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Social Identification and Drugs: An Exploration of the Socia Basis of Suburban High School Student Drug-using Behavior

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SOCIAL IDENTIFICATION AND DRUGS: AN EXPLORATION OF
THE SOCIAL BASES OF SUBURBAN HIGH SCHOOL STUDENT
DRUG-USING BEHAVIOUR

by

Yvon Yangyuoru

A Dissertation Submitted to the Faculty of the Graduate School
of Loyola University of Chicago in Partial Fulfillment
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VITA

The author Yvon Yangyuoru, is the son of Josephat and Theodora Yangyuoru. He was born July 1, 1939, in Namdom, Ghana.

His secondary school education was obtained in St. Charles Secondary School, Tamale, Ghana. An outstanding performance in the West African School Certificate Examination in June, 1960, won him admission into the Sixth Form, Government Secondary School, Tamale. There he pursued, on full scholarship, further studies in Latin, French, and History. Upon the successful completion of his Sixth Form Studies in June, 1962, he proceeded to St. Victor's Major Seminary, Tamale, where he read philosophy, theology, and other subjects pertinent to the overall priestly training. Upon his ordination in August, 1968, he proceeded to the Jesuit Pontifical Gregorian University, Rome, where he pursued graduate studies in philosophy. In June, 1970, he obtained cum laude, his Licentiate in Philosophy from the Gregorian University.

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In September, 1974, his doctoral dissertation being at an advanced stage, he received an Arthur J. Schmitt Fellowship Award.

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CHAPTER I

INTRODUCTION

The Problem

The taking of drugs is a culturally determined behaviour. Forms of behaviour do not take place in a vacuum. They are carried out in physical and social contexts which play an important role in their likelihood of occurrence, and the specific forms that they take. This is as true of drug-using behaviour as it is of any type of human behaviour. It is a social activity arising out of group and individual needs and determined by the group processes and the present environment. Both the prevalence and incidence of drug use depends largely upon its availability, the cultural context and social norms.

The task of the student of sociology is to attempt an understanding of this behaviour, and its underlying social determinants: those facilitating and/or inhibiting social processes and factors that promote or prevent the occurrence of this form of behaviour. The student has to raise certain crucial questions: questions about the operation of societal and subsocietal norms and values, sanctions and rewards; questions about the environmental and demographic contexts of drug-taking behaviour. This is crucial for any meaningful identification of the social contexts and characteristics that determine this behaviour. Indeed, Blum (1968) has observed: "It is possible to group some individuals together because of a commonality of history and environment and to predict whether or not they will probably use drugs as well as which class of drugs they will most likely use."

It will be the purpose of this study to explore the identification of

student users and nonusers of drugs within a suburban, middle-class, all boys Catholic high school.

Elaboration of the Problem

The careful observations of Becker (1963), Blumer (1967) Boughey (1967), and Goode (1970) have suggested that the use of psychoactive drugs is a behaviour which is socially motivated, socially reinforced, and socially controlled. This is particularly true of marijuana and some opiates. Not only is the drug obtained from others, but these others have the responsibility and power for teaching the neophyte how to smoke it, how to enjoy it, and how the drug is to be used and enjoyed in the future.

Becker (1963), for example, maintains that many young people have their initial drug experience with marijuana provided by older companions. The neophyte who likes the experience and wishes to move towards regular use must have a more stable source of supply than can be provided by chance encounters with other users. He is likely to have a selective and differential association with people: spending more time with persons who use marijuana, and avoiding those who strongly disapprove. The process of becoming a drug user is a learning process by which the neophyte eventually becomes integrated into the drug subculture. Becker observes (1963:44) that "a person will feel free to use marijuana to the degree that he comes to regard conventional conceptions of it as the uninformed views of outsiders and replaces those conceptions with the 'inside' view he has acquired through his experience with the drug in the company of others."

In his attempt to identify the types of groups within which marijuana is smoked, Goode (1970) recognizes the importance of intimacy. The mind-altering substance is smoked not just in any group at all, but in "intimate" groups in which the other participating members are "overwhelmingly signifi-

cant others." This is particularly crucial for the experience of turning on (1970):

Not only is the initiate turned on by experienced marijuana users rich in the collective wisdom of their group, but these proselytizers are also intimates . . . Friends were involved in every stage of the process--supplying information about marijuana, or supplying the opportunity, or the drug. But equally as important is that a friend or group of friends supplied a kind of legitimation. They were an 'example.'

Blumer and his associates (1967), on the other hand, have speculated on the process of recruiting, observing that access to illegal drugs within any community is not open but involves a highly selective social process:

It is not possible to buy drugs in the same way one would buy shoes; one cannot just go to an open available source and make a purchase. It is necessary to know people who have drugs, and one must be able to establish connections with them in order to obtain drugs for use. This indispensable step brings into play a highly important selective process which serves to automatically exclude a large bulk of the youngsters from use.

In order to explain this differential distribution of illegal drug use Blumer and his associates then focus on the importance of recruitment process and the way in which it operates (1967:80):

In order to understand how youngsters are led to use of drugs, one must first recognize how the juveniles themselves limit the types of people they will introduce to drugs . . . To turn someone on is an expression of friendship, trust, and acceptance. Most youngsters are introduced to illegal drugs in the normal course of living by a close friend or relative. After they learn to use drugs for pleasure, being turned on and turning others on becomes an established social practice, similar to the convention of buying a friend a drink or offering a drink to a guest when he comes to your home. For the most part a youngster must present an image of being 'good people' before he is able to establish 'connections' with the traffic in illegal drugs, and before he will be turned on. He must establish himself in the eyes of his peers, and he must have a reputation of being trust worthy and of being someone who can always 'maintain his cool . . .' In social circles of 'cool people' a certain trust must be established before an initiate will be introduced to drugs of any kind. One must 'prove himself' before he will be turned on. A variety of situations arise in the daily round of adolescent life where an initiate is 'tested' to determine if he is 'good people'. Youngsters form concrete images of people who can be trusted and of people who are dangerous. . . .

The implication is that the experience with drugs almost always occurs in social contexts, and that such experiences with psychotropic substances are not equally distributed among all people within any community. They involve highly selective processes of interpersonal attraction.

What becomes an interesting research question, therefore, is the social characteristics of persons who become recruited into drug-using circles, as compared to those who do not, and why the differences may arise. Hence, what needs empirical investigations are the social qualities or characteristics which constitute likely candidates for use of psychotropic substances within a given community. What kinds of interests and activities might users share in common and how do they differ from those of non-users?

The present study addresses itself specifically to these problems. Focusing on an entire high school community and a wide range of drugs, the purpose of the present study is to examine the relationship between the degree of experience students have had with drugs and the nature of their interests, activities and characteristics.

Terminology

Since certain terms are crucial to the discussion of drugs, there arises the necessity of clarify their meaning.

The World Health Organization Expert Committee on Dependence-Producing Drugs (1969) defined drugs as: "any substance (other than food and water) that, when taken into the living organism, may modify one or more of its functions."

Addiction and habituation defy easy definition. To circumvent the definitional difficulties, the World Health Committee on Addiction-Producing

Drugs (1969) as "a state, psychic and sometimes also physical, resulting from the interaction between a living organism and a drug, and characterized by behavioural and other responses that always include a compulsion to take the drug on a continuous or periodic basis in order to experience its psychic effects, and sometimes to avoid the discomfort of its absence."

Physical dependence has been described as "an adaptive state that manifests itself by intense physical disturbances when the administration of the drug is suspended These disturbances, i.e., the withdrawal or abstinence syndromes, are made up of specific arrays of symptoms and signs of psychic and physical nature that are characteristic for each drug type" (Eddy, et al., 1965).

Psychic dependence: this has been described as a "condition in which a drug produces a feeling of satisfaction and a psychic drive that require periodic or continuous administration of the drug to produce pleasure or to avoid discomfort" (Eddy, et al., 1965).

Tolerance is "an adaptive state characterized by diminished response to the same quantity of a drug" (Eddy, et al., 1965). It is "a declining effect on repeated administration of the same dose of a drug, or, conversely, a need to increase the dose of a drug on repeated administration in order to achieve the original degree of effect" (Isball, 1955). Most of the drugs selected for this study produce tolerance and psychologic dependence and some, especially the central nervous system depressant drugs, produce physical dependence as well. The selected drugs to be studied include tobacco, alcohol, hallucinogens (LSD, mescaline), cannabis, amphetamines, cocaine, barbiturates, methaqualone, opiates, heroin and tranquilizers.

Review of Relevant Literature

Epidemiology of High School Student Drug Use

Though the scope of this study is limited to one high school community, it is imperative to locate it within a broader, more global problem base. The task of the epidemiological section that follows is to critically and selectively review a mass of sociological studies of high school student drug-using behaviour. It will be the intention of this section to show how the prevalence and incidence of drug use is distributed among the high school population throughout this country. For purposes of comparison, a brief reference will be made to the high school drug situation in Canada and Sweden.

Despite many efforts at accumulating systematic knowledge about illegal drug use by the younger generation, most students of the subject agree that current knowledge is still very limited. Limitations appear to be more pronounced with respect to high school than college age youth (Blum, 1969b). Our immediate task is to attempt to define the epidemiologic parameters of general high school student drug use in the United States.

The most recent attempt to synthesize scientific findings on drug use was published by the Bureau of Narcotics and Dangerous Drugs in September, 1970. At that time twelve surveys of drug use have been conducted among high school students in the North Central Region, three in the North East, eight in the West, and one in the South. Since that report several valuable studies have been reported.

North Central Region: A study by Bogg and his associates (1968) of seniors in eleven high schools "which reflect the demographic, economic, and racial diversity" of Michigan, showed that marijuana, LSD, amphetamines and glue were the substances of preference of students. Use of marijuana was greatest, with one-third of all students in a private school reporting using

it. Hallucinogens use was also heavy within the same school (14.6 per cent). Heaviest use of amphetamines was reported by a suburban school (5.3 per cent), while 7.0 per cent of a rural community students indicated that they had sniffed glue.

In the North Central Region, Udell and Smith (1969) explored the attitudes, usage and availability of drugs among Madison high school students. The study, involving a stratified, random sample of sophomore, junior, and senior students from five high schools in Madison, showed that 22.6 per cent of all students have smoked marijuana, and an almost equal percentage (19.7 per cent) used hallucinogens.

A similar pattern of drug use obtains among students in the North East region. Marijuana has been used by 21 per cent of the students in Massachusetts (Boston Globe, 1970). Elliot (1967) has shown that 16.7 per cent of senior high school students attending a Mamaroneck high school had used marijuana, 3.4 per cent had tried barbiturates, and 6.1 per cent had sniffed glue.

Studies in the South do not show a much different pattern. An exploration of drug use patterns by the Committee on Drug Abuse (1969) in Montgomery high schools revealed that 26 per cent of the boys and 20 per cent of the girls in the upper senior class reported that they had used marijuana. As in other studies, use of alcohol far exceeded use of dangerous drugs. Use of amphetamines was reported by 8.0 per cent of the students.

A supplementary study by Preston and Fry (1971) focused specifically on marijuana use by students in five Houston high schools of different socio-economic status. Of all users of marijuana, 66 per cent were Anglo, 21.0 per cent Black, and 12.0 per cent Mexican-American. The probability of using marijuana was almost one in four. The overwhelming majority (88.0 per cent)

of students who tried marijuana used it more than once.

Gosset and his associates (1969) conducted a survey of drug use in all 43 junior and senior high schools in the Dallas Independence School District. The survey revealed that 28.0 per cent of students reported experimentation with an illicit drug, 8.0 per cent reported use more than ten times, and 4.0 per cent reported frequent current use. Of the 61 drugs, tobacco, alcohol, glue, marijuana, solvent inhalants, and non-prescription stimulants were most commonly reported. Boys reported more use than girls, upper-class students more than lower, and peers were most often the source. This pattern of drug use distribution is consistent with the students of all public schools in Portland, Oregon, and Multnomah County (Johnson, et al., 1969).

In the Midwest, Crowther and Baumer (1971) made a study of the use of psychoactive substances among high school students in Greater Egypt area, Illinois. Thirteen per cent of all students reported use of marijuana, 6.0 per cent had tried stimulants, and an equal percentage experimented with depressant drugs. Use of special substances and hallucinogenic drugs had been reported by 4.0 per cent. Narcotics were least used; only 2.0 per cent of students reported using any narcotic drug.

In a large-scale survey of high school students from three communities in the Mid-West, Hager, Vener, and Stewart (1971) found that although drug use begins early (at the age of 13), overall reported usage rates were relatively low. Marijuana was the most extensively consumed drug (12 per cent of students reported use of it). Hallucinogens were used by 7.0 per cent of students. Boys reported more experience with all types of drugs, and greater use was reported by respondents in higher socioeconomic schools. The greatest percentage of increase in the use of soft drugs occurred between sixteen and

eighteen years of age. This increase is a trend which parallels the findings of other who report a rise in other forms of deviance among youth in this age bracket (Cohen, 1969; Conger, Miller, and Walsmith, 1965). Indeed accumulated research from investigations into adolescent deviant behaviour has shown that deviant acts increase with grade in school. For instance, drug use has been found to increase with age through the high school years, becoming stabilized within 20.0 to 35.0 per cent of students by the time they reach college age (Berg, 1970; Johnson, et al., 1971; Larimer, et al., 1970). Such data invite the speculation that "for some students the drug use is socialized and, to some degree, stabilized during the high school period" (Mauss, 1967).

West: A series of comprehensive, well documented studies of drug use by all San Mateo County, California, high school students has been done covering the period 1967-1972. The 1968 and 1969 surveys, using the questionnaire and procedures developed in the pilot study of 1967, has the express purpose "to make an assessment of the level of use of mind-altering drugs among San Mateo County high school students" (San Mateo County Narcotic Advisory Committee, 1968, 1969). Data for each of the two years indicated that the rate of the use of marijuana among boys was greater for each succeeding class. Similarly, the increased rate per class is noted for girls except that usage among girls tends to level off between the junior and senior year. However, the rate of marijuana use for boys is greater (42.2 per cent) than girls (35.7 per cent). A comparison of rates for 1968 and 1969 indicates that the 1969 rates for both boys and girls have increased. The same is true of all other drugs. The 1972 preliminary report shows this trend to be consistent.

In a comparative study of two high schools in California by Blum and

his associates (1969b) it was found that 31.0 per cent of male students in a middle-class high school smoked marijuana in comparison with 13.0 per cent of male students in a lower-middle-class and working-class high school.

In a San Francisco Bay Area upper-middle-class high school only 16.0 per cent of the students felt that they were under pressure to use drugs. Investigators found that "there was no feeling of the innocent being seduced or of the naive being misled" in drug using situations (Blum, 1969b).

A series of studies covering all public high schools in Utah (1969) shows that drugs were not extensively used by students. Marijuana was reportedly used by 12.2 per cent of students, amphetamines by 10.0 per cent, and LSD by 6.4 per cent. By contrast high school dropouts within the same state were much more involved with drugs, with 32.7 per cent reporting use of LSD, 49.7 per cent using marijuana, and 28.5 per cent using amphetamines (Utah Governor's Citizen Advisory Committee on Drugs, 1969). Use of barbiturates was reported by 31.2 per cent of the dropouts, and opiates by 21.8 per cent, whereas none of the ongoing students reported use of any barbiturates.

Few statistics on non-medical use of drugs are available. Blumer and his associates (1967), estimate that in Oakland, California, 60 per cent of the black and 50 per cent of Mexican-American youngsters have used illicit drugs.

A nationwide survey of the Gallup Poll (1969) shows that age and education are key factors in the use of marijuana. Twelve per cent of all people within the 24-29 age group are users of marijuana, by far the greatest single category of users. With regard to education, 9.0 per cent and 1.0 per cent were of high school and grade school backgrounds respectively.

The high school drug scene does not seem to differ from that of other countries.

In their epidemiological study of student drug use in Halifax, Toronto and Montreal, Smart and his associates (1972) observed very low use of opiates. They noted a significant use of all other drugs, particularly Tobacco, alcohol, and marijuana in the seventh and eighth grades and a progressive increase of all types of abuse through second year college.

A nationwide study in 1967 of selected groups of pupils in elementary and higher schools in Sweden showed the highest incidence of drug taking to exist in the highest grade (Goldberg, 1972). Cannabis was used by 68 per cent, stimulant drugs by 17 per cent, opiates by 5.0 per cent, and other drugs, mainly hypnotics and LSD by 10.0 per cent. There was a clear difference in drugs of choice among those taking drugs only occasionally, one to ten times, and those having taken drugs more frequently.

It is difficult to generalize from the findings of most of the surveys, studies and polls cited in the previous pages; many analyzed samples which were not representative of their populations, and the data varies in validity and reliability. However, epidemiologic studies of non-medical use of drugs can serve as indicators of illicit use of drugs, even if by themselves these studies do not sufficiently examine the problem. Such studies and statistics are to be interpreted in terms of the numerous factors which are related to drug use, factors such as availability of drugs, location of institutions, social and demographic characteristics of students, and differences in life styles of the various institutions. When considered within this broad framework, well defined outlines of theories of drug-using behaviour begin to emerge from the bewildering mass of discrete findings.

Drug Usage: Effects and Patterns

One thing that has to be emphasized is that drug taking is human behaviour. As such, it follows the same rules and principles as any other behaviour. Human behaviour is rational and goal-directed. This is true of drug taking also. Its persistence depends on whether it increases the individual's pleasure or decreases his discomfort. Of those drugs that increase pleasure or decrease discomfort, the particular drugs selected must be acceptable within the individual's cultural group. It is imperative, therefore, to discuss the pharmacological aspects of drug use. This may aid our understanding as to why certain people opt for this specific type of behaviour, and why society reacts to it as it does.

Alcohol

Alcohol (Ethyl Alcohol, Ethanol) is "a depressant drug which acts on the central nervous system" (Bates and Crowther, 1973). It produces physical dependence and tolerance. Dependence on alcohol is manifested chiefly by the development of convulsions and typical delirium following withdrawal (Isbell, 1955).

Alcohol affects muscle strength deterioration (Carbon et al., 1969), lessens ability to perform tasks involving speed and fairly complex perceptual motor abilities (Kleinknecht and Goldstein, 1972; Kisch and Cheney, 1969; Huntley, 1973). Rats also respond slower than normal under the influence of alcohol. In moderate doses it produces a small deficit in auditory sensitivity (Schneider and Carpenter, 1969; Lewis et al., 1969).

A study by Kleinknecht and Goldstein (1969) concluded there was a loss in abstract reasoning. Cappell and Herman (1972) made a literary review of the tension reduction hypothesis of alcohol; they suggest that this hypothesis is not convincingly supported. Admittedly, alcohol affects moods by

definitely affecting electro-chemical changes in the brain (Jones, 1970). However, mood changes do not necessarily go toward a tension reduction direction. As the blood alcohol level increases subjects tend to be depressed, anxious, angry, fatigued and confused (Rosenberg, et al., 1969; Warren and Raynes, 1972; Cameron, 1964; Jones and Jones, 1970).

Several studies came up with the conclusion that alcohol has a definite impact on the central nervous system. A study of ten drunks in Cincinnati by Johnstone and Witt (1972) concluded that alcohol causes respiratory depression. Berger (1969) found this to be true in mice. Brain shrinkage (Brewer and Perrett, 1971), and damage of the nervous system (Clarkson, et al., 1969) can result from chronic alcoholism. Blackouts are also common in alcoholics.

Patterns of Use

Blum and associates (1969a) conclude, from a large volume of historical data, that alcoholic beverages are the first psychoactive substances to be discovered by man. Its use is determined by sociocultural norms of specific societies. They further maintain that evidence exists for "differences in styles of use, depending upon the social status of persons; age, sex, social class, and religious roles appear early as determinants of who employed what beverage and in what settings.

The epidemiology of alcoholism seems to be on a constant rise. Keller (1962), basing his evidence on the 1960 census data, observed that the alcoholism rate in the United States is 2.0 per cent. Four per cent of the total male population were defined as alcoholics (Bates and Crowther, 1972). Cisin and Calahan's national survey (1965) shows that 68.0 per cent of all male adults consumed alcoholic beverages. More recently, Hebert and associates (1970) estimated that there are 80 million drinkers in the United States of which 6.5 per cent are alcoholics. France, however, has the biggest

alcohol problem. The French government estimates (1970) that 15 per cent of adult French males are alcoholics, and 30 per cent consume alcohol in amounts dangerous to their health (Herbert et al., 1970).

In the United States about 80 per cent of adults who live in urban areas report using alcoholic beverages, while slightly less than half of their rural counterparts indulge (Herbert, et al., 1970). Generally, the higher the socioeconomic status, the greater the percentage of drinkers.

Religious affiliation is an important factor. Herbert and his associates' study revealed over 90 per cent of both male and female Jewish reporting the use of alcohol. Interestingly, there is a low percentage of Jewish who become alcoholics. Of Catholics 90 per cent males and 80 per cent females reported using alcohol; the corresponding figures for Protestants are 80 per cent males and 70 per cent females.

Barbiturates

Barbiturates embrace a group of drugs the most common of which are Veronal and its compounds: Seconal, Nembutal, Tuinal, and Amital. Closely allied in effects are the minor tranquilizers--Parest, Librium, Valium, Quaalude, Sopors, Equanil and Miltown.

Barbiturates are central nervous system depressant drugs. The subjective effects of barbiturates and sedatives are similar to those of alcohol. A large degree of barbiturate ^{dose} produces a marked degree of intoxication, difficulty in thinking and deterioration in ability to perform psychologic tests (Isbell, et al., 1950). It has been observed by Jaffe (1970) that the effects vary considerably with the dose.

Barbiturates produce both physical and psychic dependence (Cameron, 1970; Isbell, 1950; Isbell, et al., 1953); tolerance also develops. The barbiturate intoxicated person shows a "general sluggishness, difficulty in

thinking, slowness of speech and comprehension, poor memory, faulty judgment, narrowed range of attention, emotional lability and an exaggeration of basic personality traits" (Sharpless, 1965).

The World Health Organization Expert Committee on Addiction Producing Drugs (1964) recognizes a complex of barbiturate withdrawal symptoms: "yawning, lacrimation, rhinorrhoea, perspiration, mydriasis, tremor, gooseflesh, anorexia, anxiety, restlessness, nausea, emesis, diarrhea, hot flushes, rise in body temperature, increase in respiratory rate and in systolic blood pressure, abdominal or other muscle cramps, and dehydration and loss of body-weight."

