<thead>
<tr>
<th>Delinquency</th>
<th>Drug Level</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 times</td>
<td>1-2 times</td>
<td>3-5 times</td>
<td>6-9 times</td>
<td>10-19 times</td>
<td>20-39 times</td>
<td>40 or more times</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>442 (22.4)</td>
<td>22 (9.8)</td>
<td>22 (12.2)</td>
<td>10 (8.1)</td>
<td>18 (10.3)</td>
<td>7 (4.9)</td>
<td>10 (8.1)</td>
<td></td>
</tr>
<tr>
<td>Fight with Parents</td>
<td>1101 (65.8)</td>
<td>121 (48.3)</td>
<td>76 (42.8)</td>
<td>42 (35.0)</td>
<td>58 (33.3)</td>
<td>42 (29.2)</td>
<td>24 (19.3)</td>
<td></td>
</tr>
<tr>
<td>Fight with Supervisor</td>
<td>240 (12.2)</td>
<td>52 (20.8)</td>
<td>33 (18.1)</td>
<td>24 (20.0)</td>
<td>36 (20.7)</td>
<td>38 (26.4)</td>
<td>19 (15.3)</td>
<td></td>
</tr>
<tr>
<td>Fight with Gangs</td>
<td>119 (6.0)</td>
<td>26 (10.2)</td>
<td>21 (11.5)</td>
<td>20 (16.5)</td>
<td>25 (14.4)</td>
<td>16 (11.1)</td>
<td>25 (20.2)</td>
<td></td>
</tr>
<tr>
<td>Steal Less than $50</td>
<td>37 (1.9)</td>
<td>15 (6.0)</td>
<td>17 (9.5)</td>
<td>8 (7.1)</td>
<td>15 (8.6)</td>
<td>13 (9.0)</td>
<td>11 (8.9)</td>
<td></td>
</tr>
<tr>
<td>Steal More than $50</td>
<td>22 (1.1)</td>
<td>5 (1.9)</td>
<td>5 (2.6)</td>
<td>6 (5.1)</td>
<td>8 (4.6)</td>
<td>9 (6.2)</td>
<td>10 (8.1)</td>
<td></td>
</tr>
<tr>
<td>Shop-lifting</td>
<td>5 (0.2)</td>
<td>3 (1.3)</td>
<td>3 (1.5)</td>
<td>5 (4.6)</td>
<td>3 (1.7)</td>
<td>11 (7.6)</td>
<td>9 (7.3)</td>
<td></td>
</tr>
<tr>
<td>Car theft</td>
<td>4 (0.2)</td>
<td>*</td>
<td>3 (1.8)</td>
<td>2 (1.3)</td>
<td>4 (2.3)</td>
<td>5 (3.5)</td>
<td>6 (4.8)</td>
<td></td>
</tr>
<tr>
<td>Theft of Parts of Cars</td>
<td>2 (0.1)</td>
<td>4 (1.7)</td>
<td>*</td>
<td>3 (2.3)</td>
<td>5 (2.9)</td>
<td>2 (1.4)</td>
<td>4 (3.2)</td>
<td></td>
</tr>
<tr>
<td>Trespassing a Bldg.</td>
<td>*</td>
<td>2 (0.7)</td>
<td>*</td>
<td>*</td>
<td>1 (0.6)</td>
<td>*</td>
<td>3 (2.4)</td>
<td></td>
</tr>
<tr>
<td>Arson</td>
<td>2 (0.1)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>1 (0.6)</td>
<td>1 (0.7)</td>
<td>2 (1.6)</td>
<td></td>
</tr>
<tr>
<td>School Damage</td>
<td>1 (0.0)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Work Damage</td>
<td>*</td>
<td>1 (0.2)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Trouble with Police</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>1 (0.8)</td>
<td></td>
</tr>
</tbody>
</table>

Totals: 1975 (100) 251 (100) 182 (100) 120 (100) 174 (100) 144 (100) 124 (100)

* No Answer  Chi-square = 633.916  df = 78  P > .05
Table 15
Cross-tabulation of Drug Use Level by Types of Delinquency for 1986

<table>
<thead>
<tr>
<th>Delinquency</th>
<th>Drug Level</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 times</td>
<td>1-2 times</td>
<td>3-5 times</td>
<td>6-9 times</td>
<td>10-19 times</td>
<td>20-39 times</td>
<td>40 or more times</td>
<td>Don't Know</td>
</tr>
<tr>
<td>None</td>
<td>251 (24.1)</td>
<td>287 (59.2)</td>
<td>539 (83.4)</td>
<td>792 (62.7)</td>
<td>583 (36.9)</td>
<td>8 (9.7)</td>
<td>1 (3.5)</td>
<td>1145 (30.5)</td>
</tr>
<tr>
<td>Fight with Parents</td>
<td>584 (56.0)</td>
<td>146 (30.1)</td>
<td>28 (4.3)</td>
<td>93 (7.4)</td>
<td>117 (7.4)</td>
<td>59 (72.1)</td>
<td>11 (30.9)</td>
<td>2164 (57.1)</td>
</tr>
<tr>
<td>Fight with Supervisor</td>
<td>121 (11.7)</td>
<td>33 (6.7)</td>
<td>5 (0.8)</td>
<td>54 (4.3)</td>
<td>47 (3.0)</td>
<td>12 (14.2)</td>
<td>5 (15.1)</td>
<td>343 (9.1)</td>
</tr>
<tr>
<td>Fight with Gangs</td>
<td>51 (4.9)</td>
<td>8 (1.6)</td>
<td>12 (1.9)</td>
<td>30 (2.4)</td>
<td>26 (1.7)</td>
<td>*</td>
<td>1 (1.7)</td>
<td>54 (1.4)</td>
</tr>
<tr>
<td>Steal Less than $50</td>
<td>22 (2.1)</td>
<td>6 (1.2)</td>
<td>3 (0.5)</td>
<td>26 (2.0)</td>
<td>48 (3.0)</td>
<td>*</td>
<td>10 (28.9)</td>
<td>59 (1.6)</td>
</tr>
<tr>
<td>Steal More than $50</td>
<td>10 (1.0)</td>
<td>2 (0.3)</td>
<td>18 (2.8)</td>
<td>69 (5.5)</td>
<td>184 (11.6)</td>
<td>1 (0.7)</td>
<td>1 (3.5)</td>
<td>11 (0.3)</td>
</tr>
<tr>
<td>Shop-lifting</td>
<td>2 (0.2)</td>
<td>3 (0.6)</td>
<td>10 (1.6)</td>
<td>92 (7.3)</td>
<td>274 (17.4)</td>
<td>*</td>
<td>1 (1.7)</td>
<td>*</td>
</tr>
<tr>
<td>Car theft</td>
<td>*</td>
<td>*</td>
<td>16 (2.5)</td>
<td>61 (4.9)</td>
<td>202 (12.8)</td>
<td>1 (1.5)</td>
<td>5 (13.8)</td>
<td>10 (0.3)</td>
</tr>
<tr>
<td>Theft of Parts of Cars</td>
<td>*</td>
<td>*</td>
<td>14 (2.1)</td>
<td>18 (1.4)</td>
<td>76 (4.8)</td>
<td>1 (1.1)</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Trespassing a Bldg.</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>29 (2.3)</td>
<td>21 (1.3)</td>
<td>*</td>
<td>1 (1.7)</td>
<td>*</td>
</tr>
<tr>
<td>Arson</td>
<td>*</td>
<td>1 (0.2)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>School Damage</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Work Damage</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Trouble with Police</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Totals</td>
<td>1042 (100)</td>
<td>486 (100)</td>
<td>646 (100)</td>
<td>1264 (100)</td>
<td>1580 (100)</td>
<td>82 (100)</td>
<td>35 (100)</td>
<td>3786 (100)</td>
</tr>
</tbody>
</table>

* No Answer ** No Data Available Chi-square = 4860.850 df = 78 P > .05
As revealed in the two tables, surprisingly, in 1976 and 1986 a greater percentage of those who reported they had not used drugs, 65.8% and 56% respectively, reported fighting with parents more than those who reported their incidence of drug use to be among 1 to 40 times or more in the last 30 days, 19.3% and 30.9% respectively. Note that, of those who use drugs 20-39 times in the last 30 days, 72.1% reported fights with parents in 1986. Another important point that cannot be left without mention is that, in 1986, a greater percentage of high school seniors who reported having used drugs 3-5 times (71.0% increase), 6-9 times (54.6% increase), or 10-19 times (26.6%), reported not being involved in any kind of delinquent behavior.