Patterns of Use

The hypothesis of anxiety-reduction has often been advanced as an explanation of the underlying reasons for the use of barbiturates. However, several studies have failed to substantiate this contention (Henrique, 1972; Anumye, 1970). In recent years barbiturate-using population has tended to include more and more youngsters. Hawks (1971), in reviewing governmental materials in the United Kingdom in 1970, stated that there was a sharp increase in barbiturate use by young people. A similar trend was shown to obtain among teenagers in Canada (Smart, et al., 1969; Whitehead, 1970), and in the United States (McKillip, et al., 1972). Shick (1970) also discovered a high increase in barbiturate use in the Haigh-Asbury district of San Francisco between 1967 and 1968.

The comprehensive studies of Blum and his associates (1969b) show that teenagers who use barbiturates are upperclass men, come from wealthy families, come from unsettled families, have no religious affiliations . . . seek new experiences.

Opiates

Opiates (Opium, Morphine, Heroin, Meperidine, Methadone, etc.) are "depressants having pronounced effect on the respiratory and central nervous system" (Bates and Crowther, 1973). They are derivatives from the resin of the pod of the opium poppy (*papaver somniferum*). The World Health Organization Committee on Dependence-Producing Drugs (1964) recognizes that drug dependence of morphine type, or an agent with morphine-like effects, include the following characteristics:

(1) an overpowering desire or need to continue taking the drug and to obtain it by any means; the need can be satisfied by the drug taken initially or by another with morphine-like properties;

(2) a tendency to increase the dose owing to the developing of tolerance;

(3) a psychic dependence on the effects of the drug related to a subjective and individual appreciation of those effects; and

(4) a physical dependence on the effects of the drug requiring its presence for maintenance of homeostasis and resulting in a definite characteristic, and self-limited abstinence syndrome when the drug is withdrawn.

Patterns of Use

O'Donnell and Ball (1966) recognize that narcotic use is concentrated in large metropolitan cities. The initial use of heroin was confined to people of the "night life," with Negroes, Jews, Italian and Irish being the main ethnic groups involved (Casey, 1969).

Narcotic use was initially pronounced among the female population (Laken, 1880; Hull, 1885; Annual Report, Michigan, 1887). Medical prescriptions to women accounted for the greater prevalence of opiate addiction among this population. However, the United States Treasury Department, Bureau of

Narcotics (1967, 1963) report that by the 1960's, among known addicts, males outnumbered females, and the younger people tended to use it more than previously.

Anon (1881) shows that at least 22 per cent of narcotic users had an upper-class status. The 1885 Iowa survey similarly noted that the majority of opiate users are to be found among the educated and most honoured and useful members of the society. The increased rate of narcotics use by blacks seems to have been a comparatively more recent phenomenon (Terry, 1913). Contemporary trends show a growing number of users among white, suburban, middle-class youth and military personnel (Consumer Report, 1972). Most recently, Bates and Rowther (1973) recognized that a large population of the users in the United States are minority group members. In the North, they are likely to be Negroes or Puerto Ricans living in the large urban areas, and they had started heroin use before the age of twenty; in the South, they are more likely to be older whites not living in the major metropolitan areas; in the Southwest, users are most likely to be Spanish speaking persons and the median age of first use of narcotics would be seventeen.

Stimulants (Amphetamines, Cocaine)

Stimulants are a group of drugs which directly stimulate the central nervous system. The most widely known is caffeine. More potent than caffeine are synthetic stimulants such as amphetamines, methamphetamine, and cocaine. The Bureau of Narcotics and Dangerous Drugs (1973) recognize that these drugs "produce excitation, increase activity, and an ability to go without sleep for extended periods of time." Amphetamines are prescribed for "the treatment of depression, weight control, narcolepsy, as well as to promote wakefulness, to combat fatigue and to increase energy" (Barnette, 1969). Subjective effects of cocaine include (Jaffe, 1965) "an elevation of mood that often

reaches euphoric excitement." Both produce a marked decrease in hunger, but whereas amphetamines produce tolerance, cocaine does not.

Patterns of Use

Psychopathy, immaturity, and personality defects such as inadequacy are often found to be present at the background to the drug habit (Durant, 1965; Kramer, 1967). Amphetamine users tend to be of high socioeconomic status (Crowther, 1972), have more education, and are of higher I.Q. than the narcotic user (Fishman, 1968).

The study of Henrique and his associates (1972) raised serious questions about the contention that amphetamine users are psychologically depressed and, therefore, prefer stimulant drugs, whereas heroin users are anxious and, therefore, prefer physiologically depressant drugs. There is, however, evidence of high incidence of cocaine abuse among methadone maintenance patients (Chamber, et al., 1972). By comparison with narcotic, hypnotic and analgetic users, amphetamine-users are younger (Ladewig, 1971; Masaki, 1956). This does not seem to be the case in Britain where the majority of amphetamine abusers tend to be middle-aged women (Hawks, 1969; Wilson and Beacon, 1964).

The extensive studies by Blum and his associates (1969b) indicate that amphetamine use occurs among students who are older; are politically left wing and actively involved in politics, differ politically from their fathers and mothers . . ."

Hallucinogens

Hallucinogenic drugs have been defined by Metzner (1964) as: "substances that produce changes in thought, perception, mood and, sometimes posture, occurring alone or in concert without causing either major disturbances or the autonomic system or addictive-craving . . ."

Hallucinogens are a group of drugs which include LSD, mescaline, psilocybin, "morning glory seeds," DET, DMT, and DPT. LSA is probably the most potent of these psychotomimetic substances, and is probably the most readily available.

The subjective effects of LSD, mescaline, and psilocybin depend on certain important non-drug variables bearing on the personality of the subject, the property and potency of the drug itself, and the expectations of the investigator and ingester (Barron, 1964; Cohen, 1970; Sandison, 1964; Dittman, et al., 1969). Basic physiological effects of LSD are those typical of mild excitement of the sympathetic nervous system (Barron, 1964), euphoria, depression, depersonalization (Bates and Crowther, 1973). These substances dilate the pupils, constrict the peripheral arterioles and raise systolic blood pressure (Hollister and Schutz, 1970). They may increase excitability of such spinal reflexes such as the knee jerk (Isbell, 1959; Isbell, et al., 1961; Isbell and Jasinski, 1969).

Psychological effects include a sense of timelessness, mystical and transcendental experiences (Cohen, 1970; Linton and Langs, 1961; Urgeleider, 1966). There are reports of a variety of perceptual changes effected by hallucinogenic substances (Klee, 1963), gross distortions of body image (Freedman, 1968), and also feeling of anxiety, and agitation (Ludwig and Levine, 1965a, 1965b).

Hallucinogenic drugs do not produce physical dependence; however, tolerance does develop. What is more, the study of Isbell and associates (1961) concluded to the existence of cross-tolerance between LSD and psilocybin; indeed, all substances within the hallucinogenic group are cross-tolerant (Cohen, 1970).

Patterns of Use

Psychotomimetic drugs are generally used by intellectuals desiring mystical experiences (Clausen, 1966). Indeed, use of hallucinogens has been observed to be confined, in its initial stages, to intellectual circles (Kleber, 1960; McGlothlin and Cohen, 1965), and college students (Imperi, et al., 1968; Freedman, 1969). Frosh (1970) observed that LSD users are more likely to have used marijuana as well as other drugs; Goode (1969) and Eels (1968) concur with this view.

Many studies have focused on the social attributes which motivate certain person toward the use of psychedelic drugs. For Blum (1969b) desire for self-understanding represents one of the strongest motives for LSD use. Goldstein (1970) reported that users of psychedelic drugs scored lower on measures of a sense of well-being. Brehm and Back (1968) reported dissatisfaction with the self and a willingness to change the self by means of chemical agents as pre-condition for LSD use. Davis (1971), Tec (1970), and Roth (1971) found greater parental distance and lack of communication for heavy users. Blum (1969b), Goldstein (1970), and Kenniston (1966, 1968) have found less responsibility, social maturity, and self-control, as well as alienation from societal values, disenchantment with society, a sense of being different from expectations, cynicism about social obligations, and pessimism about the future among users of psychedelic drugs. The findings of other investigators (Klechner, 1968; McGlothlin and Cohen, 1965) portray the user as out of touch with himself and others.

Cannabis

Cannabis (marijuana, pot, grass, hashish, reefer, hemp, etc.) is an annual plant normally occurring in male and female forms. It is probably indigenous to Central Asia (Bouquet, 1950; blum, 1969b) but now grows wild in most temperate to tropical climates.

The most comprehensive and contemporary report on marijuana use in the United States, up to this time, is the Report on the National Commission on Marijuana and Drug Abuse (1972). The Commission reports that because the immediate effects are subjective and individualistic, they are difficult to describe. Characteristically, the effects are not constant, but cyclical in nature. In low "social" doses there occurs

. . . an increased sense of well-being; initial restlessness and hilarity followed by a dreamy carefree state of relaxation; alteration of sense perceptions including expansion of space and time; and more vivid sense of touch, sight, smell, taste and sound; a feeling of hunger, especially a craving for sweets; and subtle changes in thought formation and expression (1972:68).

In very high doses

. . . psychotomimetic phenomena may be experienced. These include distortion of body image, loss of personal identity, sensory and mental illusions, fantasies, and hallucinations (1972:68).

Animal pharmacological studies reveal that marijuana primarily affects the central nervous system (Lieberman and Lieberman, 1971; Pillard, 1970; Carline, 1968; Carlini and Masur, 1969). Tetrahydrocannabinol has been consistently shown by these studies to affect animals by acting through the central nervous system.

Patterns of Use

Cannabis has been taken in moderate amounts on a casual basis to foster personal sense of ease, freedom, and relaxation, to serve as a social lubricant, and as evidence of friendship and of membership in particular groups (Chopra and Chopra, 1969; Smart and Jackson, 1969). This phenomena has been observed in many geographic areas, among many different sociocultural groups, and at various points in time (Blum, et al., 1969a).

Cannabis use is related to age. It is generally most popular among adolescents and young adults (Manheimer, et al., 1969; Soueif, 1967). However, consumption in India shows fairly even age distribution (United Nations Economic

and Social Council, 1957), while in Thailand it has reportedly been largely restricted to the elderly (U.N. Commission on Narcotic Drugs, 1965). At present initiation is most frequent during adolescence (Robins, et al., 1969; Soueif, 1967), but Chopra and Chopra (1939) found that 40 per cent of their sample of regular users began after the age of thirty years.

In general, cannabis users have tended to belong to certain socio-cultural groups. Except in relation to the current upsurge in Europe and the United States, its use has been mostly restricted to the lower socio-economic groups. This was true also among earlier users in Europe and the United States (Charen and Perelman, 1946; Freedman and Rockmore, 1946). At one time cannabis preparations were widely used by the upper classes in India (Indian Hemp Drugs Commission, 1894), among whom the occasional ceremonial use of bhang was quite common. A few authors indicate that the use of cannabis preparations is widespread, but not readily apparent, among the upper sociocultural classes of North Africa (Bouquet, 1951; Roland and Teste, 1958).

In countries with a long history of cannabis use, extremely poor rural workers are often able to fit moderate use of cannabis into their routine of living, with little tendency to increase the frequency of amount; when they migrate to city slums, however, increased and undisciplined patterns of use often develop (Chopra and Chopra, 1957; Roland and Teste, 1958).

Poverty has been reported as being associated with cannabis use, but recent patterns of use have clearly not been confined to the poorer sections of the community.

Not only have various degrees of social alienation been noted in connection with some use of cannabis (Blum, et al., 1969b), but cannabis use is also associated with prior use by the father or other members of the family (Smart, 1970); early initiation has been found to be positively correlated with long and heavy use by family members (Stringaris, 1933).

In a word, the diffusion and effects of psychotropic drugs depends largely on the cultural context of the absorbing society. But, besides the specific, pharmacological nature of each drug, much of the effects are contingent on non-drug variables of which the social context and the expectations of actors are important. However, apart from these subjective and situational factors, there are certain more or less well defined effects proper to each drug. These effects are summarily presented on the following chart.

In sum, three broad categories of drugs are identifiable based on the nature of dependence they produce and their capacity to induce psychotoxicity and antisocial behaviour. First, there are weak psychoactive drugs; of these, tobacco alone will be included in this study. Tobacco produces weak psychoactive effects. It may produce psychologic dependence, but it does not induce antisocial behaviour. Stimulant psychoactive drugs include amphetamines, cocaine, hallucinogens and cannabis. They act on the central nervous system. The component common to them is their ability to induce psychologic dependence. With the exception of cannabis, they also produce tolerance and severe and often violent antisocial behaviour during administration. The third group of drugs can be termed depressant psychoactive drugs. These include alcohol, barbiturates, opiates, morphine and alternates. Characteristic of these drugs is their capacity to produce strong psychotoxicity, tolerance, psychologic and physical dependence, and antisocial behaviour. Pharmacologically, these represent the strongest type of dependence-producing drugs. It is the task of sociological theory to address itself to the social processes governing drug-using behaviour.

FIGURE 1

SUMMARY PRESENTATION OF DRUG EFFECTS

Name	Slang Name ¹	Tolerance	Dependence		Effects
			Psychological	Physical	
Heroin	H, Horse, Scat, Junk, Smack, Scag Stuff, Harry	Yes	Yes	Yes	Sedation; euphoria; relief of Pain; impaired intellec- tual functioning, and coordination; loss of appetite and weight; constipation
Opiates, Opium	"O", Op	Yes	Yes	Yes	
Morphine	White Stuff	Yes	Yes	Yes	
Codeine	School Boy	Yes	Yes	Yes	
Methadone		Yes	Yes	Yes	
Tobacco	Coffin nail, Fag Smokes	Yes	Yes	Perhaps	Relaxation; calmness; Socialability
Ampheta- mine	Bennies, Dexies Speed, Wake-ups, Lid Poppers, Hearts, Pep Pills, Beans, etc.	Yes	Yes	No	Alertness, activeness, insomnia, weight loss, irritability, restlessness, euphoria
Cocaine	Corrine, Gold Dust, Coke, Bernice, Flake Star dust, Snow, 'C', Candy, Charlie, etc.	No	Yes	No	Excitation, talkativeness, alertness, insomnia, loss of appetite, euphoria, extreme irritability
Marijuana	Pot; Grass, Tea, Gage, Reefers, Kif, Bhang, etc.	No	Yes	No	Relaxation, euphoria, increased appetite; percep- tions, sociability

Name	Slang Name ¹	Tolerance	Dependence		Effects
			Psychological	Physical	
LSD Mescaline Peyote Psilocybin	Acid, Sugar Trips, big D, Cubs, "A"	Yes	Yes	No	Distortion of senses, insightful experiences, impaired coordination, anxiety
Barbiturates	Barbs, Blue Devils, Yellow Jackets, Phennies, Peanuts, Blue Heavens, Blue Dolls, Blue Bullets, etc.	Yes	Yes	Yes	Sleep induction, relaxa- tion, sedation, drowsiness, impaired judgment, reaction time, coordination, and emotion control, weight loss, relief of anxiety
Alcohol	Booze, Juice Hooch, Suds, Brew, Hard Stuff, Grapes	Yes	Yes	Yes	Sense alteration; anxiety reduction; impaired judgment, reaction time, coordination, emotional control; anti- social behaviour; brain and live damage

¹Adapted from Oakley S. Ray, Drugs, Society and Human Behavior. Springfield, Ill.: C. V. Mosby, 1972.

CHAPTER II

THEORETICAL FRAMES OF REFERENCE AND HYPOTHESES

Theoretical Frames of Reference

The etiology of drug use has been studied from various disciplinary perspectives. In general, causal explanations of drug use have depended heavily on either psychological and psychiatric theories of behaviour. In near unanimity, investigators have described the drug-user as maladjusted, hostile, immature, dependent, manipulative, narcissistic, etc. (Brill, 1960; Kuh, 1961; Diskind, 1962; Chein, et al., 1964; Yablonski, 1965). Accordingly, drug taking is viewed as "an adjustive response to an inner world of unbearable tension" (Ausubel, 1962). People who take drugs do so as an adaptation to deep-seated psychological needs which are a function of crises encountered in the process of adolescence; or the failure to identify with the father figure (Chein, et al., 1964; Winick, 1957). However, sociological explanation of drug use focuses not on personality characteristics, but on the social factors and processes that determine this behaviour.

Sociological Orientation

In general, sociological theorizing about drug using behaviour has consistently mentioned two variables: social organization and class position (Fort, 1966; Isbell, 1955). Central to this orientation is the Mertonian concept of differential legitimate opportunity structure, and anomic adaptation consequent on structural strains. Since Emile Durkheim (1897) originally employed the concept of anomie as an explanation of differentials in suicidal behaviour, the concept has been used by Merton to account for various forms of deviance, including drug use. According to Durkheim, a disturbance in societal

regulations to which a person has become adjusted could be as intolerable as to produce suicidal behaviour. Merton (1955), and Cloward and Ohlin (1966) suggest as a causal factor of deviant behaviour, the blocking of both the legitimate and illegitimate roads to success. Such blocks are incongruent with the cultural emphasis on achievement. The attending frustrations are apt to produce various types of anomic adaptation, one of which is retreatism. The drug user is viewed as withdrawing or retreating from both the goals and means. This theory is subject to criticism on the following points: first, it does not explain why many others who also experience such frustrations do not select this mode of retreatist adaptation. Second, it fails to explain why persons other than lower-class, disadvantaged persons use psychoactive substances.

Merton's approach represents the utilization of the order perspective of social organization as an explanatory framework of drug-using behaviour. For him, drug taking represents a specific mode of anomic adaptation or adjustment to social strains. This notion implies a certain amount of societal discontent, and readjustment to this situation. This perspective, abstracted from its socioeconomic contents, can be a viable explanatory framework of non-conforming behaviour within various types of social systems.

Rational action is goal-directed. It entails inputs, outputs and rewards which can as well be the measure of the degree of work satisfaction on the part of the actor. For the high school student, "going to school" is a rational, goal-directed action. Output and rewards are measured mainly in terms of how good the student functions within the school system. Where his performance consistently falls below the level of expectation, situations of strain may arise affecting his entire self-system. It is suggested here that such strains and stresses and low self-esteem, inconsistent with the

Success ethic of the middle-class, has the potential of leading the strained student to select compensatory but anomic modes of adjustment which may involve the use of psychotropic drugs.

Deviance Perspective

The conflict model of social organization is a broad theoretical basis for the study of drug-using behaviour. This perspective refers to "what is required to grow and change, rather than to adjust to existing practices and hypothesized requirements for the maintenance of the social system" (Horton, 1966). Within this broader perspective, the labelling of drug-using behaviour as deviant "is a manifestation of conflict situation", and "the labelling process itself is also indicative of conflict . . . Deviance as it describes either the behaviour or the label involves the means by which actors strive for goals within a socio-political context" (Denisoff and McCaghy, 1973). In terms of this model, drug-using behaviour is a conflicting social phenomenon both from the societal and subsocietal point of view. In other words, this behaviour is the concrete manifestation of a new value system, or what Messer (1971) calls a "radically redefined world view." Such a new value system demands counter norms. Stated differently, adolescents who subscribe to selecting this mode of rational behaviour--drug use--also subscribe to a shared value and normative system radically different from that of the larger societal values and norms. It is these counter norms which define "appropriate" and acceptable behaviour of subsocietal members who subscribe to a definite subculture. It is to be expected that societal reaction to this rational behaviour, far from having an inhibiting effect, would tend to reinforce this value and normative system, with the latent effect of making actors, sharing as they do a commonality of ideological seedbed, to gravitate toward each other for support for their behaviours.

It is within this larger theoretical framework that a narrower, more specific and relevant theory will be formulated as a framework for the explanation of drug-using-behaviour of students.

Labeling Orientation

As deviance theory of the symbolic interactionist persuasion has shown in so many differing connections (Becker, 1963; Davis, 1961; Freidson, 1965; Goffman, 1963; Kitsuse, 1961; Lemert, 1962) the act by the community of successfully labeling a particular practice as deviant invariably constrains the "deviant" to "structure much of his identity and activity" (Strauss, 1959) in terms of such imputations of deviance. Deviants have a tendency to gravitate towards each other in order to gain support for their deviancy. Accordingly, support for behaviours and ideas is believed to be more necessary the more negatively these are defined by outsiders (Becker, 1963; Cohen, 1955).

Variants of Interactionism

Becker (1963), in his attempt to handle theoretically drug taking behaviour, discusses how one must learn a rationale as a pre-condition for the use and enjoyment of marijuana. In taking this view Becker, in effect, is using the differential association theory formulated by Sutherland (1955) which leans heavily on symbolic interaction and reference group theory.

The statement of differential association theory holds, in effect, that "criminal behaviour is learned in interaction with persons in a pattern of communication" and that "the specific direction of motives, drives, rationalization and attitudes is learned from persons who define the codes as rules to be observed, and from persons whose attitudes are favourable to the violation of legal codes" (Sutherland and Cressey, 1960). Otherwise stated, deviant behaviour is learned through the process of interaction.

Glaser (1961), in his search for a more heuristic concept, offers his

differential identification theory as an alternative to differential association. Defining identification as "the choice of another from whose perspective we view our own behaviour," he formulates his theory that "a person pursues criminal behaviour to the extent that he identifies himself with real or imaginary persons from whose perspective his criminal behaviour seems acceptable" (Glaser, 1961). As a theory, it emphasizes social interaction in which there is a choice of behaviour models and also interaction with himself in rationalizing his behaviour. This orientation is substantially a reference group theory, and Glaser suggest that such a theory is adequately explanatory of deviant behaviour in general.

The discussions of Sutter (1969), Goode (1970), and Feldman (1968), reflect substantially the interactionist theoretical perspective. In discussing the normal social processes within the drug world, Sutter (1969) and Goode (1970) note that to "turn someone on" means to introduce him to the drug. It is an expression of friendship, trust, and acceptance. Most youth are introduced to the drug in the normal course of living by a close friend. After they have learned to use drugs for pleasure, being turned on and turning others on becomes "an established social practice." Entrance into drug use, observes Sutter (1968)

. . . is a developing experience and a highly selective process that depends on access to drugs, acceptance by drug-using associates, kinds of images which youngsters form of drug use, and the runs of experience which affect their interpretation of the drug effects ("trips").

This suggests the interpretation of drug use as part of a subcultural way of life (Suchman, 1963) in which the "converts" are involved in the "active creation of meaning" (Matza, 1969).

This alternative explanation of adolescent drug use departs remarkably from the psychological predisposition and social structural weakness of the

neighbourhood toward the social processes whereby drug users, both before and after drug experimentation, interact with important members of their social network and move toward identity with them. In this way, drug experimentation may be seen as "growing out of an ideological seed-bed" (Feldman, 1968), where rewards of status and prestige are conferred upon each other. Rather than viewing drug experimentation as the result of "acting out internal problems" (Ausubel, 1968, and many others), or the consequence of failure in legitimate and illegitimate social structure (Merton, 1955; Cloward and Ohlin, 1966), drug users could be seen as playing an active, conscious role in their introduction into drug use by striving towards a high status within their social world. The student turns to drugs, observes Feldman (1968), "not as a result of anomie, but rather to capitalize on an alternative mode of enhancing his status and prestige within a given social system."

The foregoing observations do suggest that adolescent drug-using behaviour could adequately be handled by the general theory of interaction and reference group theory. Briefly stated, reference group theory holds that "human beings derive their norms from the groups with which they identify, not only from groups to which they are exposed" (Brooks, 1963). And Page (1954) states:

That men act in a social frame of reference yielded by the groups of which they are a part is a notion undoubtedly ancient and probably sound. Were this alone the concern of reference group theory, it would merely be a new term for an old focus in sociology, which has always centered on the group determination of behaviour. There is, however, the further fact that men frequently orient themselves to groups other than their own in shaping their behaviour and evaluations . . .

In other words, individuals learn the appropriate norms of conduct from the groups they feel are significant to them.

In terms of drug-using behaviour this would mean that an individual will

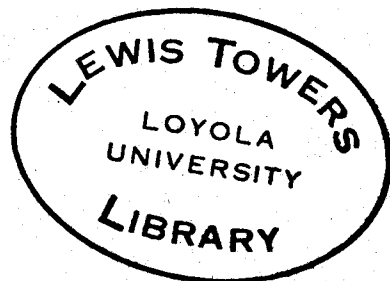
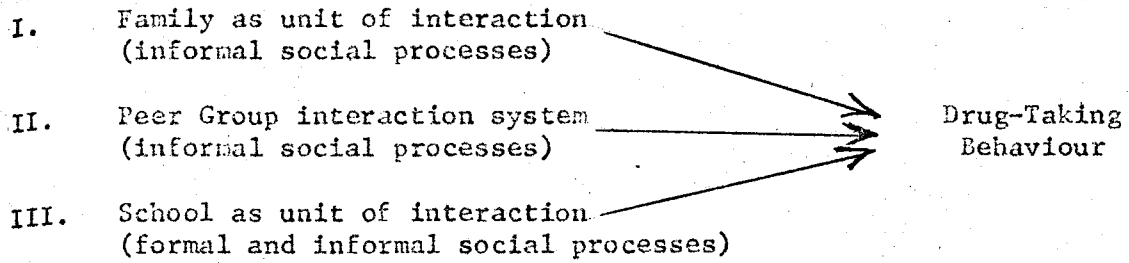
tend to manifest behaviour patterns similar to his significant others or reference group. Hence, if one's primary group constitutes one's reference group, then one's drug taking behaviour will tend to be contingent on the nature of the group's normative definition of this behaviour.

In sum, certain assumptions and postulates of use of psychotropic substances by students need formal formulation. First, it is the basic assumption of this study that drug-taking behaviour is a rational, human behaviour. As such, the structure of this behaviour follows the laws and logic of any rational, human behaviour. However, the distinguishing characteristic of this behaviour is that it is defined as a nonconforming or deviant behaviour. It is behaviour that does not conform to generally accepted conduct norms of the larger society. It follows from this first postulate that drug use constitutes a conflict situation in which response of society latently reinforces the counter norms of the "outsiders." Hence, "outsiders" will tend to structure their interaction selectively in the direction of other "outsiders." Therefore, with regard to the high school situation, the process of social interaction, formal and informal, in and out of school, will tend to be a crucial determinant of which student will use what type of mind-altering drugs. It is these basic adolescents interaction systems which most likely determine the likelihood of his using drugs.

An adolescent's basic interactions revolve around a number of primary social processes consisting of the family, the peer group and specific organized groups within the school environment. The direction specific behaviour of any given student will take will depend largely on the extent of his identification with any of these groups.

In terms of theoretical orientation, three systems of interaction, consisting of the family, the peer group and the school, are identifiable (cf. Figure 2).

FIGURE 2
SUMMARY OF THEORETICAL INTERACTION SYSTEMS



Each of these is a face-to-face interaction unit. It is suggested here that these units of interaction constitute crucial factors both for the way a student comes to define himself, and the type of behaviour consequent on such definition.

On the basis of this theoretical discussion and the literature reviewed, we now proceed to formulate specific hypotheses about high school student drug-using behaviour.

Hypotheses

In dealing with the family, peer-group, and school as units of interaction, it is important to know what kind of properties and conditions of these units are associated with differentials in student drug-using behaviour. Viewing the family of orientation as a specific interaction unit, what seems to be crucial for student behaviour is the availability and quality of parental models for behaviour and, to some extent, parental socioeconomic status.

The Family Structure

The importance of both parents as behaviour models for their children has been recognized by sociologists and psychologists. Accordingly, the absence of one parent is said to impede the process of identification, resulting in problems of adjustment (Charen, 1946; Blum, 1969b; Tec, 1973). Einstein, for instance, reports that of 50 per cent of drug addicts a significant male figure was missing by the time the addict was eleven years old. Chein and his associates (1964) found that "in almost all the addict families there was a disturbed relationship between the parents . . ."

Seevers (1972), citing a number of empirical studies, notes that a relation exists between variations in family relationships and the emergence of drug use or non-use on the one hand, and between the degree of deterioration in family relations and intensity of drug use on the other. Factors studied range

from complete to incomplete homes to foster homes, contact or non contact with parents. The non-user is at one end of the scale with well-adjusted family relations, and the intensive drug user at the other end, showing the highest degree of disruption.

It has also been observed that the contemporary opiate user does not appear to be so fortunate in birth and rearing (Hess, 1971; Ball and Moffett, 1970). The United Nations Commissions on Narcotic Drugs (1972) has made the observation that opiates are used to compensate for parental and emotional deprivation. A history of weak or absent father and an indulgent but rejecting mother is at the background of opiate use. Hence, we may hypothesize that: (1) the less intact the family, the more the likelihood that the offspring will use drugs; (2) the less satisfying the family relations, the more the likelihood that students will use drugs.

The degree of family intactness is measured by inquiring into the structure of the family within which students grew up for the greater part of their lives. The ideal intact family is one in which both parents live together; whereas the less intact family is one which involves the absence of either the father or mother figure from the family as a result of death, or separation or divorce. In terms of our hypothesis, we would expect to find that student drug users would tend to come from the second type of families, that is, from families in which students have been reared for most of their lives in the absence of one of the parents.

Value Transmission

While there is some evidence that families of young drug users tend to be less close emotionally than those of young people not using illegal drugs (Tec, 1970; Pittel, 1971), it is also true that parents who drink and smoke and who use prescription drugs stand a significantly higher chance of raising

children who experiment with, and use illegal drugs (Good, 1972; Laventhar, et al., 1971; Lawrence and Velleman, 1970). In his studies, for instance, Kieholz (1972) found at least 60 per cent of drug users to be from families with histories of alcoholism, abuse of drugs by mother, suicide and suicidal attempts. Similarly, student cannabis use has been found to be associated with prior use by the father or other members of the family (Blum, 1969b; Chopra and Chopra, 1939; Soueif, 1967; Smart, et al., 1970), and early initiation has been shown to be positively correlated with long use and heavy use by family members (Stringaris, 1933; Robins, et al., 1968). Amphetamine-using students tend to come from homes in which drugs, especially tranquilizers and sleeping pills have been used by one or both parents (Smart and Cos, 1970). Hence, we may hypothesize that: the more involved parents are with drugs, and more the likelihood that their offspring will use drugs.

In operational terms, students indicating that either of their parents has used any of the drug-cannabis, LSD, amphetamines, barbiturates, heroin--are more likely to be involved with drugs than students indicating that neither of their parents has used any drugs. A similar argument could be made with regard to the siblings of students.

Socioeconomic Factors

The literature dealing with drug use by students recognize that one of the determinants of this behaviour is the socioeconomic status of the family of orientation. Preston and Fry (1971) observe that student drug user is more likely to be of higher socioeconomic status than the non-user. His parents are distinctly middle-class in terms of education and occupation (Greenwald and Leutgart, 1971; Brotman, 1967; Kenniston, 1968). Admittedly, opiates and marijuana have had a long history of use in urban ghettos (Ball and Chambers, 1966). However, these drugs appear to have diffused more rapidly

in recent years to persons with substantial incomes than to persons with more moderate incomes. Unlike the urban, ghetto, minority and, therefore, disadvantaged persons, the new heroin user is the white, middle-class youth, alienated and frustrated (Buxbaum and Martin, 1972). Surveys by Barter and his associates (1970), and Suchman (1967) and Blum (1969b) confirm this relationship between drug use and high socioeconomic status. This is particularly true of students who use barbiturates and amphetamines (Durant, 1965; Smart and Cox, 1970), and hallucinogenic substances (Greenwald and Leutgart, 1971). Therefore, we may hypothesize that: the higher the socioeconomic status of parents, the greater the likelihood that students will take drugs.

Parental socioeconomic status is measured in terms of the level of education and type of occupation. In the case of education, the point can be made that student drug users are more likely to come from more highly educated parents, that is, parents who have at least a college education. The contention can also be made that these parents are more likely to be of higher occupational status--professionals, business managers, white collar employees--than those of non-drug-using students.

Religious Affiliation

Of related interest is the religious factor. High rates of drug use have been found to be characteristic among persons who profess to have no religious affiliation or have no interest in religion (Whitehead and Brook, 1973; Blum, et al., 1969b; Mauss, 1960; Whitehead, 1970; Greenwald and Leutgart, 1971; Kohn and Mercer, 1971). This had been interpreted as a form of rejection by adolescent drug-users of the values of parents (Breda, 1971; Somerhausen, 1971; Sohms, 1968). Adler and Lotecka (1973), for instance, recognize that student drug use varies negatively with church participation; the greater the involvement in church, the less the drug usage. These findings are consistent with

other reports. Blum (1969b) has observed that amphetamine and barbiturate-using students seek new experiences, and have no religious affiliation. Similarly, use of hallucinogens is heavy among students who characterize their religious affiliation as "agnostic" or "none" (Greenwald and Leutgart, 1972). Since our community is predominantly Catholic, it would be of interest to see whether the few exceptional cases will tend to support the findings cited above. Hence, we would hypothesize that: (1) the less religious the background of students, the more likely are they to use drugs. Otherwise stated, drug users will tend to indicate that they have no religious affiliations; (2) the less involved students are in religious activities, the more likely they are to use drugs.

Peer Group Relations

Initiation into the use of mind-altering drugs as well as its continuous use is believed to take place within the context of the immediate peer group. Relative uniformity exists on this point. Even with respect to narcotic drugs, the introduction of use takes place via the peer group (Chain, et al., 1964). Opiate use, like marijuana smoking, is "cultogenic" and "sociogenic;" it is a peer group phenomenon pursued in a recreational and peer setting (Chopra and Chopra, 1965; Ball and Chambers, 1970; Kolb, 1962). There is usually a strong identification with drug-taking groups, frequently assuming the form of a drug-taking subculture. Association with the group becomes almost essential to the individual's sense of well-being (AMA Dept. of Mental Health, 1971; Proctor, 1971). Some have hypothesized that drug use, from the earliest stages of its development, is instrumental in the expression of friendship, trust, and interpersonal acceptance, implying that it may be more frequently employed by those who value such interpersonal goals (Blume, 1967; Nisbet and Vakil, 1971; Becker, 1963; Goode, 1970). Hence, covert or overt

peer pressures are at the background of drug-taking behaviour. This seems to be significant in all age groups and at all levels of society. As Dolner (1971) observes, "one is thought of as a 'queer duck' just as much for abstaining from alcoholic drinks at certain social functions, as for refusing marijuana, 'pills', or amphetamines at others." Drug-taking activity can thus be used to attain status within a group (Sutter, 1966), and as a response to behavioural expectations of significant others.

In this connection Leech and Jordan (1971) observe that there is motivation for a person to "do right" in the eyes of his peers who can exercise behaviour modification in various ways. Likewise, Connell (1964) writes: "teenagers take drugs to be with it." Blum (1969b) gives the following as reasons why young people take drugs: "give it a try; because others did it, to be a good sport in the eyes of peers; desire to be hero; and part of group membership." Winick similarly observes that drug taking sometimes serves as an entry to a group. Becker (1963) and Goode (1970) refer to the "cultogenic" and "sociogenic" nature of some drugs. Thus, if one's peer-group serves at the same time as one's reference group, then one's attitude to drug-taking will have to be determined by how the group defines drug-taking behaviour. Dai (1937), Chein (1964), and Finestone (1964) suggest this to be the case. On the basis on the foregoing observations it can be hypothesized that:

A substantial portion of drug-using youngsters would also have drug-using friends.

In other words, students reporting use of any of the drugs are more likely to indicate that their friends also use drugs. Furthermore, the more involved students are with the use of drugs the higher is their perception of peers and friends using drugs, and the more likely are they to perceive the use of drugs as a quest for fun and the less likely are they to explain it in terms of group pressure.

Formal Social Affiliations

It has been observed above that drug-taking behaviour has to be viewed within the context of normal social processes. Peer groups constitute informal social interaction contexts. Various organizations within the school environment, on the other hand, constitute formal interaction contexts. Whether such formal social processes within the school environment have any meaningful influence on the nature and extent of student drug use is a problem area that deserves exploration. Indeed, Blum (1969b), Linn (1971), and Tec (1972) suggest that differential student drug use is contingent on varying affiliations with formal student organizations. Since experience with drugs almost always occurs in social contexts, and since such experiences are not equally distributed among all people within any given community, we might hypothesize that:

The more involved a student is in school organizations, the more the likelihood that he will use drugs. Furthermore, the pattern of his drug-using behaviour will be contingent on the type of groups to which he belongs. The nature of experience with drugs will be significantly related to the type of social groups with which students are involved or identified.

Otherwise stated, drug use patterns in terms of student involvement with drugs and the drug of preference, will tend to be contingent of what school organizations he belongs to, or what school activities he participates in. This, in effect, invites the speculation that school organizations and/or activities have at least the latent function of providing differential exposure to, and opportunity for, the experimentation with psychoactive substances. In comparison with their non-drug-using peers, student drug-users will be more active socially, and will tend to participate in wider range of activities with other young people.

Level of Performance

The studies of Chain and his associates (1964) found young heroin addicts to be under-achievers both in the vocational and educational fields. Fort (1955) also recognized his patients to be "in revolt against what they considered the competitive, striving aspects of American society." This raises the interesting question of relationship between the quality of performance in school and the use of drugs by students.

On this point there exists no consensus. Smart (1972) and Wiener (1970) recognized a greater likelihood of drug use by students who perform unsatisfactorily in school. The Utah Governor's Citizen Advisory Committee on Drugs (1969) indicated that a much higher proportion of high school dropouts were involved with drugs than other students. Blum (1969b), on the other hand, infers from a vast mass of data that drug experience is not a predictor of grades.

Whether this holds true for high school students is hypothetical. To fill this gap in knowledge we would hypothesize that:

The poorer the performance at school, the more the likelihood that students will take drugs. In other words, drug users, as compared with non-users, are more likely to be less than B students. This would tend to suggest that students "with similar problems of adjustment" (Cohen, 1955) to their academic role would tend to interact frequently for support. This suggestion will gain support only if a significant proportion of under-achievers use drugs, and if the closest friends of such under-achievers are also under-achievers, and are much involved with drug-using subculture.

The sections that follow will discuss procedures for, and actual testing of, these hypotheses.

CHAPTER III

METHODOLOGY

Data Gathering Procedures

Questionnaire Data

The data were gathered in two stages: first, by a self-administered questionnaire involving the entire student community and, second, by an interview of a limited, randomly selected number of students.

The parameters of our research problem have been so defined as to focus on social processes that are likely to be determinants of student drug-seeking behaviour. The content of the questionnaire specifies these social determinants and processes. A group of high school students from the same school were involved in the construction of the questionnaire. They were given the opportunity to express their views on and make suggestions about all the items in the questionnaire. A number of these suggestions were incorporated into the final questionnaire. All the items of the questionnaire were written in the form of close-ended questions.

Data Gathering Processes

After the necessary permission for the study had been obtained from the appropriate administrative personnel of the school, arrangements were made regarding the practical details for gathering the data. On the day agreed upon, in the month of October, 1973, a group of sociology graduate students under the supervision of one of the department's graduate faculty, went to the school where, with the appreciative cooperation of the faculty of the high school, they spent the entire working day gathering the data. All the

questionnaires were administered during the English class. A graduate student was assigned to each class to supervise the task. Before handing out the questionnaires, a short statement of the objectives of the survey was read. The students were asked to respond to the questions with seriousness and honesty. Despite the anonymous nature of the instrument, it was explicitly explained to the students that the researchers were committed to treat all responses as confidential. The questionnaires were then handed out to the students and, after the instructions were read out to students and any related questions or problems were handled, respondents filled out the questionnaires.

The first twenty-five minutes of the class were specifically set aside for filling out the questionnaires. When all students had finished filling out their questionnaires, the supervising graduate student gathered them and expressed his appreciation for the cooperation of students. The support and cooperation of the administration and faculty is a fact that deserves mention;

monstrable seriousness of students in their general approach to

The data were subsequently transferred to Hollerith cards for analysis and testing of hypotheses.

The Interview

In order to insure a certain amount of validity and reliability to the study, it was decided to supplement the questionnaire data by interviewing some of the students. The content of the interview was substantially the same as the questionnaire in that it explored the same behavioural and socio-cultural dimensions that were measured by the questionnaire. The instrument for the interview was a revision of the questionnaire. Some questions were added in order to fill in gaps in the questionnaire data, and to explore at greater depth some other more relevant variables. The principal of the school was contacted for the necessary permission to interview the students and to

decide on the appropriate place for the interview.

To select the interview sample, we obtained a computer print out of all students indicating their year in school and grade point average. From these sources, a stratified random sample was selected according to two characteristics: (1) thirty students were selected from each class level and (2) of these students an equal number were high achievers, average achievers, and low achievers, the level of achievement measured by whether a student's grade point average falls within A, B, or C category respectively. A total of 120 students were chosen to be interviewed.

It was hoped that by this type of sample we would embrace a cross section of the student community. On that expectation, it was assumed that the drug-taking behaviour of this stratified, random sample would be a valid index of the drug-taking behaviour of the entire student community. It was also hoped that a research strategy combining questionnaire and interview data would make it possible to test for validity and reliability and further enhance the value of the conclusions that would eventually be drawn from the study.

Interview Procedures

A letter was sent to each of the selected students introducing the interviewer, describing the need for, and purpose of the interview, and appealing to the student to voluntarily participate in the study. A slip of paper was enclosed in each letter on which the student was asked to indicate his willingness to be interviewed, the most convenient time for an interview, and his homeroom number. This information was to be mailed to the researcher in an enclosed, self-addressed and stamped envelope.

The first responses were not very encouraging. Of the 120 students sent invitations, 20 replied and volunteered to be interviewed. Though this

response rate was low we nonetheless went ahead with the interviewing. Meanwhile, contact was maintained with other nonresponsive students in order to encourage them to be more cooperative. The result is that 76 of the originally 120 selected students were interviewed. This represents 63.3 per cent of the entire interview sample.

With regard to the interview itself, preliminary interviewing exercises were undertaken with a group of students as a test of the interview instrument and a training for the interviewer himself. On the basis of these pre-interview exercises the interview instrument was revised for the actual interviewing.

It was the policy of the researcher to adapt himself to the convenience of each student. As far as possible, students were interviewed on the day and at the time indicated by them. On the evening before the interview, direct contacts were made with students to finalize arrangements for the interview. The facilities of the faculty parlors, physically removed from the main school and administrative buildings were at our disposal. It was there that the interviewing took place. All interviewing was done by the researcher. Interviewees were generally communicative and cooperative.

General Characteristics of the Student Community

and the Interview Sample

The study involves the entire community of an all boys, Catholic high school located in a suburban, middle-class neighbourhood. Current student enrollment was 1,200 students. On the day the questionnaire data were gathered, there were 1,107 students in attendance. This represents 92.3 per cent of the entire student community.

The structure of the student community in terms of religion is overwhelmingly Catholic; these constitute 94 per cent of the entire community.

A small proportion of them (3.2 per cent) are of an unspecified religious background, and only a few (1.2 per cent) have no religious affiliation. There are a few Protestants, Orthodox, and Jewish. In terms of education, the students come from generally well educated families. More than one-half (56.3 per cent) of their fathers and at least two-fifths (40.7) of their mothers have at least a college education. Thirteen per cent of their fathers and 5.1 per cent of their mothers have earned a Master's degree, a Ph.D., or a postgraduate professional degree. The occupations of the students' parents reflect their educational level. More than one-quarter (27.7 per cent) of the fathers are professionals, that is, lawyers, doctors, or executives or owners of large businesses. Almost one-third (30.7 per cent) are either business managers, owners of small businesses, or teachers. A small proportion of the fathers (6.2 per cent) are either clerical employees or salesmen. The rest (30.5 per cent) can be termed blue-collar workers, that is, craftsmen, firemen, factory workers, and various types of labourers. Almost one-half (48.5 per cent) of the students' mothers are housewives; one-quarter (25.4 per cent) work full-time, and another one-quarter (24.1 per cent) work part-time. In summary, then, the students contained in the present sample come from predominantly Catholic, middle-class, suburban backgrounds.