The chi-square tests of significance for 1976 and 1986 were found to be 633.916 and 4860.850, with 78 and 70 degrees of freedom, respectively. The chi-square value is significant at the .05 level. Tables 14 and 15 show that for both years there is a significant relationship between the variables of delinquency and drug use. Here, the calculated value of chi-square does not exceed the critical value at the .05 level, therefore, delinquent acts can be seen as influential factors related to high school seniors' drug use; consequently Hypothesis 4 is rejected.
Hypothesis 5. There is no significant relationship between parents' levels of education and students' drug use.

Table 16 examines the variables, father's educational level and drug use, for 1976 and 1986. Fathers' education is an independent variable and is considered a strong predictor of drug use.

As depicted in Table 16, in 1976 and 1986, there seems to be no relationship between fathers' educational levels and senior students' drug use. Of those who reported drug use, roughly, 35.0% in 1976 and 27.3% in 1986 had parents who had completed college, graduate or professional school, compared with 33.4% in 1976 and 25.4% in 1986 for those student drug users whose father had completed some high school or less.

Additionally, of those students who used drugs, in 1976, 33.4% had fathers who had some high school or less, while in 1986 the percentage decreased to 25.4%. Moreover, in 1976, 35.0% had fathers who had completed college or graduate or professional school; this percentage decreased also to 27.3% in 1986.

The chi-square tests, for 1976 and 1986, are found to be 10.784 and 5.861, respectively, with 3 degrees of freedom for both. The chi-square value is significant at the .05 level. Table 16 shows that there is a relationship between the variables for 1976 while no relationship
Table 16
Cross-tabulation of Father's Education by Drug Use for 1976 and 1986

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>Father's Education</th>
<th>1976</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Some High School or Less</td>
<td>High School or some College</td>
<td>Completed College or Grad. or Prof. Sch.</td>
</tr>
<tr>
<td>YES</td>
<td>1100 (33.4)</td>
<td>1728 (33.1)</td>
<td>947 (35.0)</td>
</tr>
<tr>
<td>NO</td>
<td>2192 (66.6)</td>
<td>3489 (66.9)</td>
<td>1757 (65.0)</td>
</tr>
<tr>
<td>Totals</td>
<td>3293 (100)</td>
<td>5217 (100)</td>
<td>2704 (100)</td>
</tr>
</tbody>
</table>

1976: Chi-square = 10.784  
df = 3  
P > .05

1986: Chi-square = 5.861  
df = 3  
P < .05
was found between the variables for 1986. Here, for 1986, the calculated value of chi-square does not exceed the critical value at the .05 level. Therefore, in 1976 the father's educational level can be seen as an influential factor related to students' involvement in drug use while not for those surveyed in 1986.

Table 17 examines the variables, mother's educational level and students' drug use, for 1976 and 1986. Mothers' educational level is another independent variable and considered a strong predictor. It should be emphasized that the mothers' and fathers' educational levels have been studied individually since that is how the parent's educational level was presented in the original data.

Concerning the father's education, Table 16 suggests no relationships between the respondent's father's level of education and the respondent's drug use. Similarly, as depicted in Table 17, in 1976 and 1986, there seems to be no relationship between mothers' educational levels and senior students' reported drug use. Roughly 32.0% in 1976 and 26.7% in 1986 of those whose mother had completed college, graduate or professional school reported drug use, compared with 31.8% in 1976 and 25.8% in 1986 whose father had completed some high school or less. In addition, in 1976, 31.8% of those high school seniors who used drugs had mothers who had some high school or less,
### Table 17
Cross-tabulation of Mother’s Education by Drug Use for 1976 and 1986

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>1976</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Some High School or Less</td>
<td>High School or Some College</td>
</tr>
<tr>
<td>YES</td>
<td>903 (31.8)</td>
<td>2344 (34.5)</td>
</tr>
<tr>
<td>NO</td>
<td>1934 (68.2)</td>
<td>4442 (65.5)</td>
</tr>
<tr>
<td>Totals</td>
<td>2837 (100)</td>
<td>6786 (100)</td>
</tr>
</tbody>
</table>

1976: Chi-square = 15.851  
df = 3  
P > .05

1986: Chi-square = 6.572  
df = 3  
P < .05
a percentage that decreased to 25.8% in 1986. Likewise, for those who used drugs, 32.8% had mothers who had completed college or graduate or professional school in 1976, decreasing to 26.7% in 1986.

The chi-square tests, for 1976 and 1986, are found to be 15.851 and 6.572, respectively, with 3 degrees of freedom for both. The chi-square value is significant at the .05 level. Table 17 shows that there is a significant relationship between the variables for 1976 while there is no relationship between the variables for 1986. Here, for 1986, the calculated value of chi-square does not exceed the critical value at the .05 level. Therefore, in 1976 mothers' educational levels can be seen as significantly related to senior students' drug use while not for those surveyed in 1986. Considering the results depicted in Tables 16 and 17, for 1976, Hypothesis 5 is rejected, while for 1986 it is retained.

Hypothesis 6. There is no significant relationship between academic achievement and students' drug use.

Table 18 reveals the respondents' high school grade average and their drug use. As displayed in Table 18, for 1976, 49.5% of those senior students who reported drug use reported a grade average of D, while 20.9% of those students who reported having a grade average of A did so. In 1986, among those who reported drug use,
<table>
<thead>
<tr>
<th>Drug Use</th>
<th>1976</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A (100-90)</td>
<td>B (89-80)</td>
</tr>
<tr>
<td>YES</td>
<td>584 (20.9)</td>
<td>2558 (32.4)</td>
</tr>
<tr>
<td>NO</td>
<td>2209 (79.1)</td>
<td>5342 (67.6)</td>
</tr>
<tr>
<td>Totals</td>
<td>2793 (100)</td>
<td>7901 (100)</td>
</tr>
</tbody>
</table>

1976:
Chi-square = 348.900
df = 3
P > .05

1986:
Chi-square = 350.293
df = 3
P > .05
44.5% had a grade average of D, while just 15.7% of those who reported having a grade average of A used drugs.

Table 18 reveals that in 1976, 20.9% of the high school seniors who reported having an A average also used drugs, a percentage that decreased to 15.7% in 1986. Likewise, of those who reported a D average, 49.5% used drugs in 1976, while 44.5% did so in 1986.

In summary, it can be stated that those senior students who reported no drug use tend to have a higher grade average than those who do. This seems to be true for both years studied.

The chi-square tests for 1976 and 1986 are found to be 348.900 and 350.293, respectively, both with 3 degrees of freedom. The chi-square value is significant at the .05 level, which means that there is a significant relationship between the variables for 1976 and 1986. Therefore, the grade average of senior students is related to the respondents' drug use; thus Hypothesis 6 is rejected.

**Hypothesis 7.** There is no significant relationship between importance placed on religion and students' academic achievement and drug use.