The Interview Sample

To what extent does the interview sample share the characteristics of the entire student community? The similarities are greater than the differences. Understandably, the overwhelming majority (96.1 per cent) are Catholics, with 1.3 per cent Protestants, 1.3 Orthodox, and 1.3 per cent belonging to other religious groups. Both the educational and occupational status of their parents are high; for more than two-fifths (43.9 per cent) of their fathers have at least a college education. Of the rest, almost one-fifth (19.7 per

cent) have some college education; 28 per cent are high school graduates, and only an insignificant number (7.9 per cent) are less than high school graduates. Slightly more than two-fifths (44.7 per cent) of the mothers of the interview sample are high school graduates; 21.1 per cent have some college education, and more than one-third (34.2 per cent) have at least a college education. In comparison with the entire student community, fewer of the mothers of the interview sample (42.1, per cent) are housewives, and more (31.6 per cent) are professionals; almost one-fifth (18.4 per cent) are managers of businesses, 42.1 per cent are skilled workers, and only 5.3 per cent are unskilled labourers. It can be said, then, that there is a correspondence in major characteristics of parents of the entire student community and of the interview sample.

Background Characteristics of Students

It is of some relevance to further describe the students in terms of their background characteristics: age, year in school and grade point average. In terms of age, students who are 14 years old account for 29.2 per cent of the entire student community; almost one-quarter (24.7 per cent) of all students are aged fifteen, and an almost equal percentage (24.4 per cent) are aged sixteen. Exactly one-fifth (20.0 per cent) are aged seventeen, and only a very small number (1.8 per cent) are at least 18 years old (Table 1).

Distribution of year in school follows more or less the age composition. Of all the students, 29.9 per cent are freshmen, 24.9 per cent sophomores, 22.9 per cent juniors, and 22.0 per cent are seniors; 0.3 per cent did not indicate their year in school. Regarding grade point average, a rather small proportion (8.7 per cent) of all students are A students; 35.0 per cent are B students; and the rest (55.7 per cent) have a grade point average of C+ or less. It is with regard to this last characteristic, that is, grade point average, that

TABLE 1

BACKGROUND CHARACTERISTICS OF STUDENTS

	<u>All Students</u>		<u>Interview Sample</u>	
	N	Per Cent	N	Per Cent
<u>Age</u>				
14 years or less	323	29.2	22	28.9
15 years	273	24.7	19	25.0
16 years	270	24.4	17	22.4
17 years	221	20.0	15	19.7
18 years or older	19	1.7	3	3.9
Total	1,106	99.9	76	100.0
<u>Year in School</u>				
Freshmen	331	29.9	24	31.6
Sophomores	276.	24.9	20	26.3
Juniors	254	22.9	16	21.1
Seniors	243	22.0	16	21.1
Total	1,104	99.7	76	100.0
<u>Grade point Average</u>				
A and above	96	8.7	21	27.6
B to B+	387	36.0	23	30.3
C- or less	615	55.7	32	42.1
Total	1,100	99.4	76	100.0

large differences between the interview sample and the entire student community exist. This is understandably so since grade point average was one of the bases on which the interview sample was stratified. Other than that, the differences in characteristics between the interview sample and the entire student body tend to be minimal and, therefore, should pose no serious difficulties in comparison.

Description of Variables

The main dependent variable of the present study is the extent of involvement with psychoactive substances, which has been described as the varying degrees of experience students have had with drugs.

Measure of experience with drugs is designed to tap direct contact of students with drugs and frequency of use of mind-altering substances. To establish this frequency, students were asked: "During the past twelve months have you used any of the following substances? Do not include drugs given by prescription or in the hospital, nor wine used in religious occasions." This question was followed by a list of twelve drugs and the frequency of use of each drug was to be recorded according to the following categories: never, once or twice, 3-9 times, 10-49 times, 50 times or more. The responses to these items were utilized to construct a five-fold typology of student drug users: (1) abstainers: students who have never tried any drug; (2) experimenters: students who have used drugs once or twice only; (3) casual users: students who have used the substances 3-9 times; (4) regular users refer to students using the drugs 10-49 times and (5) habitual users, those using the drugs more than fifty times.

Social Characteristics

The problem of this study has been defined as the interests, activities and social characteristics that differentiate drug-taking and non-drug-taking

students. It is with regard to social characteristics that we recognize various sources of influences. These characteristics are identifiable in terms of student's self-definition, level of achievement, socioeconomic and religious backgrounds.

A student's self-identification was explored by asking: "Most students can choose one group of people to which they would like to belong. To which of the following groups would you most like to belong? If one group does not exactly describe how you feel, choose the group that best describes your desires: jocks, greasers, freaks, student leaders, scholars or collegiates, other (specify)." Logically, it is of interest to see whether and to what extent the student's self-concept related to other behavioural properties. In this context, our attention focuses on: (1) the level of academic achievement of student: whether he is a high or low achiever in terms of the quality of his grade point average; (2) whether he is of high or low socioeconomic status in terms of the education and occupation of his parents, and (3) whether or not he has any formal religious affiliation, and the level of his interest and participation in religious activities.

The within-school variables are the locus of participatory involvement with recognized school organizations, clubs and activities. Since this is one of the predictor variables, it is crucial to explore the quality and levels of student involvement with the school system. More specifically, we are interested in: (1) the number of organizations, clubs or formally organized activities in which a given student participates; and (2) the nature of these activities or organizations. Two broad bases of activities are in mind: (a) athletic activities, consisting of tennis, soccer, golf, basket ball, and cross country; and (b) academic-oriented activities: drama, music, student government, and student publications. What is important is what type of

student engages in what type of organization or activity, and how this activity is related to differentials in use of drugs.

Two other sources of independent variables, that is, the family structure and peer group interactions, will be defined in greater detail in the next chapter. It is sufficient to state here that the behavioural and structural properties of the family which will be analyzed are: (1) intactness: this is determined by whether both the original parents live together at home, or whether there has been some disturbance in that original family structure; (2) value transmission: whether at least one of the parents is involved in the use of drugs, and (3) parent-child relationships: whether these relationships can be described as satisfactory or unsatisfactory.

Regarding peer group relations, our interest focuses on the extent to which a student is involved with drug-taking or non-drug-taking friends.

It is our preliminary contention that the social characteristics, the nature of interests and activities in and out of school, the patterns of peer group relations, availability and quality of models for behaviour and the quality of parent-child relationships all enter into the determination of student drug use or non use; these constitute the sources of independent variables for this type of adolescent behaviour. A systematic analysis of these factors in order to delimit the parameters of their influence is crucial for the understanding of this form of behaviour.

Analytic Frame

In the second chapter of this study a theoretical formulation was elaborated based on the family-school-peer group interaction systems. There, the observation was made that the basic interactions of an adolescent revolve around the family, school and peer group. The teenager is attached to the larger society through role relationships established within and between each

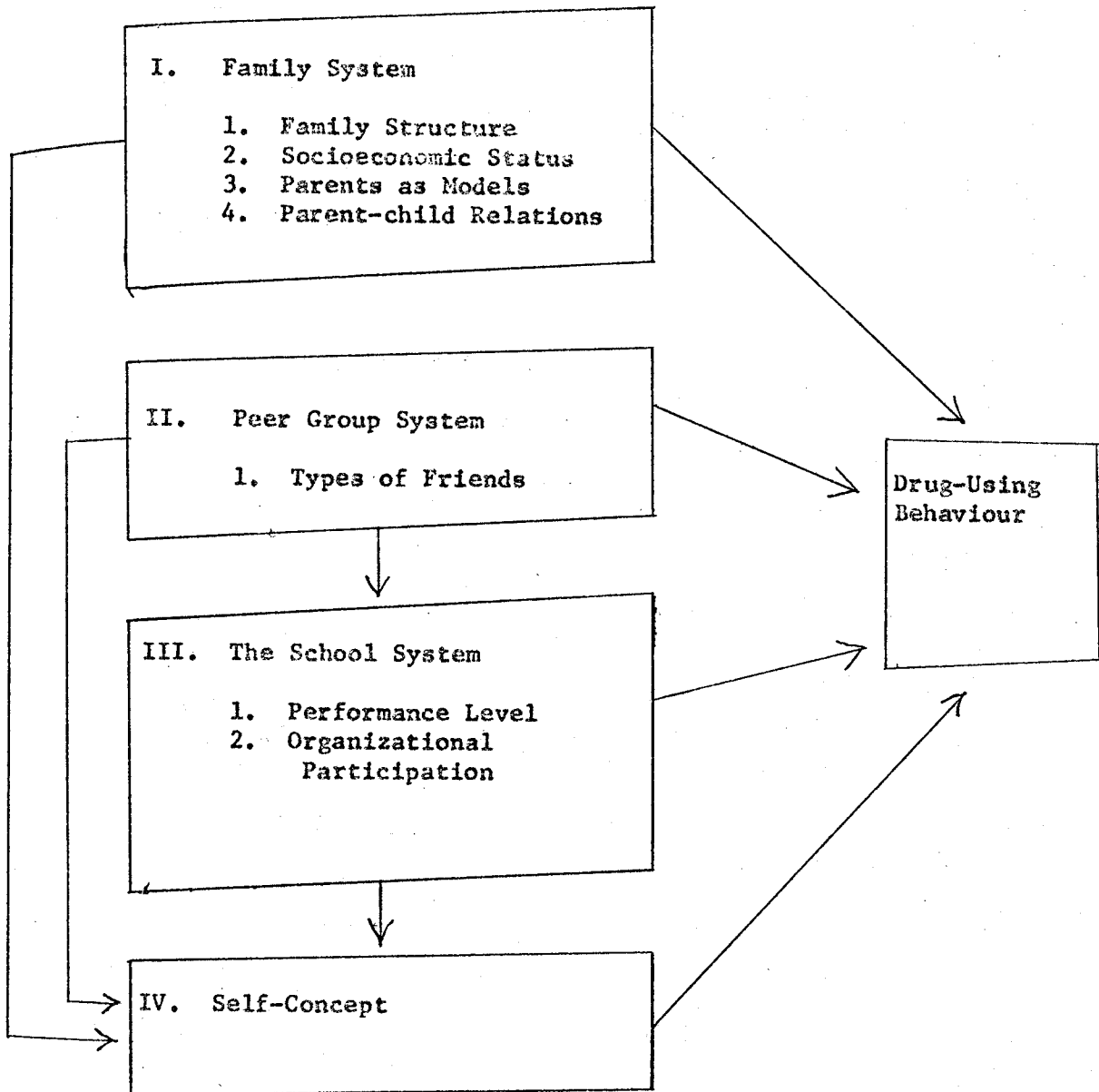
of these units. All three spheres of activity are interrelated, and all can be expected to have impact on an adolescent's attitudes, values and behaviours. As Tec (1973) observes: "to the extent that the family, school and peer group are the most important interaction systems, the appropriate strategy for the explanations of adolescent behavioural patterns should be sought in terms of all these statuses." Thus, there is the need to delimit those properties within these roles which increase the probability of drug use by any given student. The analytic model that gives direction to this study flows directly from the conceptual model discussed above (Chapter II). The model focuses on a number of units of interaction. These include the family system, the peer group system, and the school as a unit of interaction.

Several important aspects of the paradigm are represented in Figure 3. First, each of the predictor systems has a direct linkage with drug-seeking behaviour. Second, each of the preceding three systems--the family, peer group and school--has both a direct and indirect influence on self-definition, that is, the way in which a student conceives of himself. Indeed, it is conceivable that a student's self-concept is a function of all three interacting systems and can be an effective source of behaviour orientation. As Kinch (1963) has observed: "the actual responses of others to the individual will be important in determining how the individual will perceive himself; this perception will influence his self-conception which, in turn, will guide his behaviour." Third, the scheme defines those properties of each interaction unit that can explain the differences in student drug-using behaviour.

Data Analysis

To identify the predictive factors of drug use by students, the data will be subjected to various statistical analyses. First, the predictor and predicted variables will be broken down into percentages. Where the outcome

Figure 3.--Analytical Frame



is reasonably strong, a correlational analysis will be made in order to determine the strength of relationship between predictor and predicted variables. Partial correlational analysis will then be made. This will make it possible to eliminate possible effects of other variables not included in the model. Specifically, there will be the need to control for the effect of background variables like age, year in school, place of residence and previous grade school. Holding these variables constant singly and simultaneously, it will be possible to delimit the influence parameters of each predictor variable. In addition, step-wise multiple regression analyses will be done with all the predictor variables. It is hoped that, besides the explicit testing of hypotheses, the analyses will form the basis for the generation of other useful hypotheses for future study within the drug problem area.

CHAPTER IV

RESULTS

The observation has been made that the family, the school and peer group constitute the most vital adolescent interaction systems. Furthermore, that the adolescent is attached to the wider society through the role relationships established within and between each of these units. The quality and type of adolescent behaviour is largely a function of these three interaction systems. The task of the section that follows is to subject to statistical tests the hypotheses that have been formulated with reference to these three systems of interaction.

The Family as a Unit of Interaction

Various aspects of the family need systematic exploration in order to discover their relationships with student drug-using behaviour. Specifically, this analysis will focus on family structure, socioeconomic status of parents, parents as behaviour models for offspring, and parent-child relationships.

First, family structure.

Family Structure

The importance of both parents as models for their children has been recognized by sociologists and psychologists alike. Accordingly, the absence of one parent is said to impede the process of identification leading to problems of adjustment and to different types of deviant behaviour. To explore the relevance of this concept to the community we are studying, we had hypothesized that "the less intact the family, the more the likelihood that the offspring will use drugs."

Family intactness is measured with reference to the original family structure within which students were raised for most of their lives. The intact family is one in which both father and mother live together; the nonintact family represents various forms of alteration or disruption of the original family structure through divorce, separation or death of one of the spouses.

To measure family intactness, students were asked: "For most of your life, were you brought up by (1) your father and mother living together? (2) Mother alone without stepfather? (3) Father alone, without stepmother? (4) Any other situation involving one or both of your parents? (5) Any situation involving neither of your parents?" The first response alternative indicates a stable or intact family structure, the other alternatives being instances of various types of nonintact families.

The specific type of family structure is our predictor variable. In dealing with this variable, it is vital to define clearly what properties of this unit go with what sort of adolescent drug-using behaviour, and the predictive power of such properties. To explore the level of influence of this predictor variable on differential use of drugs by students, it is imperative to compare the drug-using behaviour of students living under the different types of family arrangements to see whether there exist any significant differences in this type of behaviour. In terms of our hypothesis, we would expect differentials in drug use to correspond to differences in family intactness. In other words, students indicating that they use psychoactive substances would most likely come from homes in which some disruption of the original family structure has occurred. In this case, a comparison of the proportion of drug users under the various types of family arrangements will make it possible to draw some inferences with regard to which type of

adolescent drug-using behaviour goes with what type of family structure.

The available data suggest some relationship between student use of tobacco and marijuana, and the type of family structure under which students have been reared for the most part of their lives. This affirmation is sustained by the fact that a remarkably greater proportion of students from nonintact families (51.7 per cent) than from stable homes (38.1 per cent) indicate that they have smoked marijuana. For the interview data this is 50 per cent and 48 per cent respectively (Table 2). Other than that, the general patterns of reported drug use suggests that family structure is not the best predictor of student drug use. However, there is some exception to this general statement, as is evidenced by the data in Table 3. There, the general pattern of drug use indicates differences in student use of the various drugs among the various types of nonintact families. The evidence invites the conclusion that, with the exception of tobacco and marijuana, student use of drugs appears to be unrelated to whether he has been brought up for most of his life by the father alone. Interestingly, at least three out of every four students from this latter family category are users of marijuana. In comparison, students who have been raised by the mother alone, or by any other relative, demonstrate a consistently higher use of all drugs except marijuana. What these data seem to suggest is that although use of hard psychoactive drugs is not a function of whether or not students are from intact or nonintact families students who have been raised for the most part of their lives by their fathers alone are the most likely to smoke marijuana, and the least likely to use any other mind-altering drugs. However, the relative small size of the number of students within this family category has a mitigating effect on this general observation. This makes it imperative to explore other characteristics and behavioural properties of the family, and their likely influence on student use of drugs.

TABLE 2

FAMILY STRUCTURE BY STUDENT DRUG USE

Use of	Per Cent Within each Family Structure Using Each Drug			
	All Students		Interview Sample	
	Nonintact	Intact	Nonintact	Intact
Tobacco	76.8%	60.8%	69.2%	63.3%
Alcohol	89.7	87.4	92.3	83.7
Marijuana	51.7	38.1	50.0	40.0
LSD	6.9	4.5	7.7	4.0
Heroin	1.1	1.7	3.8	4.0
Opiates	3.4	4.6	7.7	4.0
Amphetamines	8.0	7.6	7.7	6.0
Barbiturates	8.0	5.5	7.7	2.0
Cocaine	3.4	3.6	3.8	4.0
Methaqualone	8.0	4.3	15.4	6.0
Mescaline	4.6	4.2	3.8	2.0
Tranquilizers	8.0	5.4	7.7	2.0
N =	87	1020	26	50

TABLE 3

SPECIFIC TYPE OF FAMILY STRUCTURE BY STUDENT DRUG USE

Student Use of	Per Cent Within each Specific Type of Family Category Using Each Specific Drug				
	Father and Mother	Mother Alone	Father Alone	Other	Nonrelative
Tobacco	61%	76%	76%	65%	50%
Alcohol	87	90	90	97	63
Marijuana	39	55	78	44	38
LSD	5	5	0	9	13
Heroin	2	0	0	3	0
Opiates	5	3	0	0	0
Amphetamines	8	8	0	9	13
Barbiturates	6	5	0	9	0
Cocaine	4	3	0	6	0
Methaqualone	4	8	0	13	0
Mescaline	4	5	0	6	0
Tranquilizers	5	8	0	13	0
N =	1020	38	9	32	8

Family Structure and Students' Self-Definition

In order to make a more indepth exploration of the family as a specific unit, it is necessary to study the relationships between the way a student defines himself and the type of family arrangements under which he lived for most of his life. Such an exploration has the added advantage of aiding our understanding of the familial aspects of one of the basic concepts of the present study: social characteristics of students. Theoretically, the way a student defines himself is partly a function of the responses of immediate others, and the various types of his behaviour are contingent in part on his self image.

In light of the data in Table 4, it is evident that students describing themselves as "jocks," "scholars," and "student leaders" are fairly distributed among the various types of family structure. However, students defining themselves as "freaks" and "greasers" are differentially distributed. Of students who have been raised mainly by the mother alone, 23.7 per cent define themselves as "freaks" and 5.2 per cent view themselves as "greasers." Of students reared mainly by the father alone, absolutely none refer to themselves as "freaks" and a fair number (11.1 per cent) define themselves as "greasers." The implications of these differences for differentials in drug use will be given detailed consideration in the concluding section of this study. But first, socioeconomic considerations.

Socioeconomic Factors

A factor which seems to help in the definition of use of drugs is socioeconomic status. One of the clearest and most often repeated findings in social science research is that there is direct relationship between socioeconomic status and tolerance of unconventional, nonconforming or deviant behaviour (Westby and Braugart, 1970; Trent, et al., 1967; Eisenstadt, 1962).

TABLE 4

FAMILY STRUCTURE AND STUDENTS' SELF CONCEPT

Raised Mostly by	Students Describing Themselves As						Total 1108	N
	Jocks (354)	Freaks (103)	Scholars (189)	Greasers (69)	Leaders (242)	Other (150)		
Both Parents	32.5%	9.1%	16.8%	6.2%	21.7%	13.8%	100%	1020
Mother Alone	23.7	23.7	15.8	5.3	21.0	10.5	100	38
Father Alone	33.3	0.0	22.2	11.1	22.2	11.1	99.9	9
Other Relative	28.1	12.5	15.6	6.3	25.0	12.5	99.9	32
Nonrelative	25.0	0.0	25.0	12.5	27.5	0.0	100	8

Of all the ways of measuring socioeconomic status, level of formal educational attainment is perhaps the most crucial. There is, of course, usually a high correlation between educational level and other measures of socioeconomic status, such as income or occupational prestige. It has generally been found that the higher an individual's educational level, the more tolerant he is likely to be of behaviour generally considered to be unconventional. In his studies of attitudes towards civil liberties, Stouffer (1955) discovered that within each specific age group, a higher educational level is invariably associated with greater tolerance of non-conforming behaviour. Souffer remarked that "just as education tends to introduce shading of categorization between true and false, strong and weak, etc., so presumably, it tends to encourage respect for dissenting points of view . . ."

In light of these and other observations, it was hypothesized that the higher the socioeconomic level of parents, the greater the likelihood that the offspring will use drugs. In other words, various levels of parental education and occupation are expected to be positively correlated with differentials in drug use by students. In operational terms, students of more highly educated parents, that is, parents with at least a college education, would most likely use drugs than will students whose parents have less than a college education. If this position is tenable, it could further be argued that parents with Master's degree, Doctorate degree, and post-graduate professional degrees would be much more tolerant of nonconforming behaviour and that, therefore, their offspring would more likely be involved in drug-using behaviour.

To measure the educational level of parents, students were asked:

"What is your father's education?" The response alternatives provided were:

(1) I have no father; (2) never finished high school; (3) high school complete; (4) some college; (5) college graduate; (6) master's, doctor's or post-graduate professional degree. The first three educational levels are definitely low; the last two, high. Our hypothesis stipulates a scattering of drug users around the first three categories, and a clustering of users around the latter two categories, that is, the highly educated parents.

The hypothesized relationships between student use of drugs and the educational level of parents obtains selective factual support from a limited number of drugs, a fact which demands hypothesis recasting. For it is evident that, with the exception of marijuana, cocaine amphetamines, the use of drugs by students appears not to be related with the educational level of their fathers (Table 5). The epidemiology of drug use is evenly distributed among students of all educational levels. It is only with regard to use of marijuana, cocaine and amphetamines that the educational level of fathers constitutes a significant determining factor. Students of highly educated fathers, that is, fathers who have a master's degree, doctor's degree, or post-graduate professional degree are the most likely to use marijuana; almost one-half (47 per cent) of them have ever smoked marijuana. Furthermore, one-quarter (25 per cent) of them are frequent users of marijuana, and an almost equal number (21 per cent) smoke the drug habitually. In addition, one out every ten students of highly educated fathers uses amphetamines, and an almost equal number (8.0 per cent) proceed to frequent use. And whereas absolutely none of the students of low educated fathers had tried cocaine, at least 7.0 per cent of sons of highly educated fathers have experimented with this drug. Interestingly, the level of fathers' education appears to be unrelated with the use of alcoholic beverages and tobacco. It is precisely in this regard that important differences exist between the educational levels of fathers and mothers, and student drug use.