Tables 19 and 20 represent the cross-tabulation between the respondents' grade average, religious importance and illicit drug use.
Table 19
Cross-tabulation of Drug Use Controlling for
the Importance of Religion by Grade for 1976

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>A (100-90)</th>
<th>B (89-80)</th>
<th>C (79-70)</th>
<th>D (69 and below)</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>132 (38.1)</td>
<td>176 (20.6)</td>
<td>477 (48.8)</td>
<td>887 (42.0)</td>
</tr>
<tr>
<td></td>
<td>162 (27.2)</td>
<td>113 (11.5)</td>
<td>887 (42.0)</td>
<td>477 (31.7)</td>
</tr>
<tr>
<td>NO</td>
<td>214 (61.9)</td>
<td>433 (72.8)</td>
<td>679 (86.8)</td>
<td>501 (51.2)</td>
</tr>
<tr>
<td></td>
<td>433 (72.8)</td>
<td>679 (86.8)</td>
<td>501 (51.2)</td>
<td>1226 (58.0)</td>
</tr>
<tr>
<td>Totals</td>
<td>346 (100)</td>
<td>595 (100)</td>
<td>854 (100)</td>
<td>981 (100)</td>
</tr>
</tbody>
</table>

A:
Chi-square = 128.360  
df = 3  
P > .05

B:
Chi-square = 453.694  
df = 3  
P > .05

C:
Chi-square = 181.262  
df = 3  
P > .05

D:
Chi-square = 0.2925  
df = 3  
P < .05
Table 20
Cross-tabulation of Drug Use Controlling for the Importance of Religion by Grade for 1986

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>A (100-90)</th>
<th>B (89-80)</th>
<th>C (79-70)</th>
<th>D (69 and below)</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>93 (27.5)</td>
<td>124 (20.5)</td>
<td>143 (16.5)</td>
<td>66 (7.3)</td>
</tr>
<tr>
<td>NO</td>
<td>246 (72.5)</td>
<td>478 (79.5)</td>
<td>725 (83.5)</td>
<td>938 (92.7)</td>
</tr>
<tr>
<td>Totals</td>
<td>339 (100)</td>
<td>602 (100)</td>
<td>857 (100)</td>
<td>904 (100)</td>
</tr>
</tbody>
</table>

A: Chi-square = 94.458
   df = 3
   P > .05

B: Chi-square = 243.842
   df = 3
   P > .05

C: Chi-square = 121.878
   df = 3
   P > .05

D: Chi-square = 8.839
   df = 3
   P > .05
In 1976, 38.1% of high school seniors who used drugs reported having an A average in their academic work, and also reported religion as not important—a percentage that decreased markedly (10.6%) in 1986 to 27.5%. Additionally, the percentage of those who used drugs, reported having an A average, and who saw religion as very important, decreased from 11.5% in 1976 to 7.3% in 1986. Concerning those students who reported a D average in their academic work and saw religion as not important, the percentage of those who used drugs increased significantly from 51.3% in 1976 to 66.1% in 1986. The percentage decreased markedly (10.4%) for those who saw religion as very important, used drugs, and had a D average, from 47.3% in 1976 to 36.9% in 1986.

Additionally, in 1976, 48.8% of high school seniors used drugs and reported having a B average in their academic work; that percentage decreased markedly (12.2%) in 1986 to 36.6%. The percentage of those who used drugs, reported having a B average, and saw religion as very important decreased from 17.0% in 1976 to 14.2% in 1986, whereas, the percentage of those who used drugs, reported a C average in their academic work, and saw religion as not important, decreased significantly (12.2%) from 56.1% in 1976 to 43.9% in 1986. The percentage of those who saw religion as "very important," used drugs, and had a C
average also decreased from 25.1% in 1976 to 21.3% in 1986.

In summary, as seen in Table 19 and Table 20, those who considered church "pretty important" or "very important" and achieved well academically had a lower incidence of drug use than those who had a C and D grade average and considered church as "not important" and/or "a little important." This pattern is revealed in both years, 1976 and 1986.

The chi-square tests for 1976 and 1986 are found to be 128.360 and 453.694, respectively, both with 3 degrees of freedom. The chi-square value is significant at the .05 level. Therefore, the perception high school seniors have about religion and their school performance can be seen as related to drug use. Thus, according to the findings, Hypothesis 7 is also rejected.

Hypothesis 8. There is no significant relationship between the level of self-esteem and student involvement in drug use.

Tables 21 and 22 show the cross-tabulation between the respondents' self-rating of intelligence and their involvement in illegal drug use for 1976 and 1986. They also show the relationship between the self-rating of intelligence of high school seniors and their drug use.
Table 21

Cross-tabulation of Self-rating of Intelligence by Drug Use for 1976

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>Far Below Average</th>
<th>Below Average</th>
<th>Slightly Below Average</th>
<th>Average</th>
<th>Slightly Above Average</th>
<th>Above Average</th>
<th>Far Above Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>6</td>
<td>5</td>
<td>31</td>
<td>384</td>
<td>204</td>
<td>264</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>(38.0)</td>
<td>(20.0)</td>
<td>(32.6)</td>
<td>(34.7)</td>
<td>(30.8)</td>
<td>(33.6)</td>
<td>(26.0)</td>
</tr>
<tr>
<td>NO</td>
<td>9</td>
<td>22</td>
<td>64</td>
<td>723</td>
<td>459</td>
<td>522</td>
<td>137</td>
</tr>
<tr>
<td></td>
<td>(62.0)</td>
<td>(80.0)</td>
<td>(67.4)</td>
<td>(65.3)</td>
<td>(69.2)</td>
<td>(66.4)</td>
<td>(74.0)</td>
</tr>
<tr>
<td>Totals</td>
<td>15</td>
<td>27</td>
<td>95</td>
<td>1107</td>
<td>683</td>
<td>785</td>
<td>185</td>
</tr>
<tr>
<td></td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

Chi-square = 9.400    df = 6    P < .05
Table 22
Cross-tabulation of Self-rating of Intelligence by Drug Use
for 1986

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>Far Below Average</th>
<th>Below Average</th>
<th>Slightly Below Average</th>
<th>Average</th>
<th>Slightly Above Average</th>
<th>Above Average</th>
<th>Far Above Average</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YES</strong></td>
<td>1039</td>
<td>771</td>
<td>752</td>
<td>384</td>
<td>138</td>
<td>46</td>
<td>9</td>
<td>206</td>
</tr>
<tr>
<td></td>
<td>(99.6)</td>
<td>(99.6)</td>
<td>(97.9)</td>
<td>(72.3)</td>
<td>(58.3)</td>
<td>(24.7)</td>
<td>(25.6)</td>
<td>(100)</td>
</tr>
<tr>
<td><strong>NO</strong></td>
<td>5</td>
<td>3</td>
<td>16</td>
<td>147</td>
<td>99</td>
<td>139</td>
<td>26</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>(0.4)</td>
<td>(0.4)</td>
<td>(2.1)</td>
<td>(27.7)</td>
<td>(41.7)</td>
<td>(75.3)</td>
<td>(74.4)</td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>1044</td>
<td>774</td>
<td>768</td>
<td>531</td>
<td>237</td>
<td>185</td>
<td>35</td>
<td>206</td>
</tr>
<tr>
<td></td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

* No Answer  
Chi-square = 1535.785  
df = 7  
P > .05
It should be noted that these tables consist of data obtained from a subsample of approximately 3,500 cases, and not the entire sample population of seniors.

In terms of the self-rating of intelligence and drug use, while only 38.0% of high school seniors rated themselves far below average and used drugs in 1976, the percentage increased significantly to 99.6% in 1986. The percentages of those who rated themselves far above average and used drugs remained practically the same for both years: 26.0% in 1976 and 25.6% in 1986. However, in 1976, of those who rated themselves to be average, 34.7% used drugs, a percentage that increased significantly in 1986 to 72.3%. Moreover, the greater percentage of those students who considered themselves to be from average to far above average, by far, did not report using drugs. This was found as a common characteristic or pattern of use for both years. The chi-square value is significant at the .05 level. Tables 21 and 22 show that for 1976 there is no significant relationship between the variables. Here the calculated value of chi-square exceeds the critical value at the .05 level. For 1986, however, there is a significant relationship between the variables. Therefore, self-perception of intelligence can be seen as related to students' drug use in 1986. For 1976, Hypothesis 8 is retained, while for 1986 it is rejected.
Hypothesis 9. There is no significant relationship between the amount of time spent by students in extracurricular activities and drug use.