TABLE 5

REPORTED DRUG USE BY EDUCATIONAL LEVEL OF PARENTS

Student Use of :	Level of Education of Father				
	1 N = 98	Low 2 N = 339	3 N = 201	4 N = 276	High 5 N = 147
Tobacco	62.2%	62.8%	60.2%	60.5%	61.6%
Alcohol	86.7	88.5	88.6	87.7	87.7
Marijuana	41.8	38.9	38.8	36.6	47.0
Heroin	1.0	1.2	2.0	1.8	2.7
Opiates	3.1	3.2	6.0	4.7	7.5
Amphetamines	6.1	7.7	8.0	8.3	9.6
Barbiturates	4.1	6.2	5.5	5.8	6.8
Cocaine	0.0	3.2	3.5	4.0	8.0
Methaqualone	4.1	4.4	6.0	4.0	6.2
LSD	4.1	4.1	5.5	4.0	6.8
Mescaline	4.1	3.2	4.5	4.3	6.8
Tranquilizers	6.1	5.9	6.0	5.4	4.8
Student Use of :	Level of Education of Mother				
Tobacco	65.2%	60.0%	61.8%	62.3%	65.0%
Alcohol	85.5	98.3	90.7	84.3	82.1
Marijuana	39.1	37.2	42.2	39.8	45.0
LSD	4.3	3.2	6.4	6.8	5.4
Heroin	. . .	1.5	2.5	2.1	. . .
Opiates	1.4	3.8	6.4	5.2	8.9
Amphetamines	2.9	7.9	8.3	8.4	7.1
Barbiturates	5.8	5.6	5.4	5.2	8.9
Cocaine	1.4	2.6	3.9	5.8	7.1
Methaqualone	2.9	4.1	4.9	4.2	15.0
Mescaline	4.3	2.8	5.4	6.3	7.1
Tranquilizers	10.1	5.5	4.9	5.2	8.9
N =	69	532	204	191	76

Children of the lowest and highest educated mothers are the most likely to smoke tobacco (Table 5), and at least one-fifth (41 per cent) within each category are habitual users of tobacco. Furthermore, student use of cannabis, barbiturates, cocaine and methaqualone would seem to be contingent on the educational level of mothers. Students of highly educated mothers have the greatest likelihood of using these specific drugs. One might also observe that low educated mothers appear to raise boozing offspring. Other than that, the prevalence and incidence of all other drugs tend to be evenly distributed among students of all educational levels, and do not seem to be a function of this characteristic.

But how are these relationships between student drug use and parental educational levels to be interpreted? We might venture the opinion that since a student's effective accessibility to drugs is contingent on whether or not he can afford the price, and since this buying power might depend on his parents' income, certain groups of students would be placed in a position of limited opportunity with respect to certain kinds of drugs. Indeed, Blum and his associates (1969b) have discovered that certain drugs (cocaine, for instance, and LSD) are "higher-class" drugs, with economically determined differentials in access to them. Our findings suggest a similar explanation; differentials in parental educational levels appear to be crucial determinants of which student will use certain drugs, especially cocaine, Methaqualone and amphetamine. Even in the case of cannabis, differentials in educational level of parents seem to be an important determinant of use. Logically, therefore, if this contention is tenable, we would expect to discover supportive evidence from the occupational structure of parents, and its influence on student drug-using behaviour.

Occupational Variables

In studying occupation as a predictor of student psychoactive substance use, our primary concern is to see what type of parental occupation is related to what type of student drug use. First, father's occupation.

It has already been hypothesized that the higher the occupational status of parents, the more the likelihood that the offspring will use drugs. Since the theoretical justification of this hypothesis has already been dealt with, what remains is to explore the relevance of this conceptualization as an explanatory framework of drug-using behaviour within this specific community.

Central referent of this hypothesis is the difference in occupational status. In order to measure this occupational variable, students were asked: "What is your father's occupation?" They were then given a list of occupations, and were asked to indicate which corresponds to their father's. These occupations were (1) professional or large business executive (lawyer, doctor, owner of large business or firm); (2) business manager, small business owner, school teacher; (3) clerical or sales work; (4) craftsman, fireman, factory worker, labourer, domestic worker, other. Obviously, the first and second types of occupation fall within a high occupational status category; the third occupational type certainly is of medium status, and the fourth type of work can be termed blue-collar occupation and belongs to the low occupational status. Our hypothesis stipulates that higher occupational status will be linked with higher probability of drug use by students. Stated otherwise, students saying that they use the selected drugs are more likely to come from homes in which the fathers have a high occupational status than students indicating that they do not use drugs. To test this hypothesis, student personal use of drugs was crosstabulated with the occupation of their parents. The evidence indicates that a higher proportion of students saying that their fathers are lawyers,

TABLE 6

OCCUPATION OF FATHERS BY STUDENT DRUG USE

Student Use of	Occupation of Fathers					Total
	Bus. Owner, Executive Professional	Business Manager	Clerical, Sales	Laborer	Other	
Tobacco	60.6%	58.6%	63.0%	64.2%	58.8%	61.3%
Alcohol	87.6	86.6	89.9	86.9	92.2	87.5
Marijuana	44.3	37.3	32.9	38.2	37.3	39.2
LSD	5.2	3.6	5.8	5.5	3.9	4.7
Heroin	2.0	1.5	1.4	3.8	.0.0.	1.6
Opiates	6.5	3.0	4.1	4.9	.0.0.	4.5
Amphetamines	10.4	7.1	6.8	7.0	.0.0.	7.7
Barbiturates	7.5	3.6	5.5	6.7	2.0	5.7
Cocaine	5.9	3.3	1.4	2.8	.0.0.	3.6
Methaqualone	6.5	4.4	2.7	4.0	2.0	4.6
Mescaline	6.8	3.6	1.4	3.7	2.0	4.2
Tranquilizers	9.8	3.0	4.1	4.6	3.9	5.6
N =	307	338	73	327	55	1107

doctors, owners of large businesses, and business executives are users of psychotropic drugs. This is more so in the use of marijuana, amphetamines, and cocaine and tranquilizers. This fact is consistent with the previous discovery, that children of highly educated parents are much more likely to use these specific drugs.

Although our data do not warrant strong conclusions they do suggest that, with respect to our community of study, occupational status is not a crucial determinant of drug use by students. However, students whose fathers are professionals, executives, or owners of big businesses are the most likely to use cocaine, tranquilizers, and cannabis. Other than that, the probability of use of all other drugs tends to be equally distributed among students of all socioeconomic strata.

Occupation of Mothers

Turning to the question of the occupation of mothers, we are faced with a somehow different problem. The issue is not so much that of occupational status as that of having an occupation. The explanation why children resort to deviant behaviour has often relied on several family variables. Of these we have already discussed family structure and educational level of parents. In dealing with the occupation of mothers and its relation to nonconforming behaviour, students of the field tend to concentrate on whether or not the mother has an occupation. For instance, a number of students have found that children from homes in which the mother is employed are more likely to be delinquent than are children from homes in which the mother is not (Nye, 1958; Hoffman, 1961). In terms of our study, we found it to be of relevance to tap the influence of occupation of mothers on student drug-using behaviour. It was therefore hypothesized that students whose mothers have a career are more likely to use drugs than students whose mothers have none. In other

words, drug users are more likely to say that their mothers have an occupation outside their homes, and they are employed on a full-time basis on their job. Thus, full-time employed mothers, in comparison with their part-time counterparts and housewives, would most likely raise drug-using offspring.

To measure this attribute, students were asked: "What is your mother's occupation?" The provided response alternatives were: (1) no mother living; (2) mother lives at home, does not work outside home; (3) mother works part-time; (4) mother works full-time.

The available data (Table 7) indicate that our hypothesis has factual support. At least two-fifths (43 per cent) of students whose mothers have full-time careers indicate using marijuana; a comparatively higher proportion of these students are also users of barbiturates. Use of all other drugs is more or less evenly distributed among all students. Indeed, the evidence indicates a consistent pattern of low use of all other drugs. But there are observable differences within this low pattern of use. The pattern indicates very negligible differences in use among students whose mothers are housewives and part-time employees, and a noticeable difference between these and full-time employed mothers. Full-time career mothers appear to be the most likely to raise marijuana-smoking offspring. Although our data cautions against strong conclusions, there is ample suggestive evidence that student drug use is inversely related to whether their mothers are housewives or part-time employed, and directly related to full-time career mothers. In this sense, our hypothesis has factual support.

Parents as Behaviour Models

Turning to the process of interaction within the family, it is of paramount importance to explore the quality of parental behaviour itself in order

TABLE 7

OCCUPATION OF MOTHER AND DRUG USE BY STUDENTS

Students' Use of	Mother's Occupational Status				
	Deceased	Housewife	Part-time	Full-time	Total
Tobacco	57.9%	62.2%	58.8%	62.3%	61.3
Alcohol	84.2	86.2	88.8	89.0	87.5
Marijuana	37.9	36.3	39.3	43.4	39.2
LSD	5.3	4.5	3.0	6.8	4.7
Heroin	0.0	1.5	1.5	1.8	1.6
Opiates	0.0	5.0	2.6	5.3	4.5
Amphetamines	10.5	7.1	7.1	8.9	0.3
Barbiturates	0.0	4.8	4.5	8.5	5.7
Cocaine	0.0	3.9	2.2	4.3	3.6
Methaqualone	5.3	4.7	2.6	6.0	4.6
Mescaline	0.0	4.3	3.0	5.7	4.2
Tranquilizers	0.0	5.8	3.7	7.5	5.6
N =	19	537	267	281	1104
Per Cent =	1.9	48.5	24.1	25.4	99.7

to reach some understanding of its influence in the drug-using behaviour of offspring. Students of the discipline have studied the possible relationship between parental use of drugs, and the drug-using behaviour of offspring. The observation has often been made that parental use of drugs obtained through doctor's prescription or otherwise may either directly or indirectly encourage adolescent experimentation with drugs. This implicitly suggests that there may be a direct relationship between parental legal or non-legal involvement with drugs on the one hand, and nonmedical use of drugs by students on the other. On the basis of these and other observations we had hypothesized that: "the more involved parents are with drugs, the greater the likelihood that their offspring will use drugs."

The predictor variable in this case is the actual use of drugs by parents. To measure this variable, respondents were given a list of behaviours and were asked to place check marks against those which apply to their parents. Among the behaviours were use of tobacco, alcohol, LSD, marijuana, amphetamines, barbiturates and heroin.

The rationale behind the measurement of the use of drugs by parents is to determine whether, and to what extent this is a determinant of drug-using by offspring. Otherwise stated, it is to determine the relationship between the use of drugs by parents and the drug-using behaviour of their offspring. In terms of our hypothesis, drug-using students would most likely indicate that at least one of their parents has also used psychoactive substances. This would indicate that the nature of parental drug-using behaviour will be one of the bases on which to determine whether or not a given student will also use drugs. Table 8 suggests this to be the case. Within each category of drugs, a higher proportion of drug-using students also indicate that the particular substance has been used by a parent. On the other hand, of students saying

TABLE 8

PARENTAL DRUG USE BY STUDENT DRUG USE

Variable	Students Who do not Use	Students Who Use	Total	N
<u>Tobacco</u>				
Neither parent uses	56.1%	43.9%	100.0	108
A parent uses	34.2	65.8	100.0	781
Don't know	59.5	40.6	100.0	37
<u>Alcohol</u>				
Neither parent uses	29.9	70.1	100.0	109
A parent uses	7.8	91.2	100.0	838
Don't know	27.0	73.0	100.0	27
<u>Marijuana</u>				
Neither parent smokes	62.8	37.2	100.0	940
A parent smokes	22.2	77.8	100.0	18
Don't know	43.8	56.2	100.0	128
<u>Aphetamines</u>				
Neither parent uses	94.5	5.5	100.0	923
A parent uses	42.2	57.8	100.0	26
Don't know	82.0	18.0	100.0	133
<u>Heroin</u>				
Neither parent uses	98.4	1.7	100.0	923
A parent uses heroin	50.0	50.0	100.0	8
Don't know	96.2	3.8	100.0	133

Note: Nonresponses are not included in the analysis.

that none of their parents has used the selected drugs, few of them have themselves used the particular substance in question. The general pattern indicates that the proportion of non-drug-using students increases with non-drug-using parents, and decreases with drug-using parents. Correspondingly, the proportion of drug-using students increases with drug-using parents, and declines with non-drug-using parents. In other words, the less involved parents are with drugs, the less the likelihood that their offspring will use drugs. And, conversely, the more involved parents are with drugs, the more the likelihood that the offspring will also use drugs. However, since only a few number of parents indicate using marijuana, heroin and amphetamines, these general observations need be made with some qualification.

The present study does not address itself specifically to the actual process of transmission of drug-using values from parents to offspring. However, the available data suggest that the drug-using behaviour of parents is in itself one of the crucial factors in the determination of whether or not a given student will abstain from, or experiment with drugs. One must be careful to point out that the drug-using behaviour of parents does not cause students to use drugs; it may, however, be a potentiating factor leading the exposed student to select this mode of behaviour. Beyond this, we would suggest that perhaps of far reaching importance and implications is the quality of actual interaction between parent and student.

Parent-Child Relationships

Much of an adolescent's behaviour, far from being a random occurrence, is often a manifestation of the existing family relationships. Family structure, per se, is not a sufficient explanatory variable of why young people behave the way they do. Such behaviour is often an externalization of the quality of relationships existing between parent and the adolescent. It is

conceivable that the degree of nurturing relationships existing between parent and child constitutes a good index of the direction an adolescent's behaviour is likely to take. Thus, a deeper level of analysis would require that we go beyond the external family structure to the actual family processes.

This aspect of the family was explored in the interview. The question was asked: "How would you characterize your relationship with your parents or the persons acting in their place?" The alternative responses provided were: (1) very good; (2) all right; (3) indifferent, and (4) not good. The first two response alternatives define positive parent-child relationships, the last two, negative, less satisfactory parent-child relationships. The specific hypothesis to be tested was formulated with regard to parent-child relationships, namely, that the less satisfactory parent-child relationships, the more the likelihood that the offspring will use drugs. In operational terms, students who use drugs will indicate that the relationship between them and their parents is "indifferent" or "not good." Failing to obtain basic emotional needs at home, such students would compensate by some type of nonconforming behaviour through other group processes which respond to the nurturant sociability needs of the adolescent. It is suggested here that the use of drugs by adolescents is a latent function of non-nurturant family relationships. Table 9 shows this to be the case.

The data show that there is a direct relationship between students defining their relationship with their parents as "not good" and "indifferent" and their use of drugs (Table 9). For instance, of students defining their relationship with their parents as "not good," 100 per cent are users of alcohol, and a significantly higher proportion (91.7 per cent) smoke marijuana. Indeed, such students manifest a consistently higher use of all other psychotropic substances. On the other hand, very good parent-child relationships

TABLE 9

PARENT-STUDENT RELATIONSHIP AND USE OF DRUGS

Student Use of	Relationship with Parents Is				Total N = 76
	Very Good N = 23 30.3%	All Right N = 20 26.3%	Indifferent N = 20 26.3%	Not Good N = 13 17.1%	
Alcohol	82.6%	85.0%	85.0%	100.0%	86.8%
Tobacco	56.5	55.0	75.0	83.3	64.5
Marijuana	26.1	50.0	55.0	91.7	50.0
LSD	0.0	0.0	0.0	33.3	5.3
Amphetamines	0.0	5.0	10.0	33.3	4.2
Cocaine	0.0	0.0	8.7	25.0	6.6
Barbiturates	0.0	0.0	0.0	16.7	2.6
Heroin	0.0	4.3	10.0	25.0	5.3
Mescaline	0.0	0.0	4.3	25.0	5.3
Opiates	0.0	4.3	5.0	16.7	5.3
Tranquilizers	0.0	0.0	5.0	16.7	3.9
Methaqualone	0.0	8.7	10.0	25.0	4.6

have an inverse relation with use of drugs by students. These findings invite the conclusion that the less nurturing parent-child relationships, the more the likelihood that the offspring will use drugs and, conversely, the more nurturing parent-child relationships, the less the likelihood that the offspring will use mind-altering drugs.

When the degree of student involvement with marijuana is examined within the context the context of family relationships, the same conclusion seems warranted (Table 10). As the quality of parent-child relationship improves, the proportion of students not using marijuana also increases, and vice-versa. For instance, of students defining their relationship with their parents as very good, almost three-quarters (73.9 per cent) are non-users of marijuana, and absolutely none is a daily user of it. On the other hand, of students describing their relationship with their parents as "not good," only a few (8.3 per cent) are nonusers of cannabis, and more than two-fifths (41.6 per cent) are daily users of this substance. It can be inferred, therefore, that nurturing family relations are inhibitive, nonnurturing relationships promotive of student drug-using behaviour.

The Religious Factor

It was stated above that various degrees of alienation from religion have been observed to be associated with various degrees of involvement with drugs (Blum, 1969b). This phenomenon has been interpreted as a need on the part of adolescent drug users to reject basic values of their parents (Breda, 1971; Sommerhausen, 1971). Hence, we had hypothesized that the less religious the background of students, the more the likelihood that they will use drugs.

It is important to state our central argument. It is a fact that our population is by and large Catholic in religious background (94 per cent), with a few Jewish, Protestants, Orthodox and others. Our argument is that

TABLE 10
 PARENT-STUDENT RELATIONSHIP AND THE DEGREE OF STUDENT
 INVOLVEMENT WITH MARIJUANA

Parent-Child Relationship	Frequency of Use					Total N=76	N
	Not at All N=38	Once a Month N=11	Once a week N=13	Several Times a Week N=9	Daily N=15		
Very Good	73.9%	13.0%	13.0%	0.0%	0.0%	99.9	23
All Right	50.0	10.0	20.0	15.0	5.0	100.0	20
Indifferent	45.0	20.0	15.0	20.0	0.0	100.0	20
Not Good	8.3	16.7	16.7	16.7	41.6	100.0	12

the differentiating factor among religious groups in terms of psychoactive substance use is the lack of formal religious affiliation. In operational terms, drug users are expected to be those students who profess to have no formal religious affiliation.

One item in the questionnaire tried to tap the religious affiliation of students. Respondents were asked: "What is your religious background?" The provided response alternatives were (1) Roman Catholic; (2) Jewish; (3) Protestant; (4) Orthodox; (5) other; (6) none. It is expected that users of drugs would be students who claim to have no formal religious affiliation. Table 11 suggests that this position is tenable.

Classifying students into dichotomous categories according to whether or not they profess to have any formal religious affiliation, there emerges a clear picture of the epidemiology of drug use among students. Of students saying that they have no formal religious affiliation, a remarkably consistent greater proportion use all drugs except alcohol. On the other hand, with the exception of alcohol, fewer students with a formal religious background are also users of drugs. The evidence, in the light of the strong differences in drug use by the two types of students, lends support to the hypothesis: that students claiming no formal religious affiliation are much more likely than professed Catholics, Jewish, Orthodox, and Protestants to admit using psychoactive substances.

Dimensions of Religiosity

But merely to remain on the level of formal religious affiliation would be superficial, the more so as the student community is overwhelmingly Catholic. There is the need to measure the personal religious dimensions of students. The degree of religiosity was explicitly explored by the interview; this tapped the personal interest of students in religion, and the level of actual

TABLE 11

FORMAL RELIGIOUS AFFILIATION AND STUDENT USE
OF PSYCHOACTIVE DRUGS

Variable: Use of	Students who do not have a Religion	Students who have a Formal Religion
Tobacco	69.2%	61.2%
Alcohol	76.9	87.7
Marijuana	53.8	39.0
LSD	23.1	4.4
Heroin	7.7	1.6
Opiates	15.4	4.4
Amphetamines	15.4	7.6
Barbiturates	30.8	5.4
Coaine	7.7	3.6
Methaqualone	23.1	4.4
Mescaline	15.4	4.1
Tranquilizers	30.2	5.2
N =	16	1,091

participation in religious activities. Of course, these two attributes have a close interdependence.

To measure the depth of religiosity students were asked: "Which of these best describes your present interest in religion?" The alternative responses were printed on cards and presented in turns to the interviewee. These response alternatives were: (1) no interest; (2) only an intellectual interest (in Bible as literary-historical work, comparative religion, etc); (3) mildly interested (including interest because of family tradition, or for social reasons); (4) deeply interested: consider self as deeply religious person; (5) don't know. A similar procedure applied to the exploration of student's actual participation in religious services or activities. The varying degrees of religiosity, measured by the frequency of student's participation in religious activities were: (1) never participate in religious services or activities; (2) participate 1-10 times a year; (3) participate 1-2 times a month; (4) participate about once a week, and (5) participate more than once a week.

The reason behind measuring religiosity is to determine whether student use of mind-altering drugs is in any way related to the degree in which he considers himself to be "religious." To determine this, we had hypothesized that the less involved a student in religious activities the more the likelihood that he will use psychoactive drugs. Operationally stated, student drug users would be marginally involved in religious activities, and would tend to define their own personal interest in religion as "none" or "intellectual." Analytically, a comparison of the proportion of drug users within the various categories of religiosity will indicate any meaningful relationship between these two characteristics or attributes. In relating the extent of religiosity to drug use, the data (Table 12) point that a higher degree of religiosity is

TABLE 12

DIMENSIONS OF RELIGIOSITY AND DRUG USE: PER CENT STUDENTS

WITHIN EACH LEVEL OF RELIGIOSITY INDICATING

USE OF DRUGS

Use of:	Interest of Student in Religion				
	None N=9	Intellectual N=13	Mild N=26	Deep N=25	Undefined N=5
Alcohol	88.9%	84.6%	96.2%	78.3%	80.0%
Tobacco	77.8	84.6	69.2	47.8	40.0
Amphetamines	44.4	7.7	7.7	0.0	0.0
Cocaine	44.4	7.7	0.0	0.0	0.0
Marijuana	77.7	69.2	46.2	39.1	50.0
Barbiturates	22.2	0.0	0.0	0.0	0.0
LSD	33.3	0.0	0.0	4.3	0.0
Mescaline	22.2	15.3	0.0	0.0	0.0
Heroin	11.1	15.4	3.8	0.0	0.0
Opiates	22.2	15.3	0.0	0.0	0.0
Tranquilizers	22.2	0.0	33.3	0.0	0.0
Methaqualone	44.4	15.4	3.8	0.0	0.0

Frequency of Religious Participation

Use of:	Never N=6	Frequency of Religious Participation			
		1 - 10 Times a Year N=22	1 - 2 Times a Month N=15	Once a Week N=21	Many Times a Week N=12
Alcohol	66.6%	90.0%	80.0%	100.0%	100.0%
Tobacco	83.3	68.2	60.9	66.7	50.0
Amphetamines	50.0	9.1	6.7	4.8	0.0
Cocaine	50.0	9.5	0.0	0.0	0.0
Marijuana	66.7	72.7	40.0	47.6	16.7
Barbiturates	16.7	4.8	0.0	0.0	0.0
LSD	33.3	4.8	6.7	0.0	0.0
Mescaline	50.0	4.5	0.0	0.0	0.0
Heroin	33.3	4.8	6.7	0.0	0.0
Methaqualone	50.0	4.5	6.7	9.5	0.0

inversely related to the use of mind-altering drugs. As the degree of religiosity (in terms of interest and participation in religious activities) declines, the usage of drugs tends to rise. At the point, for example, where the student currently acknowledges that he has no interest in religion, there is very high chance that he will use the drugs except heroin. The same is true of students who never participate in religious activities. Interestingly, students who describe their interest in religion as "intellectual" or who participate only rarely (1-10 times a year) in religious activities, are extensive users of marijuana (69.2 per cent and 72.2 per cent respectively). But if a student classifies himself as "deeply interested" in religion, or participates at least once a week in religious services, the likelihood of his using most of the selected drugs is negligible. Hence, the data invite the conclusion that the degree of religiosity of a given student is one of the best predictors as to whether or not he will use psychoactive drugs. High religiosity is inversely related with student drug use, while low religiosity is directly related with it.

Ideal, Self, Religiosity, and Family Relations

It has already been established that differences in drug use correspond to differences in dimensions in religiosity. To carry this analysis one step further, there is the need to examine whether differences in religiosity also correspond to differences in student self-conception. In other words, the issue is to explore the existing relationships between the way a student defines himself, and the dimension of his religiosity. The data in Table 13 suggest the existence of such relationship. At least one out of every three "jocks," "scholars," "greasers," and "student leaders" considers his interest in religion to be deep, and participates at least once a week in religious activities. In contradistinction, one out of every two "freaks" has no

TABLE 13

IDEAL SELF-IMAGE, RELIGIOSITY, AND FAMILY RELATIONS

Variable	Ideal Self				Student Leaders N=13
	Jocks N=24	Freaks N=10	Scholars N=20	Greasers N=9	
<u>Interest in Religion</u>					
None	4.2%	50.0%	0.0%	0.0%	7.7%
Intellectual	8.0	20.0	25.0	33.3	23.0
Mild	33.7	10.0	25.0	33.3	30.8
Deep	41.7	20.0	41.7	33.3	38.5
Other	12.4	0.0	8.3	0.0	0.0
Total	100.0	100.0	100.0	99.9	100.0
<u>Participation in Religious Activities</u>					
Never	4.2	30.0	0.0	0.0	7.7
1-4 times a year	12.5	30.0	8.3	0.0	7.7
5-10 times a year	16.7	30.0	16.7	0.0	15.3
1-2 times a month	20.8	10.0	16.7	33.3	7.7
Once a Week	41.7	0.0	33.3	33.3	30.8
Several times a Week	4.2	0.0	25.0	33.3	30.8
Total	100.0	100.0	100.0	99.9	100.0
<u>Family Relations</u>					
Very Good	37.5	10.0	40.0	33.3	30.8
All Right	20.8	10.0	30.0	33.3	38.5
Indifferent	37.5	20.0	10.0	16.7	23.1
Not Good	4.2	60.0	20.0	16.7	7.7
Total	100.0	100.0	100.0	100.0	100.1

interest in religion, and absolutely none of them participates weekly in religious activities. Since high drug use is directly related to low religiosity, the implication is that students defining themselves as "freaks" would be the most likely users of drugs.

A similar argument can be made with regard to the nature of family relations. Most "freaks" (60 per cent) characterize their relation with their parents as poor. In contradistinction, at least one-third of the students typifying themselves as "jocks," "scholars," "greasers" and "student leaders" describe their family relations as very good. It is suggested here that the differences in religiosity and nature of family relations observed among the various categories of students account in part for differentials in student drug use.

The School System

Certainly a major factor in the high school experience of any student is his rated academic performance--his grade point average. It tells him, his peers, and his family how well the system thinks he is doing. It also reflects his ability and/or willingness to function within the system.

Self-reported grades turn out to have an important relationship to the use of most drugs. That is, high grades are associated with low use.

The measure of academic grades used here is a self-report item in the questionnaire. It reads: "What was your grade average last year?" The student then selects one of a specified answer alternatives.

Turning to the grades in relation to drug use, we find that those with lowest grade point average are clearly the most likely to use drugs. Furthermore, there tends to be very great difference in illegal drug usage between the two top grades, A and B. And this holds true for all drugs. For, with the exception of marijuana, alcohol, tobacco, tranquilizers and barbiturates,

TABLE 14

STUDENT'S GRADE POINT AVERAGE AND HIS USE OF DRUGS

Students' Use of	All Students			Interview Sample		
	A N 96	B 385	C 617	A 21	B 23	C 32
Tobacco	41.7	57.8	66.9	71.4	47.8	71.9
Alcohol	78.1	86.3	90.0	76.2	87.5	95.7
Marijuana	24.0	31.5	46.7	34.4	43.5	52.4
LSD	1.0	3.6	5.8	4.8	3.1	8.7
Heroin	1.0	1.8	1.6	0.0	3.3	4.3
Opiates	1.0	3.9	5.5	4.3	4.8	6.3
Amphetamines	3.1	7.2	8.8	0.0	3.0	13.5
Barbiturates	4.2	3.4	7.5	0.0	4.3	4.8
Cocaine	0.0	2.6	4.9	2.5	3.1	8.7
Mescaline	1.0	2.6	5.8	4.3	4.8	6.3
Tranquilizers	5.2	5.4	5.7	0.0	4.8	6.3
Methaqualone	1.0	2.6	6.5	2.5	8.7	9.4

the incidence of psychoactive substance usage among students within the B grade point average category is from one to three times as is reported by students within the highest grade point average (A students).

Turning to the specifics of drug use. The drug of preference of A students is tranquilizers. But even in this case, usage is comparatively low. It is interesting to note that absolutely none of them uses cocaine, and only a very insignificant number uses LSD, mescaline, methaqualone, opiates and heroin, that is, the hard drugs. Turning to B students, the only remarkable thing about them is their use of amphetamines. But it is from the low-achievers (C students) that we find the greatest incidence of all drug use. Furthermore, there is a noticeably great use by these students of marijuana, barbiturates and amphetamines.

The data invite the conclusion that there is a correspondence between the use of drugs and the quality of a student's performance at school. The higher the quality of a student's performance (as measured by his grade point average), the less the likelihood of his using drugs; the lower the quality of performance, the greater the likelihood of his using drugs.

Consideration of the various levels of involvement with marijuana invariably leads to the same conclusion (Table 15). On the one hand, almost one-quarter (24.6 per cent) of all low achievers (D or less students) are habitual users of marijuana. By comparison, more than three-quarters (76.6 per cent) of high achievers (A students) are abstainers from marijuana. As the quality of performance improves, the number of students who had never tried cannabis also increases. Conversely, as the quality of performance declines, the number of students who never tried the drug declines, while the number of more intensive users of it rises correspondingly.

But how are these relationships between high school grades and high

TABLE 15

GRADE POINT AVERAGE BY FREQUENCY OF MARIJUANA USE

Frequency of Marijuana Use	Grade Point Average						N
	A N=96	B N=387	C+ N=308	C N=240	D or Less N=69	D.K. N=7	
Never	76.6%	68.3%	57.9%	51.6%	37.7%	85.7%	667
1-2 Times	7.0	8.3	11.3	15.3	15.9	0.0	124
3-9 Times	7.0	8.8	9.6	9.1	8.7	0.0	98
10-49 Times	4.2	8.5	8.8	12.3	11.6	14.3	105
50 Times or More	5.2	5.9	11.7	11.0	24.6	0.0	107
No Answer	0.0	0.2	0.7	0.6	1.4	0.0	6
Total	100.0	100.0	100.0	99.9	99.9	100.0	1,107

school student drug use to be interpreted? One is that drug use has contributed directly or indirectly to a lowering of academic performance (Blum, 1969b). Another is that poor grades led the student to seek compensating social rewards through drug use. Still a third is that both poor grades and active drug use result from the same prior determinants such as joining deviant subgroups of students (Johnston, 1973). The latter explanation seems plausible. However, this position would be tenable if low-achievers have friends who are involved in drug-using behaviour, and if these friends are also by and large low-achievers. Hence, it is crucial to examine the identity of students, and how this relates both to their grade-point average and drug-using behaviour.

Identity, Performance, and Drug Use

In our theoretical discussion, the observation was made that self-concept is both a dependent and an independent variable. It is a function of the responses of significant others and audiences located within various areas of the social system. It is also the basis on which ego selects and organizes his behaviour within the context of the social system, and the expectations of organized other. It can be argued, therefore, that students who select a drug-using mode of behaviour do so as a result, in part, of the way they conceive themselves. The school as a social system definitely constitutes one of the most vital sources of independent variables both for the evolution and structuring of self-identity, and the behaviour consequent on that.

Examining students' self-definition in relation to their academic roles, we notice that there is a negative relationship between students defining themselves as "scholars," "student leaders," and "jocks" and use of all drugs. Students identifying themselves as "greasers" are positively related, though very weakly, with the use of all psychoactive drugs. But students typifying

themselves as "freaks" show a comparatively stronger positive correlation with use of all drugs except heroin and tranquilizers (Table 16). To determine this relationship, student use of the twelve selected drugs was dichotomized or converted into a dummy variable, and phi coefficients were then calculated to define the relationships between use of these drugs and students' self-image.

That correlation is not causation is a well known axiom within the social sciences. But these correlational differences draw attention to the possibility of the existence of actual attributes differentiating the various types of students: "freaks" and "greasers" on the one hand, and "jocks," "student leaders," and "scholars" on the other. What do these differences tell us about the school system, and varying successful adjustment of different types of students to the school environment?

In our discussion of the relationship between use of drugs and the level of academic performance, the conclusion was drawn that lower grades have a direct relation with use of most drugs, and high grades, and inverse relationship. This conclusion has various ramifications in the light of the correlational differences between the various types of students and drug-using behaviour. First, there is the implication that students describing themselves as "scholars," "student leaders" and "jocks" will also show a high quality of academic performance; fewer students from these background are users of drugs. The exact contrary would be true of students who describe themselves as "freaks" and, to a lesser extent, "greasers." It is among these two types of students that the majority of drug users are to be identified. These observations are consistent with the evidence in Table 17.

At least one out of every five high-achievers (A and B students) defines himself as a "jock," "scholar," or "student leaders." "Greasers" and

TABLE 16

PHI COEFFICIENTS DESCRIBING THE RELATIONSHIPS BETWEEN
STUDENTS' SELF-CONCEPT AND USE OF TWELVE
SELECTED DRUGS

Drugs	Types of Students				
	Jocks N=354	Freaks N=103	Scholars N=189	Greasers N=69	Leaders N=242
Tobacco	-.04	.20	-.13	.18	-.14
Alcohol	-.06	.17	-.21	.11	-.17
LSD	-.08	.17	-.05	.03	-.05
Marijuana	-.06	.38	-.12	.02	-.21
Heroin	.06	.01	-.05	.02	-.06
Opiates	-.05	.22	-.03	.03	-.08
Amphetamines	-.05	.21	-.06	.05	-.10
Barbiturates	-.04	.17	-.04	.06	-.09
Cocaine	-.05	.14	-.03	.08	-.08
Methaqualone	-.07	.16	-.02	.02	-.06
Mescaline	-.08	.23	-.05	.03	-.05
Tranquilizers	-.03	.07	-.04	.07	-.05

TABLE 17

SELF-DEFINITION BY GRADE POINT AVERAGE

Students Describing Themselves as:	Grade Point Average				
	A	B	C+	C	D or Less
Jocks (354)	20.8%	30.7%	35.8%	37.0%	10.2%
Freaks (103)	1.7	6.6	9.6	13.0	30.4
Scholars (189)	29.2	21.7	14.2	11.4	8.7
Greasers (69)	5.2	4.4	5.8	8.4	8.7
Leaders (242)	28.1	24.5	21.3	17.5	17.4
Others (150)	15.0	12.1	12.3	12.7	24.6
Total (1107)	100.0	100.0	100.0	100.0	100.0
N =	96	387	240	308	76

"freaks" constitute an insignificant minority among high-achievers.

Indeed, the latter group of students ("freaks") cluster around the lower end of the achievement continuum.

Carrying this analysis one step deeper, it is necessary to examine how low-achievers tend to gravitate towards each other in terms of the type of close friends they have. Theoretically, it is assumed that, like the lower-class boys of Albert Cohen (1955), "greasers" and "freaks" would most likely face common problems of adjustment within the school environment. Hence, there would be the tendency for such students to gravitate towards each other for support. Table 18 suggests this to be the case. The general pattern indicates that fewer "freaks" and "greasers" report that none of their six closest friends are users of marijuana, LSD, and amphetamines. Conversely, more of them indicate that at least four of their six closest friends use these substances. This general pattern is more obvious the case of cannabis use. Whereas at least two-fifths of "jocks," "scholars," and "student leaders" report having no drug-using friends, only very few "freaks" and "greasers" indicate the same fact; and at least two-fifths of "freaks" report that all their closest friends are smokers of marijuana. (Table 18)

Turning to the question of the relation between grade point average, type of close friends, and student drug-use, we notice an interesting pattern (Table 19). As the level of academic performance rises, the proportion of students saying that none of their six closest friends uses drugs also rises. As the level of performance declines, the proportion of students saying that at least four of their six closest friends use marijuana also rises. And at the point where students have the poorest performance, almost one-quarter (24.6 per cent) report that all of their six closest friends are users of marijuana, LSD, and amphetamines. This would appear to support the earlier

TABLE 18

TYPES OF STUDENTS BY NUMBER OF DRUG-USING FRIENDS

Number of Close Friends Using	Students Describing Themselves as						Total 1,107	N
	Jocks N=324	Freaks N=103	Greasers N=69	Scholars N=189	Leaders N=242	Other N=150		
<u>Marijuana</u>								
None	41.5%	5.8%	5.8%	64.0%	70.7%	33.3%	47.3%	524
One	18.4	10.7	17.4	9.5	10.3	7.3	12.4	137
2 - 3	25.3	16.5	34.8	15.9	12.8	30.0	22.0	244
4 - 5	5.6	23.3	30.4	3.7	3.3	14.7	7.0	78
All	8.2	43.7	11.5	6.9	2.9	14.7	11.2	124
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	1107
<u>LSD</u>								
None	91.8	64.1	88.4	92.1	98.3	81.3	89.1	986
One	6.5	9.7	2.9	5.3	0.8	4.7	4.9	54
2 - 3	1.7	17.5	0.0	2.1	0.4	4.0	3.2	35
4 - 5	0.0	3.9	2.9	0.0	0.0	1.3	0.7	8
All	0.0	4.9	1.4	6.5	0.4	1.3	0.9	10
Don't Know	0.0	0.0	0.0	4.3	0.0	7.3	1.3	14
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	1107
<u>Amphetamines</u>								
None	88.1	55.3	84.1	87.8	96.7	74.7	84.8	939
One	7.1	9.7	4.3	9.0	2.1	9.3	6.7	74
2 - 3	3.7	22.3	7.2	2.1	1.2	6.7	5.2	58
4 - 5	0.3	8.7	1.4	0.5	0.0	1.3	1.3	14
All	0.6	3.9	1.4	6.5	0.0	7.3	1.2	13
Don't Know	0.2	0.0	1.4	0.0	0.0	7.3	0.8	9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	1107

TABLE 19

GRADE POINT AVERAGE BY NUMBER OF SIX CLOSEST

FRIENDS USING MARIJUANA

Number of Marijuana Using Friends	Grade Point Average					N
	A N=96	B N=387	C+ N=240	C N=308	D N=69	
None	56.3%	55.3%	45.8%	38.3%	33.3%	524
One	14.6	11.6	12.5	13.6	8.7	137
2 - 3	16.7	18.3	23.8	26.6	24.6	244
4 or 5	4.2	7.8	6.3	7.5	8.7	78
All	7.3	6.7	10.8	13.6	24.6	119
No Answer	1.0	0.3	0.8	0.3	0.0	5
Total	100.1	100.0	100.0	99.9	99.9	1,107

suggestion that low-achievers would most likely associate with other low-achievers. And that their selection of drug-specific mode of behaviour is a compensatory activity to the problems of adjusting to the strains generated by unsatisfactory performance in school. Therefore, failing to obtain gratification from school, low-performance students would most likely select this mode of behaviour--drug-taking that is--as a compensatory response or readjustment. The over-riding objective of their selecting this mode of behaviour would be for fun (Table 20).

The foregoing observations do not have as their purpose the inference of cause-effect relationship; our data do not warrant inferences of this nature. But they do point to some of the social processes that govern and determine the interaction of students within the school social system. The implication is that the type of drug related behaviour a given student is likely to select is a fair index of how well he performs in school.

Student Organizational Participation

Part of the lore about drug use in high school is that drug users tend to be marginal people in the life of the school. It has already been demonstrated that drug users tend to be somewhat more marginal in the academic life of the school, but that is only one part of the social milieu. Social connectedness to peers in school, particularly in formal activities, is another. Such connectedness is participation in some of the many extracurricular activities is offered at most schools. We have chosen to compare drug use for student who report varying degrees of extracurricular participation.

The questions pertaining to extracurricular participation were presented in the self-administered questionnaire and in the follow-up interview. Students were asked: "How many school activities or organizations do you belong to?" The provided response alternatives were: (1) none; (2) one; (3) two; (4) three to five; (5) six or more.

TABLE 20

GRADE POINT AVERAGE AND REASONS FOR DRUG USE

GPA	Reasons						Total	N
	Escape N=135	Rebel N=21	Group Acceptance N=328	Fun N=414	Other N=116	D.K. N=93		
A	11.5%	4.2%	41.7%	26.0%	7.3%	9.4%	100.1	96
B	51.5	2.3	31.8	33.3	7.8	9.3	100.0	387
C+	10.0	2.1	26.7	40.8	10.8	9.6	100.0	240
C	10.4	0.6	27.6	43.2	12.3	5.8	99.9	308
D or Less	7.2	1.4	20.3	40.6	20.3	10.1	99.9	69

In our discussion of the relationship between organizational participation and use of drugs (Chapter III) the point was made that experience with drugs almost always occurs in social contexts. It was further recognized that such experiences are not equally distributed among all people within any given community. It follows, logically, that the degree of experience with drugs will be significantly related to the level and type of organizational involvement of any given student. Hence, we had hypothesized that the more involved a student is in school organizations, the more the likelihood that he will use drugs. And further, that the pattern of his drug-using behaviour would most likely be a product, in part, of the type of organizations to which he belongs.

The first part of this hypothesis stipulates, in operational terms, that students belonging to school organizations or other school activities would also use drugs. On the other hand, their non-participating counterparts would be non-users of drugs.

As can be seen from Table 21, the exact contrary of this hypothesis is true. The data suggest that the lore about the more marginally involved being the heaviest users does have much factual support. For students with no extracurricular activities do show a remarkably higher usage than other students on all drugs except heroin. The differences are quite large in the case of alcohol, tranquilizers, tobacco and marijuana. Other than that, twice as many non-active students as active students use all the other remaining eight drugs.

A more detailed analysis of these findings shows differences in drug use to be related to varying degrees of organizational involvement. As is evident from Table 22, the number of organizations or school activities a student belongs to is a good predictor of the likelihood of his using or not using drugs. Among participants in extracurricular activities, the difference of drug-using incidence is significant. With the exception of heroin, amphetamines,

TABLE 21
 DISTRIBUTION OF DRUG USE ACCORDING TO WHETHER OR NOT A
 STUDENT PARTICIPATES IN EXTRACURRICULAR ACTIVITIES

Variables	All Students		Interview Sample	
	Non-active N = 281	Active N = 824	Non-active N = 23	Active N = 53
Tobacco	69.0%	58.7%	64.2%	67.5%
Alcohol	89.3	86.9	85.7	88.7
Marijuana	47.7	36.5	61.9	47.2
LSD	8.9	3.3	4.8	5.7
Heroin	1.4	1.7	9.5	1.9
Opiates	7.1	3.6	9.5	1.9
Amphetamines	13.2	5.8	14.3	7.5
Barbiturates	8.9	4.6	0.0	3.8
Cocaine	6.4	2.7	4.8	3.8
Methaqualone	8.5	3.3	4.8	3.8
Mescaline	7.1	3.3	4.8	3.8
Tranquilizers	6.8	5.2	9.5	1.9

TABLE 22
 ORGANIZATIONAL PARTICIPATION AND USE OF DRUGS

Student use of:	Number of Organization Student Participates In					Total
	1	2	3-5	6 or More	None	
Tobacco	59.6%	59.9%	55.3%	64.7%	69.0%	61.3%
Alcohol	84.3	88.7	87.9	94.1	89.3	87.5
Marijuana	38.7	37.2	35.3	34.1	47.7	39.2
LSD	3.7	3.5	2.8	0.0	8.9	4.7
Heroin	2.0	1.9	4.4	0.0	1.4	1.6
Opiates	5.6	3.0	2.1	0.0	7.1	4.5
Amphetamines	8.0	5.9	3.9	11.8	13.2	7.7
Barbiturates	5.9	4.9	4.5	4.2	8.9	5.7
Cocaine	3.7	2.5	1.5	0.0	6.4	3.6
Methaqualone	4.0	3.9	1.5	0.0	8.5	4.6
Mescaline	4.3	2.8	2.5	0.0	7.1	4.2
Tranquilizers	8.0	4.6	5.9	3.9	6.8	5.6
N =	324	283	199	178	283	1,107

and tranquilizers a greater proportion of students who belong to one or two extracurricular activities report more drug use than students belonging to more than two extracurricular activities. Participation in six or more extracurricular activities is negatively related to use of psychoactive drugs. Indeed, the evidence suggests an overall inverse relationship between use of drugs and participation in extracurricular activities; participants in more activities report less use than participants in fewer organizations.