Table 23 shows the cross-tabulation between the respondents' pattern of interaction in out-of-school activities and illegal drug use for 1976 and 1986. Again, this table consists of data obtained from a subsample of approximately 3,500 cases from the entire sample population of high school seniors.

Table 23 displays a significant relationship between the out-of-school activities, or activities that take place during spare time—watching television, going to movies, attending art shows, among others—and their drug use. Surprisingly, from 1976 to 1986, the percentage of high school seniors who used drugs and who reported that they never spent time in out-of-school activities increased significantly from 37.5% to 91.2%, respectively. The percentage who used drugs and reported spending time in out-of-school activities almost every day also increased significantly, from 32.2% in 1976 to 79.7% in 1986.

However, from 1976 to 1986, the percentage of high school seniors who did not use drugs but spent time in out-of-school activities almost every day decreased dramatically from 67.8% in 1976 to 20.8% in 1986. This particular pattern of variation is displayed in Table 23.
Table 23
Cross-tabulation of Out-of-School Activities by Drug Use for 1976 and 1986

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>1976</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
<td>A few times a year</td>
</tr>
<tr>
<td>YES</td>
<td>4 (37.5)</td>
<td>8 (21.3)</td>
</tr>
<tr>
<td>NO</td>
<td>6 (62.5)</td>
<td>30 (78.7)</td>
</tr>
<tr>
<td>Totals</td>
<td>10 (100)</td>
<td>38 (100)</td>
</tr>
</tbody>
</table>

1976:
Chi-square = 5.023
df = 4
P < .05

1986:
Chi-square = 153.696
df = 4
P > .05
for almost all categories. On the other hand, the number of students who used drugs and spent time in out-of-school activities increased dramatically in the ten-year span. Thus, a significant relationship between the out-of-school activities and student drug use was found.

The chi-square tests, for 1976 and 1986 are found to be 5.023 and 153.696, with 4 degrees of freedom, respectively. The chi-square value is significant at the .05 level. Table 23 shows that, for 1976, there is no significant relationship between the variables; for 1986, however, there seems to a significant relationship between these same variables. Therefore, the amount of time spent on out-of-school activities can be seen as related to senior students' drug use in 1986.

Table 24 reveals the cross-tabulation between the respondents' hours of work a week, and illicit drug involvement. This table shows the relative frequency of hours worked in a one-week period by high school seniors and their involvement in drug use. Again, this table consists of data obtained from a subsample of approximately 3,500 cases.

As depicted in Table 24, of those high school seniors who used drugs in 1976, 30.0% worked 1-5 or fewer hours a week, a percentage that rose significantly to 92.5% in 1986. Moreover, of those who worked 30 or more hours per week, 44.1% used drugs in 1976, decreasing to
Table 24
Cross-tabulation of Hours of Work by Drug Use
for 1976 and 1986

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>1976</th>
<th></th>
<th>1986</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-5 hrs. or less</td>
<td>6-20 hrs.</td>
<td>21-30 hrs.</td>
<td>30 hrs. or more</td>
</tr>
<tr>
<td>YES</td>
<td>318 (30.0)</td>
<td>291 (29.6)</td>
<td>200 (38.1)</td>
<td>126 (44.1)</td>
</tr>
<tr>
<td>NO</td>
<td>741 (70.0)</td>
<td>693 (70.4)</td>
<td>324 (61.9)</td>
<td>160 (55.9)</td>
</tr>
<tr>
<td>Totals</td>
<td>1059 (100)</td>
<td>984 (100)</td>
<td>524 (100)</td>
<td>286 (100)</td>
</tr>
</tbody>
</table>

1976: Chi-square = 31.749
       df = 3
       P > .05

1986: Chi-square = 489.994
       df = 3
       P > .05
30.5% in 1986.

There is also a significant increase among those who used drugs and worked 6-20 hours a week, from 29.6% in 1976 to 88.9%, in 1986. On the other hand, the number of those senior students who did not use drugs and worked 6-20 hours decreased from 70.4% in 1976 to 11.1% in 1986. In summary, it can be stated that the incidence of drug use among those students who worked 21-30 hours or more is by far lower than that from those who reportedly worked 1-5 hours or less.

The chi-square for 1976 and 1986 are 31.747 and 489.994, with 3 degrees of freedom, respectively. The chi-square value is significant at the .05 level. Therefore, the amount of hours spent at work each week can be seen as related to senior students' drug use. Thus, the findings indicate that for both years, Hypothesis 9 should be rejected.

Hypothesis 10. There is no significant relationship between attachment to social institutions such as school, church, work, family and drug use.

Table 25 reveals the cross-tabulation between the respondents' school attendance and drug use. Again, this table consists of data obtained from a subsample of approximately 3,500 cases, and it allows one to examine the relative frequency of school-days missed by high school
Table 25
Cross-tabulation of School Absences by Drug Use
for 1976 and 1986

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>School Absences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1976</td>
</tr>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td>YES</td>
<td>431</td>
</tr>
<tr>
<td></td>
<td>(23.0)</td>
</tr>
<tr>
<td>NO</td>
<td>1440</td>
</tr>
<tr>
<td></td>
<td>(77.0)</td>
</tr>
<tr>
<td>Totals</td>
<td>1871</td>
</tr>
<tr>
<td></td>
<td>(100)</td>
</tr>
</tbody>
</table>

1976:
Chi-square = 317.657
df = 6
P > .05

1986:
Chi-square = 676.909
df = 7
P > .05
seniors and their drug use.

As depicted in Table 25, in 1976, the percentage of high school seniors who used drugs and had not missed a day of school in the last four weeks was 23%, increasing significantly to 66.6% in 1986. Thus, it can be stated that drug use by high school seniors interfered much less in 1986 than in 1976 with their school attendance. In addition, the percentage of those who used drugs and missed 11 or more days of school increased slightly from 1976 to 1986, 58.7% and 60.0% respectively. Interestingly, in 1976, 72.5% of those who used drugs missed 6-10 school days, dropping significantly to 23.1% in 1986.

Table 25 showed that, by-and-large, those students who are less attached to school also tend to be involved with drug use, whereas, senior students who do not engage in drug use tend to skip less school than those who reported using drugs in the last 30 days. This pattern seems to be the same for 1976 and 1986.

The chi-square tests for both years are 317.657 and 676.909, with 6 and 7 degrees of freedom, respectively. The chi-square value is significant at the .05 level. Therefore, school attendance can be seen as related to the respondent's drug use.

Table 26 shows the cross-tabulation between the respondents' pattern of interaction and/or activities with friends (peers) and their illegal drug involvement,
Table 26

Cross-tabulation of Time Spent with Friends by Drug Use for 1976 and 1986

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>1976</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
<td>A few times a year</td>
</tr>
<tr>
<td>YES</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>(32.9)</td>
<td>(17.5)</td>
</tr>
<tr>
<td>NO</td>
<td>14</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>(67.1)</td>
<td>(82.7)</td>
</tr>
<tr>
<td>Totals</td>
<td>21</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>(100)</td>
<td>(100)</td>
</tr>
</tbody>
</table>

1976:
Chi-square = 126.811
df = 4
P > .05

1986:
Chi-square = 482.216
df = 4
P > .05
for 1976 and 1986. It examines the cross-tabulation of senior students' drug use and time spent with friends.