Specific Types of Extracurricular Involvement

Sports

Our interest in student organizational participation also focuses on the nature and type of activity students are engaged in. One item of the study explored the various types of sportive activities or organizations to which students belong. The activities students were asked to check as indicative of their belonging to them were: tennis, golf, cross country, soccer, baseball, and football. Our central concern is to explore the relation of definite drug-using patterns to definite types of sport associations.. In light of the evidence in Table 23, the following observations seem warranted. First, use of alcohol, tobacco and marijuana is heavy among all members of the various sport clubs. Other than that, students who belong to tennis clubs tend to use amphetamines and tranquilizers. Almost all students who participate in golf (96.8 per cent) use alcohol. Also, their drugs of preference are barbiturates and mescaline. For cross country runners, amphetamines seem to be the drug of preference. Students who belong to baseball prefer cannabis and cocaine. Interestingly, cocaine and heroin are the least used drugs by students who participate in sports.

What all this seems to suggest is that drug use patterns correspond to patterns of interest in sports. And that students who belong to one type of

TABLE 23

PARTICIPATION IN SPORTS AND STUDENT DRUG USE

Drugs	Per Cent Within Each Group Using Respective Drug							Total (1107)
	Tennis (35)	Golf (31)	Cross Country (26)	Soccer (24)	Base Ball (94)	None (815)	D.K. (82)	
Tobacco	48.6	54.8	50.0	47.1	59.6	63.4	59.7	61.3
Alcohol	82.9	98.6	84.6	85.3	87.2	88.1	81.9	87.5
Marijuana	22.9	29.0	30.0	26.5	42.6	40.0	47.2	39.2
LSD	5.7	3.2	7.7	2.9	4.3	4.5	4.3	4.7
Heroin	2.9	3.2	0.0	0.0	0.0	1.8	1.8	1.6
Opiates	2.9	3.2	7.7	0.0	2.1	6.9	4.8	4.5
Amphetamines	11.4	3.2	11.5	5.9	4.5	11.9	7.7	7.7
Barbiturates	8.6	6.5	3.8	2.9	3.2	9.7	5.6	5.7
Cocaine	0.0	0.0	0.5	2.9	5.3	5.6	3.7	3.6
Tranquilizers	11.4	3.2	0.0	0.0	4.3	8.3	5.8	5.6
Methaqualone	5.7	6.5	3.8	0.0	1.1	6.9	4.9	4.6
Mescaline	0.0	6.5	3.8	2.9	0.0	6.9	4.7	4.2

sport organization are more likely than other students to use a given type of drug.

Academic-Oriented Associations

Turning now to the academic-oriented organizations and student drug use, we notice that a similar pattern obtains. Students were presented with a list of organizations and were asked to indicate the ones to which they belonged and actively participated in. These activities include drama, music, student government, and student publications. Although use of alcohol and smoking prevails highly among all categories of students, it is more so with those involved with student government and student publications (Table 24). The latter group of students, that is, those engaged in student publications, are the most likely to use amphetamines and tranquilizers. With regard to the drug-using habits of students who belong to student music clubs, it seems clear that next to students interested and participating in drama, they constitute the largest marijuana using group (39.8 per cent). Other than that, their general preference is LSD and barbiturates.

Of students who belong to drama clubs, at least one out of ten use amphetamines, methaqualone and opiates. More importantly, more than one-half (53.3 per cent) of these students use marijuana; this represents the highest reported use among the various organizations. Of students who refused to answer this question, a high percentage report use of alcohol, tobacco and marijuana.

The evidence above does not warrant any strong conclusions. It does suggest that students belonging to certain types of academic or profession-oriented organizations also have the tendency to use specific types of mind-altering substances.

But in order to have a clearer view of the identity of the student drug user, there is the need to explore the extent and type of organizational

TABLE 24

ACADEMIC-ORIENTED ACTIVITIES AND STUDENT DRUG USE

Drugs	Per Cent Within Each Organization Using Drugs						Total N=1107
	Drama N=45	Music N=93	Student Govt. N=60	Student Publ. N=57	None N=822	No Answer N=30	
Tobacco	64.4	53.8	50.0	54.4	62.9	73.3	61.3
Alcohol	77.8	76.3	88.3	86.0	89.4	86.7	87.5
Marijuana	53.3	39.8	31.7	29.8	46.7	39.7	39.2
LSD	6.7	8.6	11.7	5.3	3.3	3.3	4.4
Heroin	4.4	3.2	3.3	0.0	0.0	1.3	1.6
Opiates	11.1	4.3	3.3	1.8	4.4	6.7	4.5
Amphetamines	11.1	6.5	3.3	12.3	7.4	13.3	7.7
Barbiturates	8.9	9.7	3.3	3.5	5.4	6.7	5.7
Cocaine	4.4	6.5	1.7	3.5	6.7	3.3	3.6
Methaqualone	11.1	6.5	1.7	5.3	6.7	4.1	4.6
Mescaline	6.5	3.2	0.0	3.5	6.7	4.5	4.2
Tranquilizers	6.5	6.5	5.0	10.6	5.0	10.0	5.6

participation within the context of the student's self-definition.

It has already been established that the level of performance in school was related to use of drugs by students. Furthermore, students classifying themselves as "freaks" and, to a lesser extent, "greasers" are characterized by poor grades. Our analysis of involvement in student organizations shows the drug-user to be marginally involved in the school system. If this position is tenable, students identifying themselves as "freaks" should also be marginally involved in extracurricular participation. That this is the case is evident from the data in Table 25. More than one-half (51.3 per cent) of "freaks" and one-third of "greasers" do not belong to any organization or club. However, whereas one out of every twenty of "greasers" is affiliated with more than six organizations, absolutely none of "freaks" is also highly involved in a similar fashion. Perhaps, this explains why, of the two categories of students, "greasers" are less likely to use drugs than "freaks."

Consideration of the different types of organizational participation leads to the same conclusion. The fact is that a comparatively higher proportion of "freaks" and "greasers" have no involvement in sports and other academic-oriented organizations. Admittedly, the same is true of "jocks" with regard to participation in academic-oriented extracurricular participation but, true to their identity, they are much more involved in sports than any other category of students.

It is perhaps useful to remark that this is not a causal argument. It would be incorrect to argue that nonparticipation in student organizations causes the student to use drugs. This position would be acceptable only if, after accounting for the effects of all other variables, the strength of relationship between use of drugs and participation in extracurricular activities remains high. The concluding chapter of this study will show that this is

TABLE 25

SELF-DEFINITION AND ORGANIZATIONAL PARTICIPATION

Organisational Participation	Students Defining Themselves as						Total N
	Jocks N=334	Freaks N=103	Scholars N=189	Greasers N=69	Leaders N=234	D.K. N=150	
<u>No. of Organizations</u>							
None	16.6%	51.5%	23.3%	33.3%	24.0%	24.7%	281
One	31.1	24.3	34.9	27.5	27.3	23.3	324
Two	29.1	15.5	28.0	23.3	25.2	23.3	284
Three to Five	20.1	8.7	13.2	10.1	19.4	24.7	199
Six or More	0.3	0.0	0.5	5.8	3.7	1.3	17
No Answer	2.8	0.0	0.0	0.0	0.4	0.7	2
Total	100.0	100.0	99.9	99.9	100.0	100.0	1,107
<u>Sports</u>							
Tennis	1.7	0.0	5.8	0.0	5.8	4.0	35
Golf	4.0	1.0	2.6	0.0	2.9	2.0	31
Cross Country	3.1	1.0	2.1	0.0	2.9	2.0	26
Soccer	4.2	1.0	2.6	4.3	2.5	2.7	34
Baseball	13.0	2.9	4.3	2.9	8.7	9.3	94
None	67.2	90.3	76.2	84.1	72.7	70.7	815
No Answer	6.8	2.9	6.4	8.7	4.5	9.3	72
Total	100.0	100.0	100.0	100.0	100.0	100.0	1,107
<u>Academic-Oriented Organizations</u>							
Drama	2.5	2.9	4.2	1.4	7.0	4.7	45
Music	4.0	11.7	10.6	10.1	11.6	8.0	93
Student Government	6.2	1.0	4.2	1.4	8.3	5.3	60
Student Publications	3.4	5.8	7.4	1.4	5.4	7.3	57
None	80.8	78.6	70.9	82.6	65.7	70.0	822
No Answer	1.0	0.0	2.7	3.0	2.0	4.7	30
Total	99.9	100.0	100.0	99.9	100.0	100.0	1,107

not the case. The substance of the argument up to this point is that organizational participation is simply one of several factors that differentiate drug-using and non-drug-using students.

But how are these relationships between participation in extracurricular activities and drug use to be interpreted? The present study does not address itself specifically to this question. It is suggested that, for the participation a student demonstrates in extracurricular participation, he obtains in exchange various types of social recognition and rewards from school, peers and family. Such social recognition directly or indirectly awards status to involved students. Such responses from others reinforce student's self-concept and identity, and affect the subsequent selection, organization and direction of his behaviour. Furthermore, these nurturing social rewards and recognition respond to the status needs of the adolescent, and limit the paths to self-compensation through other types of anomic behaviour. On the other hand, nonparticipants, who are not beneficiaries of this type of nurturant social and status awards and recognition, will also have the tendency to adopt alternative modes of response to status needs which might entail compensatory use of mind-altering drugs. This may explain the differentials in use of drugs among "jocks", "student leaders," and "scholars" on the one hand, and "freaks" and "greasers" on the other. But even in this instance, when the influence of other variables have been accounted for by the step-wise multivariate analyses (Chapter V), the effects of student organizational participation appear to be comparatively minimal. Hence, it is safe to conclude that student participation in extracurricular activities is not a cause of the use of psychotropic drugs by students.

The Operation of Peer Group Influences

Turning now to the question of friends, it is crucial to consider the extent to which friendship associations constitute an independent variable for the use of psychoactive drugs. It is suggested here that association with persons who are favourably inclined towards a given type of behaviour has the potential of inducing exposed subjects to a favourable definition of, and attitude towards, the given behaviour. This would hold true for drug-using behaviour among students. Within a high school environment, patterns of friendship constitute the most common type of association. These patterns of association would tend to determine the attitude of any given student to any given type of behaviour. We could, within this theoretical context, posit a positive relation between the perceived use of drugs by one's friends and one's personal use of drugs. Hence, we had hypothesized that a substantial portion of drug-using youngsters would also have drug-using friends. In operational terms, drug users are more likely to state that many or most of their closest friends use drugs; non-users, few or none. The theoretical justification of this hypothesis is that one's closest friends generally constitute one's significant others; there normally exists a deeper level of identification with such close friends. They constitute an in-group, and behaviour reinforcement contingency. Glaser (1956:442) argued, in substance, that a person pursues a specific type of behaviour "to the extent that he identifies himself with real or imaginary persons from whose perspective his . . . behaviour seems acceptable."

To explore the possible relationship between the use of drugs by one's closest friends and one's personal use of it, students were asked: "Consider your six closest friends. How many of them use tobacco?" The response alternatives provided were: (1) none of them; (2) one; (3) two or three; (4) four or five; (5) all of them. The same procedure was applied to all the other drugs under consideration.

The data in Table 26 indicate that drug users are much more likely than non-users to report having at least two or three close friends who have tried each of these drugs. With reference to LSD, amphetamines and marijuana, an interesting pattern emerges. This concerns two extreme categories of students: abstainers and habitual users. A very high proportion of abstainers maintain that none of their closest friends use marijuana, LSD, and amphetamines. Of the habitual users a very high proportion also indicate that most or all of their closest friends are also users of the selected drugs. These findings show that the reported patterns of drug use have a strong positive relationship to the relative number of respondents' close friends who have tried the drug. Thus, nonusers of these specific drugs, that is, LSD, marijuana, amphetamines and, to a lesser extent, tobacco and alcohol, are most likely to report having no close friends who tried any of these drugs, followed in order by experimenters, occasional users, and regular users. Habitual users, on the other hand, most often indicate that all their friends have each tried these drugs. This invites the conclusion that the likelihood of any given student using drugs is largely contingent on whether he associates with drug-using or non-drug-using friends.

Peer Group Processes and Marijuana Use

To further substantiate this point, it was judged necessary to explore the friendship processes themselves that govern the initial use of marijuana. In their discussion of the social processes that govern the initial use of cannabis Becker (1963), Blumer (1967), and Goode (1970) recognize the preponderant importance of friendship relationships. In taking this view, they underscore the necessity of the availability of learning and performance structure for smoking the drug; it is these who legitimize, reinforce, and positively reward the marijuana-smoking behaviour--processes which are pre-

TABLE 26

REPORTED DRUG USE BY NUMBER OF SIX CLOSEST FRIENDS WHO
HAVE TRIED SELECTED DRUGS (N=1107)

Number of Close Friends Who Tried	Nonusers		Drug Users			
	Nonusers	Experi- menters	Occasional Users	Regular Users	Habitual Users	Other
<u>Tobacco</u>						
None	41.9%	22.2%	9.3%	10.6%	2.5%	37.5%
One	18.3	22.8	13.9	8.9	2.5	0.0
2 or 3	27.4	45.5	48.1	37.4	25.3	12.5
4 or 5	7.1	6.6	17.6	28.5	33.1	12.5
All	2.9	2.4	9.3	12.2	34.2	12.5
D.K.	2.4	0.6	1.9	2.4	2.5	25.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
N =	420	167	108	123	281	8
<u>Alcohol</u>						
None	43.8	27.5	8.8	1.0	0.5	20.0
One	14.1	14.8	5.0	1.6	0.0	0.0
2 or 3	26.6	35.4	28.6	11.5	4.5	20.0
4 or 5	10.9	10.5	29.8	29.5	9.5	10.0
All	3.9	12.0	27.8	56.1	84.3	20.0
D.K.	0.8	0.0	0.0	0.3	1.4	30.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
N =	128	209	238	305	217	10
<u>LSD</u>						
None	92.7	30.8	6.7	0.0	0.0	71.4
One	4.5	15.4	20.0	0.0	0.0	0.0
2 or 3	1.4	34.6	40.0	55.6	0.0	0.0
4 or 5	0.2	7.7	13.3	22.2	0.0	0.0
All	0.1	7.7	20.0	22.2	100.0	14.3
D.K.	1.1	3.8	0.0	0.0	0.0	14.33
Total	100.0	100.0	100.0	100.0	100.0	100.0
N =	1048	24	10	10	8	7

TABLE 26 (Continued)

Number of Close Friends Who Tried	Nonusers	Drug Users				
		Experi- menters	Occasional users	Regular users	Habitual users	Other
<u>Marijuana</u>						
None	72.4	22.6	6.1	1.0	1.9	83.3
One	13.3	21.8	11.2	5.7	3.7	0.0
2 or 3	11.7	41.1	53.1	41.9	17.8	0.0
4 or 5	1.2	7.3	16.3	25.7	16.8	0.0
All	1.0	7.3	12.2	25.7	58.7	16.7
D.K.	0.4	0.0	1.0	0.0	0.9	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
N =	667	124	98	105	107	6
<u>Amphetamines</u>						
None	89.6	35.9	23.1	28.6	16.7	60.0
One	5.4	30.8	23.1	7.1	0.0	0.0
2 or 3	3.3	17.9	34.6	42.9	16.7	20.0
4 or 5	0.4	10.3	11.5	14.3	16.7	0.0
All	0.2	2.6	7.7	7.1	50.0	0.0
D.K.	1.1	2.6	0.0	0.0	0.0	20.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
N =	1017	39	26	14	6	5

TABLE 27

FRIENDSHIP PROCESSES AND ACTUAL USE OF MARIJUANA

Variable	Frequency	
	N	Per Cent
Who provided you with the first marijuana you smoked?		
Parents (either father or mother)	4	0.9
Brother or Sister	36	8.2
Friends of the same sex	321	73.6
Some other Person	75	17.2
Total	436	100.0
Did your close friends use marijuana before you did?		
Yes	235	51.8
No	61	16.0
We all started at the same time	124	28.4
No answer	26	3.8
Total	436	100.0
Is marijuana usually present at parties you attend?		
Never	15	3.5
I don't think so	37	8.5
I think so, but I do not know for sure	28	6.4
Yes, some of them	226	51.9
Yes, most of or all of them	130	29.6
Total	426	100.0

Note: This analysis specifically deals with the subpopulation of marijuana users only. It excludes non-smokers and other non-respondents who number 671.

requisite for the pleasurable perception of the drug. Evidence from Table 27 support these views. For not only did an overwhelming majority of all smokers (73.6 per cent) receive their first "joint" from a friend (Table 24), but it was these friends who legitimized the behaviour by being an example: for one out of every two marijuana smokers (51.8 per cent) indicated that their friends smoked marijuana before they did. It appears, then, that close friends constitute both learning and performance structure for marijuana smoking, and would seem to be vital for the continuance of the behaviour. The implication is that marijuana smokers would most likely interact selectively, associating with those who approve of, and reward the behaviour, avoiding those who sanction it. This observation is sustained by the fact that most of the smokers attend parties at which the drug is present. In sum, the role of close friends appears to preponderate in the determination of any given student to smoke marijuana. This evidence further supports the argument that association with drug-using friends is a crucial determinant of drug use by students.

Multivariate Analyses

In order to relate data to theory and discover the extent of their convergence and divergence, it was judged necessary to subject the data to multivariate analyses. A theory is an interrelated set of ". . . constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting phenomena" (Kerlinger, 1964:11). One of the major concerns of the social sciences is explanation and prediction. Indeed, the stated purpose of the present study is the explanation of student drug-using behaviour, and the definition of the influence parameters of the various determinants of this behaviour. To realize this objective more satisfactorily, there is the need to subject our data to step-wise multivariate regression

analyses. Procedurally, student use of the twelve selected drugs was dichotomized or converted to dummy variables, and a step-wise regression analysis was performed on each of the following predictor variables:

1. Use of drugs by closest friends.
2. Use of drugs by a parent.
3. Grade point average.
4. Participation in student organizations.
5. Occupation of fathers.
6. Year in school.
7. Family structure.
8. Education of parents.
9. Student's self-concept.
10. Occupation of mothers.

In each analysis, after the first six variables were selected by the step-wise procedure, the inclusion of additional variables resulted in negligible increase in the proportion of total variation in the criterion variable that was explained, or predictable, by the linear combination of the first six variables.

Table 28 illustrates the proportion of usage of the various drugs explained by the set of ten predictor variables. The six characteristics selected as the best predictors of marijuana use and their contribution to the R^2 statistic (.408) are: (1) drug use by close friends; (2) drug use by a parent; (3) year in school; (4) grade point average; (5) participation in extracurricular activities, and (6) education of parents.

The leading factor explaining the use of LSD, and accounting for 11 per cent of the variability are (1) use of the drug by close friends; (2) use of drugs by a parent; (3) mother's occupation; (4) organizational participation; (5) grade point average; and (6) year in school.

TABLE 28

ORDER OF SELECTION OF TEN VARIABLES IN STEP-WISE REGRESSION ANALYSES AND
THEIR CONTRIBUTION TO THE TOTAL R²

Variables	Tobacco		Alcohol		LSD		Marijuana		Tranquilizers		Methaqualone	
	Order	R ²	Order	R ²	Order	R ²	Order	R ²	Order	R ²	Order	R ²
1. Friends' drug use	1	.235	1	.272	1	.099	1	.361	1	.061	1	.081
2. Parents' drug use	2	.257	3	.320	2	.104	2	.387			2	.089
3. Grade point average	3	.275	4	.323	5	.111	4	.404	4	.067	4	.091
4. Extracurricular activities	4	.281	5	.325	4	.110	5	.407			5	.092
5. Fathers' occupation	5	.284	6	.326							3	.090
6. Mothers' occupation					3	.108			6	.067		
7. Year in school	6	.286	2	.299	6	.112	3	.309	2	.066	6	.093
8. Family Structure									3	.066		
9. Self-Concept									5	.067		
10. Parents' education							6	.408				

Variables	Heroin		Opiates		Amphetamines		Barbiturates		Cocaine		Mescaline	
	Order	R ²	Order	R ²	Order	R ²	Order	R ²	Order	R ²	Order	R ²
1. Friends' drug use	1	.051	1	.076	1	.130	1	.111	1	.101	1	.065
2. Parents' drug use	4	.055	2	.085	2	.137	2	.123	2	.107	2	.076
3. Grade Point average	5	.055			6	.143	4	.127	5	.113	3	.079
4. Extracurricular activities											4	.081
5. Fathers' occupation							6	.129			5	.083
6. Year in School	3	.054	6	.093	4	.141	3	.126	4	.112		
7. Family Structure												
8. Self-concept	2	.053	3	.088	5	.143	5	.128	6	.114		
9. Mothers' Occupation			4	.090							6	.084
10. Parents' Education			5	.092	3	.140			3	.110		

The most important contributors to the explanation of the variability in the use of heroin ($R^2 = .055$) are, beside drug use by close friends and parents, grade point average, student's self-concept, and year in school.

Only 9 per cent of the variability in the use of opiates has been explained by the six predictor variables. The best predictors are: (1) drug use friends; (2) drug use by parents; (3) student's self-concept; (4) mother's occupation; (5) parental education and (6) family structure.

The variables cited as the best predictors of amphetamines use ($R^2 = .143$) are: (1) use of drugs by close friends; (2) use of drugs by parents; (3) education of parents; (4) year in school; (5) self-concept and (6) grade point average.

Factors selected as the strongest predictors of barbiturates ($R^2 = .129$) are: use of drugs by (1) close friends; (2) by parents; (3) year in school; (4) grade point average; (5) student's self-concept and (6) occupation of fathers.

The best predictors explaining the variability in the use of cocaine ($R^2 = .114$) are: drug use by (1) close friends; (2) by parents; (3) education of parents; (4) year in school; (5) grade point average and (6) self-concept of students.

Major factors explaining the use of methaqualone are: use of drugs by: (1) close friends; (2) parents; (3) occupation of fathers; (4) grade point average and (5) year in school. But all these factors account for only 9 per cent of the variability in the use of this drug.

Characteristics cited as the best predictors of use of mescaline ($R^2 = .084$) are: use of drugs by (1) close friends; (2) by a parent; (3) grade point average; (4) participation in student organizations, occupation of fathers and (6) occupation of mothers.

The leading factors explaining the use of tranquilizers ($R^2 = .067$) are :

(1) use of drugs by parent; (2) year in school; (3) family structure; (4) grade point average; (5) student's self-concept and (6) occupation of mothers.

The initial six predictors which account for 29 per cent of the variability in the use of tobacco are: use of drugs by (1) close friends; (2) parents; (3) grade point average; (4) organizational involvement; (5) occupation of fathers and (6) year in school. This last predictor is cited as the second most important factor in the explanation of use of alcohol. All six characteristics account for 33 per cent of the variability in alcohol use.

The predictability of the best six attributes was reasonably good for some of the regression analysis, but poor for others. As measured by the R^2 statistic, the proportion of criterion variability explained is 6 per cent for use of heroin and tranquilizers, 8 per cent for use of mescaline, 9 per cent for use of opiates and methaqualone, 11 per cent for use of LSD and cocaine, 13 per cent for use of barbiturates, 14 per cent for use of amphetamines, 29 per cent for tobacco use, 33 per cent for alcohol use and 41 per cent for use of marijuana. Evidently, tobacco, alcohol and marijuana use are best predicted by the initial six predictor variables. But in the analyses of use opiates, methaqualone, tranquilizers and mescaline, less than 10 per cent of the criterion variability is explained by the first six variables in each case.

CHAPTER V

CONCLUSIONS

The Family

The family as specific unit of interaction constitutes one of the most crucial sources of independent variables of various and varying types of adolescent behaviour. This is one of the basic tenets of the present study. Vital to an adolescent's behaviour are certain characteristics of the family, characteristics which we have defined in terms of structure, and the quality of the ongoing interactional process within this structure. With regard to the latter aspect, the elements that are basic to the direction an adolescent's behaviour is likely to take depends on (1) the quality of parental models of behaviour and (2) the quality of existing parent-student relationships.

In examining the drug-using behaviour of students in the light of our data, it would appear that this behaviour does not necessarily depend on an unstable family situation. Admittedly, students from broken homes are the most likely to use the soft psychotropic drugs. This is especially true of students who have been reared for the most of their lives by their fathers alone. But equally true is the fact that such students are the least likely to use any of the hard mind-altering drugs. On the other hand, students from stable families are the most likely to use hard drugs. However, use of hard drugs is noticeably low among all categories of students. What the data suggest is that the use of drugs is not mainly a function of whether or not a student comes from a broken home or from a stable family, but that certain more fundamental family processes have a stronger predictability as to which

student will use or will not use drugs. These processes have been identified as parental drug relatedness, and quality of parent-child relationship.

It is common sense knowledge that exposure to specific types of behaviour or attitudes has the potential of generating attitude formation or attitude change towards those behaviours. This general principle is applicable to drug-using behaviour of students. It is true that although students are exposed to various types of behaviour, it is the parents who constitute a crucial behaviour reinforcement contingency. In the case of drug-using behaviour of students, the quality of parents as models appears to be crucial. Indeed, the attribute often selected as the second most important predictor of drug use by the step-wise multivariate analyses was drug use by parents. Perhaps, this may be a potentiating factor. But it can fairly be concluded that for parents who are in any way involved with drugs, the probability of their raising drug-using students is greater than parents not in any way involved with drugs.

But how does student use of drugs relate to his religious characteristics? Is the fact of formal religious affiliation alone competent to explain this behaviour? Our data suggest this is the case. However, there is more to it than that. Admittedly, students without formal religious affiliation, in comparison with their counterparts, have a higher probability of using drugs. But that is more important is the degree of the student's own personal attitude to religion. Religious attitudes are defined by the student's own description of the type of his interest in religion, and behaviourally, by his actual involvement in religious events and services. This, more than the fact of formal affiliation, is the best predictor of the likelihood of his using drugs. The various explorations of the existing relationships between religiosity and drug use suggest the conclusion that use of drugs is directly related to whether (1) a student has no formal religion; (2) has no

interest, or has only an intellectual interest in religion and, (3) is marginally involved in religious activities. On the other hand, it is inversely related to (1) formal affiliation to a religion; (2) deep interest in religion and, (3) high level of participation in religious services or activities.

The School System

Turning to the school as a specific unit of social system, we recognize that of the factors that are of vital importance for the student, performance level and participation in student organizations are predominant. For the quality of a student's academic performance is a good index of whether or not he will use psychoactive substances. In their discussion of the relationship between student's grade-point average and the use of drugs, Blum and his associates (1969b) came to the conclusion that no observable connection exists between the two. In their view, drug use is in no way related to the level of a student's performance in school. But the conclusion suggested by our study is the exact contrary of this position. Our data suggest a direct relationship between the quality of a student's grade-point average and his use of psychotropic substances. High grades are inversely related with low use, and low grades are directly related with high use of drugs. This supports the hypothesis, that the poorer the performance at school, the more the likelihood that students will use drugs.

Evidence from the multivariate analyses strengthens this conclusion. Grade-point average was selected as a highly relevant attribute to the use of all drugs. This characteristic was often selected as the third most important predictor of student drug use. This affirmation is further sustained by the R^2 statistic. For the proportion of variability accounted for by grade-point average in conjunction with peer group and parental-drug-using influence is

31 per cent after the tenth stepwise regression (Table 26). It is clear, therefore, that the student's grade-point average, even though it may not be the cause of drug use, is indeed a fairly strong predictor of the likelihood of the selection the drug-using behaviour by a given student.

Turning to the area of student's organizational participation, we recognize a similar phenomenon: the use of psychotropic drugs appears to be linked with the degree to which the student is involved in extracurricular activities. Contrary to the findings of other students of the field, (for instance, Nechama Tec, 1972:660), the drug-using student is one who is either not involved or only marginally involved in student organizations and activities. On the other end of the continuum is the highly involved student, that is, the one who participates in at least three student organizations. More involved students are the least likely to use mind-altering drugs. Furthermore, the specific organizations to which a student belongs play a selective role with regard to the type of drugs he is most likely to use. For instance, whereas students who participate in student government prefer alcohol, those participating in drama and student publications have amphetamines as their drugs of choice. For baseball players, cocaine is the drug of choice; in contradistinction, students who belong to tennis and cross country clubs would prefer amphetamines.

The importance of organizational participation for student behaviour is further underscored by the fact that this attribute has been prominently chosen in each stepwise multivariate analysis as a leading explanatory factor of student drug use. It is to be emphasized, however, that organizational participation is not considered as a cause of drug use. Rather, it is one of the best indicators of the likelihood of a student selecting a drug-using mode of behaviour. In the light of this and previous findings, the conclusion

can be drawn that the less involved a student is in organizational participation, the more the likelihood that he will use drugs, and vice-versa.

The Peer Group

By far the most crucial predictor of student drug use is peer group influence. Of all the ten predictive variables considered in the multivariate analyses, use of drugs by friends is always selected as the most important predictor of personal drug use. This predictor variable--that is, drug use by close friends--accounts for the highest proportion in the variability of use of drugs within every drug category. This finding is consistent with the findings of other studies, which ascribe to association with friends a role of central importance in drug-using behaviour of students. In light of these repeated findings, the conclusion can be drawn that, all other things being equal, the probability of any given student using or not using drugs is contingent on whether or not he associates and identifies himself with drug-using or non-drug-using friends.

Student Drug-User and Non-Drug-User: Composite Profiles

The foregoing considerations bring us to the point where composite profiles of the typical student drug-user and non-drug-user can be drawn.

Different high school students define themselves variously. Some define themselves as "scholars," "student leaders," or "jocks." Some describe themselves as "greasers." Still others define themselves as "freaks." From responses of students, a number of polythetic taxonomies of students could be constructed. In one class it would include "scholars," "jocks," and "student leaders;" common to all these students is that they are from homes in which both parents live together; or, in the case of broken homes, the majority of them have been raised for most of their lives by their fathers. Their interest in religion is serious and participation in religious

activities is high. The relationship with their parents can be characterized as good. Students within this category are high academic achievers, more involved in extra curricular activities, and tend to associate with non-drug-using friends.

A second group would include students who define themselves as "freaks." In terms of family structure, they tend to come from broken homes where a father figure is absent. In terms of the school system, they are marginal both in academic achievement and participation in student organizations. They show little interest in religion (or at most only an intellectual interest) and their participation in religious services is marginal. The relationship with their parents is either indifferent or poor, and most or all their close friends are users of drugs.

Between these two extreme categories is a third group of students: the "greasers," sharing some characteristics of the "freaks," and other characteristics associated with "scholars," "jocks," and "student leaders." Like the latter group, the "greasers" are high academic achievers; like the former, they are marginally involved in extra curricular activities.

The typical student drug user more closely conforms to the portrait of the student who typifies himself as a "freak." He is most likely to come from a non-intact family; he has no interest in religion or, at best, only an "intellectual" interest; he participates very infrequently in religious activities, has a grade-point average of C+ or less, and is marginally involved in student extra curricular activities. Finally, he characterizes most or all of his close friends as drug users.

The typical non-drug-user, on the other hand, is most likely to define himself as a "scholar," "jock," or "student leader." He participates frequently in religious services, and considers himself a deeply "religious"

person. The quality of his relation with his parents is characteristically very good. He is well integrated into the school system in the sense that he is likely to be at least a B student, is more involved in student organizations or activities, and most of his friends abstain from drugs.

Discussion

What implications do these findings have for theory and research?

For the student of sociology, human behaviour is conceived as a dependent variable, that is as a function of factors located in the personality system, cultural system, and societal system. These systems are both inter-related and interdependent. Any explanation of human behaviour must address itself to factors emanating from these systems of action. Drug-using behaviour is simply one instance of this general postulate and hence can be understood and explained only within the framework of these systems of action.

In utilizing this conceptual model of human behaviour, we assumed that adolescent drug-using behaviour was basically a specific type of rational, human action amenable to rational, systematic study. It was further postulated that this behaviour can be handled theoretically within the framework of general theory of interaction and reference group theory. This theoretical approach has been supported by the findings of the present study. But to develop this justification, there was need to analyze drug-using behaviour within the family-school-peer group interaction model. It was necessary, therefore, to subject the student's self-concept to critical examination within this model, for it is conceivable that each of these systems can contribute to the emergence and evolution of the self-concept in different ways. Our theoretical orientation also signalled the need for a theoretical complementarity in order to take into account the normal social processes

which exist among close friends. Consequently, the analysis of drug use within this theoretical model has brought us to the point where observations of an innovative nature can be made.

At the behavioural level, within the community we have studied, the distinction between socioeconomic levels tend to disappear. Indeed, demographic factors of drug-using behaviour have progressively become problematic, if not altogether unreliable bases for explaining drug use. Increasingly, more reliable data discount the traditional explanation of drug use as an anomic adaptation to structured socioeconomic strains, or the more recent view that such behaviour is the latent function of middle-class, wealthy families. Reliable documentation of the prevalence of drug use among all socioeconomic strata of society tends to obliterate the middle-class-lower-class distinction with respect to this behaviour.

Similarly, although the distinction between stable and non-stable families may serve a heuristic purpose for initial research, this distinction need to be accepted with a caveat. The theoretical basis of the distinction may be convincing, but supporting data do not invariably sustain these theoretical contentions. Both stable and non-stable families are characterized by certain properties that seem to influence adolescent behaviour. These more basic properties--for example, parental models for behaviour and the nature of ongoing parent-child relationship--need systematic exploration within both stable families and broken homes. Moreover, each type of non-intact family needs to be considered in its own right. Differentials in drug use within various non-stable families suggest the need for such an approach.

The present study suggests that the most important distinctions with regard to student drug use occur in terms of three pairs of dichotomies: marginality versus integration, non-religiosity versus religiosity, and non-

nurturant versus nurturant family relationships. It should be emphasized that these dichotomies are theoretical constructs and not monothetic categories. With regard to religiosity-non-religiosity dichotomy as well as the nurturant-non-nurturant continuum and the role of close friends, the findings of this study are consistent with other studies. What our data add to the results of previous analyses is information on students' self-concept within the context of religiosity, parent-child relationships, academic performance and student organizational participation, and types of close friends.

Analyses of drug-using behaviour within the integration-marginality conceptualization has yielded evidence that cannot be labelled traditional. Admittedly, students who are marginal in both the academic and extra curricular sphere of life are the most likely to use drugs. It is equally true that a greater proportion of their close friends also use drugs. Future research needs to address itself to two questions: (a) how and why do marginal students first use drugs, and (b) what are the factors that determine these students' choice of friends?

A related and crucially important issue is the self-concept of students. The fairly consistent pattern between students' self-concept and drug use invites more indepth exploration. For example, what social forces impinge upon the high school student so that he defines himself the way he does? What major factors determine the evolution of this self-concept, how is self-concept related to and dependent on other relevant variables? What social factors differentiate the "freak" from other students and how do these factors differ from what moulds other students? Indeed, the high relatedness of "freaks" with all types of drug use provides more questions than answers. The need exists, therefore, to explore how the family, school, and friends contribute to the evolution of the "freak" and also contribute to the inter-

personal attractions both among "freaks" and between "freaks" and other students. This kind of research would make it possible to disentangle the labyrinth of social forces that influence the students' adoption of specific attitudes towards various types of behaviour. It is our contention that an exploration of this is vital for the generation of a theory that would mark a significant departure from the traditional deviance orientation to a more relevant and articulate explanatory framework. The conspicuous absence of a theory dealing with the drug-using behaviour of middle-class adolescents is a thwarting problem in sociological research. It is our belief that the construction of such theory would include among its major elements the family system the school system, the peer group system and the self-system. The extent of these systems' interdependence with, and relatedness to specific forms of adolescent behaviour would then be the additional task of further sociological analysis.

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APPENDIX



6525 North Sheridan Road, Chicago, Illinois 60626 * (312) 274-3000

DEPARTMENT OF SOCIOLOGY

April 4, 1974

To: (Name of selected student)
From: Yvon Yangyuoru
Subject: Collective Behaviour

Dear . . . :

A few months ago the Center for the Study of Adolescent Drug Use, Loyola University of Chicago, did a survey of students' attitudes towards drugs. However, a closer look at the data calls for further information if the conclusions to be drawn from them are to be fair to school and students.

The purpose of this communication is to request your voluntary participation in a proposed follow-up study. It is our judgment that such a follow-up study is necessary if the findings of the survey are to be of much value.

It is our intention, therefore, to interview a limited number of students. The students to be interviewed have been selected on a purely random basis, and you are one of them. The interviewer will be Yvon Yangyuoru, a graduate student currently pursuing a doctoral degree in sociology, Loyola University of Chicago.

We would like to emphasize our concern for confidentiality, and to give unequivocal assurance that whatever will be learned in connection with this study will be kept confidential. Demands of fairness to school and students dictate this.

We would like to express the hope that no obstacles will place themselves in the way of your participation and cooperation in this study, and that you will find it convenient and useful to give us a few moments of your time.

Please fill in and detach the required information at the bottom of this page, seal it in the pre-stamped, enclosed envelope, and drop it in the mail. Arrangements for the exact time and place of the interview will be made through the appropriate channels, and you will be duly informed.

Hopeful that this request will meet your favourable attention and response, and wishing you all the best in studies.

Sincerely,

Yvon, Yangyuoru

Please indicate two dates judged by you to be most convenient for an interview:

Date 1 _____ Time _____

Date 2 _____ Time _____

Homeroom number _____



6525 North Sheridan Road, Chicago, Illinois 60626 * (312) 274-3000

DEPARTMENT OF SOCIOLOGY

April 9, 1974

To: (Name of Principal)

From: Yvon Yangyuoru

Subject: Drug Research

Dear (Name of Principal):

Enclosed is a copy of the letter requesting students' voluntary participation in the proposed follow-up drug study. Hopefully, it will be possible to begin interviewing as soon as school resumes after the Easter recess.

Wishing you a very happy Easter.

Sincerely,

Yvon Yangyuoru

Drug-Using Behaviour: Follow-Up Interview

1. Year in school
 - Freshman
 - Sophomore
 - Junior
 - Senior

2. Age at last birthday
 - 14 years or less
 - 15 years old
 - 16 years old
 - 17 years old
 - 18 years old or over

3. Residential area
 - Skokie
 - Morton Grove
 - Niles
 - Chicago
 - Other (please specify)

4. Grade-point average
 - C or less
 - B- to B+
 - A- and above

5. How many school clubs, teams, organizations and recognized groups do you hold membership in right now?
 - None
 - One
 - Two
 - Three to five
 - Six or more

6. Do you currently belong to any of the following?
 - Tennis
 - Golf
 - Cross Country
 - Soccer
 - Basket Ball
 - Football
 - Other (please specify)
 - None of the above

7. In which of the above do you actively participate in?

15. Indicate the frequency of your participation in religious activities and/or religious services?
- Never participate
 One to four times a year
 Five to ten times a year
 One to two times a month
 About once a week
 More than once a week
16. What is the highest level of education completed by your father?
- Some grade school
 Finished grade school
 Some high school
 Finished high school
 Some college
 Completed college
 Postgraduate study
17. What is the highest level of education completed by your mother?
- Some grade school
 Finished grade school
 Some high school
 Finished high school
 Some college
 Completed college
 Postgraduate study
18. Below are some categories which include different types of occupations. Which category do you think comes closest to describing your father's occupation?
- I have no father living
 Farmer
 Unskilled worker (assembly line, factory worker, etc)
 Skilled, blue-collar worker (machinist, tool and die maker, etc.)
 Service (T.V. repairman, policeman, fireman, etc.)
 White collar employee
 Professional, executive, large business owner
 Don't know
19. What is your mother's occupation?
- No mother living
 Mother lives in the home and does not work out the home
 Mother works part-time
 Mother works full-time
20. For most of your life were you brought up by your:
- Father and mother both living at home
 Father (separated or divorced from mother)
 Mother (separated or divorced from father)
 Father (mother deceased)
 Mother (father deceased)
 Father and stepmother
 Mother and stepfather
 Some other relative
 A non-relative

21. If you were not brought up by both parents at home, how old were you when the change took place?
- 0 - 5 years
 6 - 11 years
 11 - 15 years
 16 years and over
22. How would you characterize your relationship with your parents or the persons acting in their place?
- Very good (we are close)
 All right (we get along)
 Indifferent
 Not good (we disagree a lot)
23. During the last twelve months have you taken any drugs other than those prescribed by a doctor?
- Yes
 No (if no, proceed to item 41)

If yes, which of the following drugs have you taken and how many times have you taken them?

	Not at all	Less often than monthly	About once a month	About once a week	Several times a week	Daily
24. Alcohol	1	2	3	4	5	6
25. Amphetamines	1	2	3	4	5	6
26. Cocaine	1	2	3	4	5	6
27. Marijuana	1	2	3	4	5	6
28. Barbiturates	1	2	3	4	5	6
29. LSD, DET, DMT	1	2	3	4	5	6
30. Mescaline	1	2	3	4	5	6
31. Heroin	1	2	3	4	5	6
32. Opiates (opium, codeine, demeral)	1	2	3	4	5	6
33. Tranquilizers	1	2	3	4	5	6
34. Methaqualone	1	2	3	4	5	6
35. Tobacco	1	2	3	4	5	6

36. Who provided you with your first marijuana?
- Parents, either father or mother
 Brother or sister
 Friends of the same sex
 Some other person (specify)
 I have never used marijuana

37. Did your close friends use marijuana before you did?
 Neither I nor my close friends smoke marijuana
 Yes, they smoked marijuana before I did
 No, I smoked marijuana before they did
 We all started at the same time, some before, some after me
 I do not smoke marijuana, but some of my close friends do

38. Is marijuana usually present at parties at which you attend?
 Never
 I don't think so
 I think so, but I do not know for sure
 Yes some of them
 Yes, all or almost all of them

39. Did you have your first experience
 Alone
 With a brother, sister, or other relative
 With one close friend
 With an acquaintance
 With several persons
 At a party

40. Where do you most often obtain drugs that you get high with?
 I do not use drugs
 From medicine cabinet at home
 From pharmacy
 From friends
 Other sources (please specify)

41. Usually when you go out with your friends to some place where you are alone with them, how many of them will use:

	All of them	Half of them	One Quarter of them	None of them
41. Tobacco	1	2	3	4
42. Alcohol	1	2	3	4
43. Marijuana	1	2	3	4
44. LSD, peyote	1	2	3	4
45. Amphetamines	1	2	3	4
46. Barbiturates	1	2	3	4

47. How many brothers and sisters do you have altogether?
 None
 One
 Two
 Three or more

48. To the best of your knowledge, does any of your brothers or sisters use:

	Yes	No	Don't Know
Tobacco	1	2	3
Alcohol	1	2	3
LSD	1	2	3
Marijuana	1	2	3
Amphetamines	1	2	3
Barbiturates	1	2	3
Heroin	1	2	3

To the best of your knowledge, has either your father or mother used any of the following:

	Not at all	Less than monthly	About once a month	About once a week	Several times a week	Daily	Don't know
49. Tobacco	1	2	3	4	5	6	7
50. Alcohol	1	2	3	4	5	6	7
51. Marijuana	1	2	3	4	5	6	7
52. LSD	1	2	3	4	5	6	7
53. Amphetamines	1	2	3	4	5	6	7
54. Barbiturates	1	2	3	4	5	6	7
55. Heroin	1	2	3	4	5	6	7
56. Tranquilizers	1	2	3	4	5	6	7

57. Most students can choose one group of people to which they would like to belong. Which of the following groups would you most like to belong? Even if one group does not exactly describe how you feel, choose the group that best describes your ideal?

- Jocks
 Freaks
 Scholars or collegiates
 Greasers
 Student leaders
 Other (specify)

58. To the best of your knowledge, which type of students usually take drugs?

- Scholars or collegiates
 Student leaders
 Jocks
 Greasers
 Freaks
 Other

59. Which of the following reasons do you think best describes the motives for student drug use?

- Curiosity, just to find out what it is like
- "Kicks," an enjoyable experience, to feel good
- Escape from problems or depression
- Boredom, for something to do
- Social pressure, to go along with friends
- Expression of rebellion or resistance
- Relaxation
- Other (specify)
- Don't know

APPROVAL SHEET

The dissertation submitted by Yvon Yangyuoru has been read and approved by the following Committee:

Dr. William M. Bates, Chairman
Professor, Sociology, Loyola

Fr. Thomas M. Gannon, S.J.
Associate Professor and Chairman,
Sociology, Loyola

Dr. James O. Gibbs
Assistant Professor, Sociology, Loyola

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Jan 13, 1975

W^m Bates
Director's Signature