Table 26 reveals that, for 1976, a higher percentage of those high school seniors who do not use drugs reported spending time, "a few times a year," with friends than in 1986. Nonetheless, the greater the number of times they went out with friends, also correlated with use of drugs in both periods. This pattern of use seems to be just the opposite when we compared it to that for 1986. There (1986) seems to be a slight relationship between the variables friends and drug use.

Table 26 shows that, for 1986, 83.1% of high school seniors that reported using drugs spent time with friends "a few times a year." Most seniors who reported going out with friends "once or twice a month," "at least once a week" or "almost every day," did not report using drugs: 24.0%, 22.2%, and 21.8% respectively.

Surprisingly, the percentage of high school seniors who used drugs and "never" spent time with friends increased dramatically from 32.9% in 1976 to 99.8% in 1986. In addition, in 1976, 41.3% of high school seniors reported spending time with friends "almost every day" and using drugs, a percentage that increased dramatically to 78.2% in 1986.

The chi-square tests for both years are 126.811 and 482.216, with 4 degrees of freedom, respectively. Table
26 shows that, for 1976 and 1986, there is a significant relationship between the variables. Here, the calculated values of chi-square do not exceed the critical value at the .05 level. Therefore, the amount of time spent with friends can be seen as related to high school seniors' drug use.

Tables 27 and 28 depict the cross-tabulation between the students' church attendance, academic achievement, and their involvement in drug use for both years.

In examining Tables 27 and 28, it is evident that religious attendance and academic achievement have a relationship to those high school seniors who tend to get involved with drugs. The percentage of high school seniors who reported having an A average in their academic work, using drugs, and never attend church, decreased from 37.2% in 1976 to 25.4% in 1986. Those who reported attending church about once a week or more and used drugs also decreased from 12.9% in 1976 to 10.1% in 1986.

As seen in Tables 27 and 28, the percentage of those drug users who reported never attending church and having a D average decreased markedly from 61.8% in 1976 to 42.9% in 1986. The percentage of those who attended church about once a week or more increased from 26.1% in 1976 to 36.0% in 1986.
Table 27
Cross-tabulation of Church Attendance by Academic Achievement
by Drug Use for 1976

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>A (100-90)</th>
<th>B (89-80)</th>
<th>C (79-70)</th>
<th>D (69 and below)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
<td>Rarely</td>
<td>Once or About</td>
<td>A-Chi-square</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Twice a Month</td>
<td>df = 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>About Once a Week or More</td>
<td>P &gt; 0.05</td>
</tr>
<tr>
<td>YES</td>
<td>94 (37.2)</td>
<td>195 (27.7)</td>
<td>116 (12.9)</td>
<td>359 (46.3)</td>
</tr>
<tr>
<td>NO</td>
<td>159 (62.8)</td>
<td>508 (72.3)</td>
<td>345 (74.8)</td>
<td>1183 (87.1)</td>
</tr>
<tr>
<td>Totals</td>
<td>253 (100)</td>
<td>703 (100)</td>
<td>662 (100)</td>
<td>1359 (100)</td>
</tr>
</tbody>
</table>

* No Answer

A: Chi-square = 17.457  
B: Chi-square = 352.074  
C: Chi-square = 144.693  
D: Chi-square = 12.440
Table 28
Cross-tabulation of Church Attendance by Academic Achievement by Drug Use for 1986

<table>
<thead>
<tr>
<th>Academic Achievement by Church Attendance</th>
<th>A (100-90)</th>
<th>B (89-80)</th>
<th>C (79-70)</th>
<th>D (69 and below)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Once or Twice a Month</td>
<td>Never</td>
<td>Rarely</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Week or More</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YES</td>
<td>68 (25.4)</td>
<td>157 (21.0)</td>
<td>73 (17.4)</td>
<td>128 (10.1)</td>
</tr>
<tr>
<td>NO</td>
<td>200 (74.6)</td>
<td>588 (79.0)</td>
<td>349 (82.6)</td>
<td>1145 (89.9)</td>
</tr>
<tr>
<td>Totals</td>
<td>269 (100)</td>
<td>745 (100)</td>
<td>423 (100)</td>
<td>1273 (100)</td>
</tr>
</tbody>
</table>

* No Answer

A: Chi-square = 66.010  df = 3  P > .05
B: Chi-square = 239.291  df = 3  P > .05
C: Chi-square = 81.395  df = 3  P > .05
D: Chi-square = 3.286  df = 3  P < .05

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In examining the relationship between church attendance, academic achievement and drug use, we can see that, in 1976, those students who had an A grade average and who were more committed to church also did not use drugs. According to the findings, the majority of those students with an A grade average and who never attended church were less involved in drug use. Further, the majority of those students who reported a D grade average and never or rarely went to church reported using drugs. Additionally, as depicted in Tables 27 and 28, those students who reported a D grade average but attended church more often were not involved in the use of drugs. A similar pattern and/or relationship was also found concerning those high school seniors who reported a B or C grade average, church attendance, no attendance and use or non-use of drugs in 1976, with the exception of those with a C grade average and that "rarely" went to church.

Concerning 1986, Table 28 shows that a great percentage of those students who reported having an A grade average and who attended church more often, or who were more committed to church did not use drugs. On the other hand, a greater percentage of those seniors who reported having a D grade average and never or rarely attended church reported not using drugs. Interestingly, the majority of those students who reported having a D grade average but more committed to church did not use drugs at
the time they were surveyed, with the exception of those who reported attending church "once or twice a month."
For all four grade categories (A, B, C, and D), a similar pattern was found for 1976 and 1986.

The chi-squares for 1976 are as follows: for A (100-90) 17.457, B (89-80) 352.074, C (79-70) 144.693, and D (69 and below) 12.440, with 3 degrees of freedom for each. For 1986, the chi-squares are as follows: A (100-90) 66.010, B (89-80) 239.291, C (79-70) 81.395, and D (69 and below) 3.286, with 3 degrees of freedom for all. In all instances, with one exception, the chi-square value is significant at the .05 level. Therefore, both academic achievement and church attendance can be seen as related to drug use among high school seniors. The exception, for 1986 was for the grade D, where the calculated chi-square value does exceed the critical value at the .05 level, thus D grade average showed no relationship between the variables. According to the findings, however, Hypothesis 10 is rejected for 1976 and 1986 because we found a significant relationship between attachment to social institutions such as school, church, work, family, and drug use.

**Hypothesis 11.** There is no significant relationship between the frequency of church attendance and drug use.
Tables 29 and 30 provide for an examination of the relationship of high school seniors' church attendance and their involvement with drugs. It must be emphasized, however, that throughout this research and particularly throughout this section, the chi-square test is being used for heuristic purposes only, and not as a technique to infer or generalize back to the population from which the sample has been drawn.

In examining Tables 29 and 30, we found that from 1976 to 1986 the percentage of high school seniors who never attended church and who used drugs decreased significantly from 47.7% to 37.0%. In addition, the percentage of those who used drugs and attended church about once a week or more decreased markedly (4.4%) from 21.1% in 1976 to 16.7% in 1986.

A marked increase (9.7%) was found among those students who reported never going to church nor using drugs from 1976 to 1986--52.3% compared to 63.0%, respectively. Among those students who attended church about once a week or more but did not report using drugs, there is a slight increase from 78.9% in 1976 to 83.3% of the cases in 1986. In summary, as revealed by the tables, the more frequently students attended church, the less frequently they used drugs.

The chi-squares for 1976 and 1986 are 740.729 and 478.170, respectively, with 3 degrees of freedom. The
Table 29
Cross-tabulation of Church Attendance by Drug Use for 1976

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>Never</th>
<th>Rarely</th>
<th>Once or Twice a Month</th>
<th>About Once a Week or More</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>758 (47.7)</td>
<td>2000 (42.8)</td>
<td>818 (34.2)</td>
<td>1256 (21.1)</td>
</tr>
<tr>
<td>NO</td>
<td>832 (52.3)</td>
<td>2669 (57.2)</td>
<td>1571 (65.8)</td>
<td>4699 (78.9)</td>
</tr>
<tr>
<td>Totals</td>
<td>1590 (100)</td>
<td>4670 (100)</td>
<td>2389 (100)</td>
<td>5955 (100)</td>
</tr>
</tbody>
</table>

Chi-square = 740.729 df = 3 P > .05

Table 30
Cross-tabulation of Church Attendance by Drug Use for 1986

<table>
<thead>
<tr>
<th>Drug Use</th>
<th>Never</th>
<th>Rarely</th>
<th>Once or Twice a Month</th>
<th>About Once a Week or More</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>677 (37.0)</td>
<td>1845 (33.0)</td>
<td>703 (27.5)</td>
<td>866 (16.7)</td>
</tr>
<tr>
<td>NO</td>
<td>1153 (63.0)</td>
<td>3741 (67.0)</td>
<td>1851 (72.5)</td>
<td>4334 (83.3)</td>
</tr>
<tr>
<td>Totals</td>
<td>1829 (100)</td>
<td>5586 (100)</td>
<td>2554 (100)</td>
<td>5201 (100)</td>
</tr>
</tbody>
</table>

Chi-square = 478.170 df = 3 P > .05
chi-square value is significant at the .05 level. Therefore, Hypothesis 11 must be rejected because the frequency of church attendance can be seen as related to high school seniors' drug use.

Examining the Social Influences on the Involvement in Drug Use

In examining the various statistical outcomes, summarized in Table 31, it can be seen clearly that only a few variables were found to be not significantly related with drug use among high school seniors. These variables were father's and mother's education for 1986 (Table 16 and Table 17), students who reported a D grade average for 1976 (Table 19), the variable "out-of-school activities" for 1976 (Table 23), and the self-rating of intelligence for 1976 (Table 21). In addition, Table 31 reveals whether the hypotheses were retained or rejected, a topic further discussed in Chapter V.

While a majority of the demographic, background, and structural variables investigated were significantly associated with high school seniors' drug use, there were some relationships in other areas which were not significant. The independent variables that were related to high school seniors' drug use were: church attendance, the importance of religion, race, gender, parents' educational level for 1976, academic achievement of students,
<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>1976</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chi-Square</td>
<td>P</td>
</tr>
<tr>
<td>Hi 1 - Table 11</td>
<td>43.480</td>
<td>P &gt; .05</td>
</tr>
<tr>
<td>Hi 2 - Table 12</td>
<td>154.071</td>
<td>P &gt; .05</td>
</tr>
<tr>
<td>Hi 3 - Table 13</td>
<td>112.639</td>
<td>P &gt; .05</td>
</tr>
<tr>
<td>Hi 4 - Table 14 &amp; Table 15 &amp; Table 16</td>
<td>10.784</td>
<td>P &gt; .05</td>
</tr>
<tr>
<td>Hi 5 - Table 17</td>
<td>15.851</td>
<td>P &gt; .05</td>
</tr>
<tr>
<td>Hi 6 - Table 18</td>
<td>348.900</td>
<td>P &gt; .05</td>
</tr>
<tr>
<td>Hi 7 - Table 19 &amp; Table 20</td>
<td>128.360</td>
<td>P &gt; .05</td>
</tr>
<tr>
<td></td>
<td>453.694</td>
<td>P &gt; .05</td>
</tr>
</tbody>
</table>
### Table 31—Continued

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>1976</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chi-Square</td>
<td>P</td>
</tr>
<tr>
<td>Hi 8 - Table 21 &amp; Table 22</td>
<td>9.400</td>
<td>P &lt; .05</td>
</tr>
<tr>
<td>Hi 9 - Table 23 Table 24</td>
<td>5.023</td>
<td>P &lt; .05</td>
</tr>
<tr>
<td>Hi 10 - Table 25 Table 26 Table 27 &amp; Table 28</td>
<td>317.657</td>
<td>P &gt; .05</td>
</tr>
<tr>
<td>Hi 11 - Table 29 &amp; Table 30</td>
<td>740.729</td>
<td>P &gt; .05</td>
</tr>
</tbody>
</table>
except hours at work per week, out-of-school activities, time spent with friends, the self-rating of intelligence (but not for 1976) and the type of delinquent activities senior students got involved in for 1976 and 1986. Table 31 provides a summary of the findings for all the cross-tabulation tables for both years examined.

Hypotheses 5 through 11 dealt with Hirschi's social control theory and with few exceptions, were supportive of his theoretical assertions. Hypothesis 5, concerned with parents' levels of education and high school seniors' drug use, was rejected for 1976 but not for 1986. As stated earlier in this study, the data analysis indicates a weakening of familial bonds in the ten-year span from 1976 to 1986, with significantly fewer students living with their fathers. Thus, parental influence, as measured by educational level, was a factor in student's drug use in 1976, but not for 1986.

Hypothesis 6, which dealt with high school seniors' academic achievement and their drug use, was rejected for 1976 and 1986. The data show that strong school attachment (grades and activities) seems to be an important factor concerning high school seniors' drug use, as was asserted by Hirschi's control theory.

Hypotheses 7 and 11, which looked at the importance placed on religion by students and their church attendance and drug use, respectively, were rejected for both
years studied. Strong religious beliefs and attachment to church are, according to Hirchi, influential factors on the students' likelihood of being involved in delinquent acts, such as drug use. Therefore, a strong attachment to religious belief is related to less or no involvement with drugs.

Hypothesis 8, which dealt with high school seniors' levels of self-esteem and their involvement with drug use, was retained for 1976 but rejected for 1986. According to social control theory, strong values and beliefs as well as a positive self-image are major factors concerning involvement with drugs and other delinquent acts, as was reflected in this data analysis.

Moreover, Hypothesis 9, concerned with the amount of time spent by students in extracurricular activities and drug use, was rejected for the years studied. According to Hirschi's theory, the time students spend in extracurricular activities such as work or with friends is factor in the likelihood that high school seniors will use drugs or be involved in other delinquent acts.

Finally, Hypothesis 10, dealing with attachment to social institutions such as school, church, work and family, and high school seniors' drug use, was rejected for 1976 and 1986. Similarly, Hypothesis 11 was rejected because a significant relationship was found between frequency of church attendance and drug use. Again,
according to Hirschi's social control theory, students with strong societal or institutional bonds are less likely to use drugs or be involved in other types of delinquent acts.
CHAPTER V

SUMMARY, CONCLUSION, LIMITATIONS
AND RECOMMENDATIONS

Introduction

This chapter includes a summary, conclusions, limitations of the present study, and recommendations for future investigations concerning high school students' involvement with legal and illegal drugs.

Summary

This study, a secondary analysis of data from a national sample, has assessed the changes that have occurred over a ten-year span among high school seniors with respect to their involvement with licit and/or illicit drugs, as well as other types of delinquent activities.

Theoretically, pertinent literature supports the assertion that negative and/or weak social control values (school, family, church, work and peers) among high school students play a very important role in determining whether they will become an abuser of drugs. Additionally, studies involving students have revealed a strong
relationship between various demographic and structural variables and the use of drugs, as well as other types of delinquent activities.

This study was conducted in order to assess the involvement of high school seniors with legal and illegal drug use, and to compare and contrast the level of drug involvement among high school seniors in 1976 and their 1986 counterparts.

Specifically, high school seniors' level of involvement with drugs as related to demographic, background and structural variables were key aspects of this investigation. Various assessment instruments were utilized that included measures for the attitudes, values, self-esteem, and other demographic and structural characteristics of the sample population. Additionally, this study sought to determine the extent to which the data supported Hirschi's (1969) theoretical emphasis on attachment, belief, commitment, and involvement.

The data utilized in this study were chosen from the University of Michigan's Monitoring the Future (Bachman et al., 1980 & 1987) survey. Each year a large, nationally representative sample of high school seniors in the U.S. is asked to respond to approximately 100 drug use and demographic questions, as well as an average of 200 additional questions on a variety of subjects: drug use, social institutions, race relations, the changing roles
of women, educational aspirations, occupational aims, and marital and family plans. There are more than 1,300 variables in all.

Each year the total sample is divided into five subsamples and each subsample is administered a different form of the questionnaire; however, all of the respondents answer the "core" drug and demographic questions. Each questionnaire generates a corresponding data file. In addition, there is a sixth file containing only the "core" variables present in all five forms. Each of the subsamples contains approximately 3,500 respondents (Bachman et al., 1980, 1987).

This research used only the "core" drug and demographic variables and data from one subsample for 1976 (Bachman et al., 1978a, 1978b) and 1986 (Bachman et al., 1987) that were obtained to explore a selected number of various structural, demographic and background variables. This study also looked into high school seniors' involvement in various extracurricular and/or out-of-school activities; attachment to other institutions, such as church and school; and students' drug use, for 1976 and 1986.

The following five research questions were addressed:

1. Is there a relationship between high school seniors' attachment to religious beliefs and their
likelihood to use drugs?

2. Is there a relationship between high school seniors' attachment to school (grades and attendance) and their likelihood to use drugs?

3. To what extent do the race and gender factors determine whether a high school senior will use drugs, and frequency of drug use?

4. What part does self-image play in influencing high school seniors to use drugs?

5. Is there a relationship between the amount of time spent in out-of-school activities and time spent with friends and drug use?

Statistically significant differences concerning background, attitudes and beliefs, and/or values were not found between the sample population of 1976 and that of 1986. However, in terms of incidence and percentages, the present analysis pointed to various changes in the ten-year span of time. A positive relationship among the variables of values, demographics, and background was revealed by the data. Nonetheless, there was a slight decrease in the number of high school seniors who used drugs. In addition, statistically significant differences were found between independent variables such as gender, race, school and church attendance, values, beliefs, and religion, and high school seniors' drug use. Furthermore, students who tend to be more committed to
school, church, and work are less likely to be drug users than those who are not.

Conclusion

An important objective of this study was to obtain descriptive data for 1976 and 1986 on high school seniors' drug use. This task was accomplished and this study provides a base for further sociological investigations into high school seniors' drug use.

The level of drug involvement of the sample populations of high school seniors—for both white and non-white—remained practically the same for 1976 and 1986 with, for the most part, slight decreases in the incidence of use of individual drugs such as alcohol, cigarettes, and marihuana/hashish. However, there was a slight increase in the percentage of high school seniors who used inhalants and cocaine in the 30 days prior to the implementation of the survey.

The data analysis revealed a significant difference concerning parents' level of education and high school seniors' drug use. In 1976 there was a relationship between parents' level of education and high school seniors' drug use; in 1986, there was no relationship between these variables. As stated earlier in this study, these findings reflect the weakening of familial bonds in the American society.
Another significant difference between the two years studied concerns self-rating of intelligence and drug use. For 1976 there was no relationship between high school seniors' low self-rating of intelligence and their drug use, in 1986 these variables were highly related. In short, the number of students who rated their intelligence to be below average, far below average, or very below average used drugs more than their 1976 counterparts.

Furthermore, the data analysis revealed that the percentage of high school seniors who used drugs and spent much of their time in out-of-school activities increased significantly during the 10-year span. On the other hand, for 1976 and 1986, school and religious attachment were found to be factors related to high school seniors' drug use. Briefly, the more attached students were to their school and their religious beliefs, the less likely they were using drugs.

In testing the first research hypothesis, a difference was found between the high school seniors' race and their drug use. In 1976 and 1986, more non-white high school seniors reported not using drugs compared to their white counterparts.

In testing the second and third research hypotheses, a relationship was found between high school seniors' gender and their involvement with drugs for both 1976 and
1986. Specifically, male students—particularly white males—reported using drugs more frequently. Thus, regardless of the year, male high school seniors used drugs more frequently than their female counterparts. Additionally, white males used drugs more frequently than non-white males; and likewise, white females used drugs more frequently than non-white female high school seniors.

With respect to the fourth hypothesis, which deals with frequency of drug use and delinquent behavior of high school seniors, this study found no relationship between the variables. Moreover, in 1976 more high school seniors reported not using drugs and no delinquent involvement than their 1986 counterparts. Additionally, in 1986 fewer high school seniors reported not using drugs and fights with either parents, supervisors or with gangs than the 1976 high school senior sample.

Briefly, in 1976 and 1986, more high school seniors reported they had not used drugs and reported more fights with parents than those who reported a high incidence of drug use. The results of this analysis show that drug use is a factor related to high school seniors' involvement in delinquent activities other than fights with parents and supervisors. Those high school seniors who reported no use of drugs were more involved in fights with parents and supervisors.
The following hypotheses, 5 through 11, dealt directly with Hirschi's social control theory. In different ways, these hypotheses measure whether attachment to certain societal institutions is a factor related to high school seniors' drug use.

An examination of the findings concerning Hypothesis 5 revealed that there is a relationship between high school seniors' drug use and their fathers' educational level in 1976, but not in 1986. Fathers' educational levels may very well not be significant in terms of drug use, since the percentages of high school seniors who live with their fathers decreased markedly between 1976 and 1986. Likewise, mothers' educational levels was a significant factor concerning drug use in 1976, but not in 1986. Here, it can be easily speculated that since significantly fewer students lived with their fathers in 1986, their mothers might not have been at home as often (e.g., work), thus, having less time to be aware of all aspects of their high school seniors' lives.

The above findings are a clear illustration of the erosion of the American family. Indeed, there is a detachment and weakening of the bonds that kept families together in the past and a declining of the traditional American family values.

With respect to Hypothesis 6, which dealt with student academic achievement and drug use, this study
found that students' academic achievement is strongly related to high school seniors' drug use. A strong relationship between the high school seniors' grade averages and their involvement in drugs was found. Those high school seniors who did not use drugs tended to have a higher grade average than those who used them.

With respect to Hypothesis 7, which dealt with importance placed on religion, academic achievement, and drug use of high school seniors, it was found that there is a significant relationship between the variables for 1976 and 1986. The strongest relationship was found between students who use drugs, had a low academic average, and saw religion as not important, a pattern that was more pronounced in 1986. Thus, it was shown that those who considered church important and had higher academic achievement also had a lower incidence of drug use than those who had lower academic achievement and considered church not important. In sum, the perception high school seniors had about religion and their academic achievement can be seen as two related factors to drug use.

In testing Hypothesis 8, which dealt with students' self-esteem and drug use, this study found that there is a strong relationship between students who rate themselves as average, below average, or very below average and their drug use. A strong relationship between their
low self-rating of intelligence and drug use was not found in 1976, but it was found to be highly significant for 1986. Thus, in 1986, high school seniors who rated themselves "far below," "below," or "slightly below" average were more involved with drugs.

With respect to Hypothesis 9, which dealt with high school seniors' time spent at work, at school and in out-of-school activities, and their drug use, this study found a significant relationship between out-of-school activities and drug use. Moreover, those students who used drugs and spent time in out-of-school activities dramatically increased in 1986, compared to those from 1976. For 1976, no significant relationship between the variables was found, while for 1986 there seems to be a significant relationship between the variables. Therefore, it can be argued that the amount of time spent in out-of-school activities is a related factor to high school seniors' use of drugs.

Concerning hours spent at work and drug use, this study also found a significant relationship among the variables. Therefore, it can be argued that the incidence of drug use among the students who work 21-30 hours or more a week is far lower than that of those who work 1-5 hours or less a week. Thus, the amount of time spent at work each week can be seen as a related factor to high school seniors' drug use. According to Hirschi's social
control theory, time spent in productive activities such as work influences students toward noninvolvement with drugs and other types of delinquent activities.

An examination of the findings concerning Hypothesis 10 that dealt with students with strong or weak bonds between social institutions, and drug use reveals that, for 1976 and 1986, those students who are less committed to school are more involved with drugs. High school seniors who do not use drugs skip less school than those who reportedly had used drugs in the last 30 days. School attachment, as Hirschi predicted, is an influential factor concerning students' drug use. Briefly, he hypothesizes that the more youth are committed and attached to school, the less likely they are to be involved with drugs and other delinquent acts.

Concerning time spent with friends and drug use, this study found that a greater percentage of high school seniors who reported spending time with friends a few times a year did not use drugs in both years studied. However, the relationship between the variables is stronger in 1976 than in 1986. Therefore, the amount of time spent with friends can be seen as a related factor to high school seniors' drug use. Social control theory indicates that the more time high school seniors spend with friends in activities other than at work or in
sports, the more likely they are to be involved with drugs and other delinquent activities.

In respect to the relationship of church attendance and academic achievement to drug use, this study found that church attendance and academic achievement both are related factors to high school seniors' drug use. Those students with an A average who are most committed to church do not use drugs. Also, according to the findings, the majority of those who reported an A average and who never go to church reported using drugs. Additionally, those students who reported a D grade average but attend church more often did not use drugs. A similar pattern was found for both years studied.

The present analysis indicates that with the exception of D grade average for 1986, a significant relationship was found between grade point average and religious importance and drug use.

Therefore, academic achievement and church attendance are related factors to high school seniors' drug use.

With respect to Hypothesis 11, which dealt with church attendance and drug use, this study found that the more frequently students attend church the less frequently they used drugs. Thus, a direct relationship between church attendance and drug use was found for both 1976 and 1986. Those who never used drugs attended
church more frequently. Once again, supporting Hirschi's theory, the stronger the bond between church and high school seniors, the less likely they are to be involved in any delinquent activities.

Finally, this study revealed that there is a strong relationship between demographic, background and social variables and high school seniors' drug use. A moderate relationship was also found between high school seniors' involvement in certain types of deviant activities and drug use. It was found that high school seniors have experienced a slight decline regarding their level of drug use in 1986 compared to that of 1976.

This research suggests that the more attached students are to school, friends, church, and work, the less likely they are to use drugs and engage in some delinquent activities.

Variables such as race, gender, academic grade average, and out-of-school activities, among others, are not factors that alone can predict the use of drugs by high school seniors. However, according to the evidence found, it can be argued that, in combination with other factors, demographic, background, and social variables can help determine the likelihood as to whether or not high school seniors will use drugs and engage in other types of delinquent activities.
The presence of differences between attitudes of high school seniors for 1976 and 1986 was an indicator that, for both samples, those surveyed are not homogeneous and there is no unicausal or monocausal factor that can explain high school seniors' drug use. However, there is the possibility that the more integrated the students are to social and cultural values, the less likely they are to use drugs and/or engage in any other delinquent activities. Thus, in accord with relevant literature, there is a relationship between the strong or weak integration (bonds) of students, and how likely they are to be involved in the use of drugs and/or various types of delinquency.

Limitations of the Study

The study's limitations included difficulty in figuring out exactly the full meaning for some variables desired to be studied. Working with these data was rather complex because of the logic and format in which they were presented. Also the amount of data and the fact that they were not readily accessible at all times for analysis was a problem. Special concessions were provided by Western Michigan University in order to analyze these data, but the research finding provided only a limited amount of time for computer analysis.
Additionally, due to the complexity of the data, they could be interpreted in multiple, differing ways, and the same variables could be used for a number of different purposes. In addition, in a few cases, data were not provided for various categories of variables thus making it harder to compare certain subgroups between the years explored.

According to the original researchers at the University of Michigan, Ann Arbor, generally speaking, there are at least four ways in which survey data of this sort might fall short of being fully accurate. First, some sampled schools refused to participate, which could introduce some bias. Also, if drug use were dramatically high in some schools, it could alter the findings. Second, the failure to obtain questionnaire data from 100% of the students sampled in participating schools would also introduce bias. Third, the answers provided by participating students are open to both conscious and unconscious distortions that could reduce validity, specifically concerning self-reported crimes. Finally, limitations in sample size and/or design could place limits on the accuracy of estimates.

Moreover, the researchers at the University of Michigan recommend that caution be exercised in interpreting racial differences. Data are given for the two largest racial subgroups in the population, those who
identify themselves as white or Caucasian and those who identify themselves as non-white. Data are not given for specific ethnic categories such as American Indians, Mexican Americans, and Puerto Ricans, since each of these groups comprise less than three percent of the sample in any given year, thus yielding unreliable estimates. Furthermore, because the sample is a stratified clustered sample, it yields less accurate information than would be yielded by a pure random sample of equal size. Therefore, because of the limited number of cases, the margin of sampling error around any statistic describing blacks is larger than for most other subgroups described in the survey. Identified black males comprise about 6% of the sample, whereas census data suggest that they should comprise around 7%. Therefore, it appears that more black males are lost from the target population than white males or females of either race. This may be due to generally poorer attendance rates on the part of some black males and/or an unwillingness on the part of some to participate in data collections of this sort. In sum, a smaller segment of the black population than of the white population of high school age is represented by the data contained here. Insofar as any characteristic is associated with being a school dropout or absentee, it is somewhat disproportionately underrepresented among blacks in the sample.
Survey measures of delinquency and of drug use depend upon respondents reporting what are, in many cases, illegal acts. Thus, a critical question is whether such self-reports are likely to be valid. Like most studies dealing with these areas, the present study does not include direct, objective validation of the present measures; however, the considerable amount of inferential evidence that exists strongly suggests that the self-report questions produce largely valid data.

Schools are invited to participate in the study for a two-year period. With very few exceptions, each school that has participated for one data collection has agreed to participate for a second. For each school refusal, a similar school (in terms of size, geographic area, urbanicity, etc.) was recruited as a replacement. The selection of replacement schools almost entirely removes problems of bias in region, urbanicity, and the like that may result from certain schools refusing to participate. Other potential biases are more subtle, however. For example, if it turned out that most schools with "drug problems" refused to participate, that would seriously bias the drug use estimate derived from the sample. And if any other single factor were dominant in most refusals, that also might suggest a source of serious bias. In fact, however, the reasons for schools' refusals to participate are varied and largely a function of
happenstance events of the particular year. Thus, the
investigators felt fairly confident that school refusals
had not seriously biased the surveys.

Finally, it should be noted that because of the
large sample population used in this study, the chi-
square scores are quite high; thus, the relationships
between the variables have to be interpreted cautiously.

Recommendations

It is recommended that further studies be conducted
using other student populations in earlier stages of
schooling. With studies such as these, the attitudes and
values of a panel of students can be monitored through
time. Expanding this research to include earlier stages
of schooling might provide a more comprehensive analysis
of how the students' attitudes evolve and what drives
them to licit or illicit use of drugs and certain other
types of delinquent behaviors.

Additionally, studies at all stages of schooling
might provide explanations as to what drives students to
licit and illicit drug use and to delinquent behavior.
Such an explanation, if accomplished nationwide, might
help the school system in fighting the development of
attitudes that contribute to drug use and delinquent
behavior among students at all stages of schooling,
prevention rather than an all-out war against drugs.
Finally, this researcher feels that future studies of teenage drug use should include Hirschi's social control theory. It may be advantageous and interesting to use social control theory, along with other theoretical approaches, for a comparative analysis. However, Hirschi's theory alone is an important research tool, particularly in the identification of causal factors leading youngters to become involved in drug use and other delinquent activities.
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