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A Longitudinal Study of Drug Use and Delinquency in a National Sample of Youth: An Assessment of Causal Order

A Report of The National Youth Survey
(Project Report No. 16)

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EXECUTIVE SUMMARY

In this report, the longitudinal relationship between drug use and delinquency in a national sample of youth is investigated. The sample of youth used in the analyses is a subset of the National Youth Survey respondents who were interviewed in 1977, 1978, and 1979 about their drug use and delinquent behavior.

In determining developmental patterns of drug use, it was discovered that the vast majority of youth who use drugs followed a progression of alcohol use, to alcohol and marijuana use, to use of alcohol, marijuana, and other drugs, with many youth remaining at each stage of the progression. Only a few rare types did not follow this progression. This sequence, however, provides no evidence for the "stepping stone" theory that the use of one drug necessarily leads to or causes the use of another drug. Although the use of alcohol is associated with a higher probability of subsequent marijuana use and marijuana use is associated with a higher probability of using other drugs, the evidence is insufficient for a causal relationship. Further, the probabilities of progression are not very high, with only one youth in three advancing at each step of the progression. The proportion of youth contained in the major drug use types is also suggestive of the progression. In 1978, approximately 53% of the youth studied had no significant involvement in drug use, 24% used alcohol, 18% used alcohol and marijuana, and only 4% were users of alcohol, marijuana, and other drugs.

There is general agreement about the relationship between drug use and delinquency across both cross-sectional and longitudinal analyses, and across both serious (UCR Part I) offenses and most minor offenses. The majority of youth, and often a large majority, either have no involvement in delinquent behavior or have no involvement in drug use. As a result, for the majority of youth, the use of drugs is not related to involvement in delinquent behavior. Among youth who both use drugs and are engaged in delinquent behavior, the levels of delinquency are lowest among alcohol users, higher among alcohol and marijuana users, and highest among users of alcohol, marijuana, and other drugs. Although this ordering is highly consistent, an examination of longitudinal patterns of drug use and delinquency indicates that, for the largest group of youth who are both drug users and delinquent, involvement in delinquent behavior, especially minor offenses, precedes drug use. Smaller groups of youth displaying simultaneous initiation into drug use and delinquency or whose drug use precedes involvement in delinquent behavior do exist, however. Thus, among youth who are both delinquent and drug users, there are different temporal orderings of drug use and delinquency for different types of youth.

Because of their temporal ordering in relation to delinquent acts, illegal service offenses (which among the youth studied consist almost entirely of selling drugs) deserve special comment. For the most part, youth engaged in these offenses are users of marijuana, or marijuana and other illicit drugs, and their drug use was initiated either before or concurrent with their involvement in these delinquent behaviors. Thus it would appear that drug use is commonly a precursor to involvement in selling drugs.

The findings in this report are consistent with previous research. Increasing involvement in drug use is associated with increasing involvement in delinquent behavior. Strong evidence for any of the three explanatory hypotheses (drug use leads to delinquency, delinquency leads to drug use, or both are dependent on preexisting deviant orientations) is not contained in the analyses provided. However, the existence of different temporal orderings of the onset of drug use and the initiation of delinquent behavior among different subgroups of youth indicates that no one explanation may apply to all youth. Global generalizations about the drug use/delinquency relationship within the youth population are likely to be inaccurate.

I. Introduction

This report describes the relationship between drug use and delinquency in a national sample of youth from 1976 to 1978. The examination of this relationship is based on data obtained from the National Youth Survey (NYS), a longitudinal study of delinquency and drug use among American youth from 1976 to 1980. The NYS employed a national probability sample of youth aged 11-17 in 1976 and participating youth were interviewed each year over the five-year period. This report is based on the first three years of data. Because both cross-sectional and longitudinal data are available from the NYS, it is possible to examine both static and developmental drug use patterns and relate these patterns to involvement in delinquent behavior.

The following section provides a brief overview of the literature on drug use and delinquency. Section III provides a description of the National Youth Survey. Section IV outlines the general analysis approach used in this report to examine the relationship between drug use and delinquency. Sections V and VI describe the findings of cross-sectional and longitudinal analyses.

II. An Overview of Drug Use/Delinquency Research

It has generally been assumed that drug use and crime are related and, more specifically, that drug use is a cause of crime. Brief historical perspectives including public sentiments about and political responses to this assumed relationship can be found in NIDA (1976), Weissman (1979), Inciardi (1980), and Maurer (1972). There is a large body of literature on the drug and crime relationship, and this literature has recently been reviewed by Gandossy et al. (1980), who provide references to other current drug/crime literature surveys. Another relatively recent review of the literature on the drug/crime relationship among adolescents is provided by Elliott and Ageton (1976). Studies of the relationship between alcohol use and delinquent behavior among youth are summarized by Blane and Hewitt (1977), and summary statements concerning the relationship between drug use and deviant behavior in longitudinal studies of youth are provided by Kandel (1978).

Because a full review of the literature on drug use and crime among adolescents is beyond the scope of this paper and a generally complete review is already contained in the above references, such a review is not provided in this report. A brief overview of the general findings of prior research efforts is furnished, however, to provide a background for the discussion of research results presented later in this report. It should be noted that, while there is a large literature on drug use and the social- psychological correlates of drug use among youthful drug users, there are only a few studies that focus on the relationship between drug use and crime in adolescent populations.

There is general consensus that drug use and delinquent behavior are related. This relationship has been demonstrated in a number of cross-sectional studies that indicate that levels of drug use vary with levels of general delinquent behavior. Although there is some disagreement about this relationship for alcohol use (see Blane and Hewitt, 1978) and at least one dissenting study for amphetamine use (see Scott and Wilcox, 1965), there is a strong consistency for this cross-sectional drug use/delinquency relationship across studies of detected drug users, studies of adjudicated delinquents and studies employing samples of the general youth population. In most instances this observed drug/delinquency relationship is of a general nature, holding for both serious and nonserious delinquent behaviors.

Given this general finding from cross-sectional studies, three postulated causal relationships are often suggested: (1) drug use leads to crime, (2) crime leads to drug use, and (3) drug use and crime are both manifestations of a general orientation towards deviance and delinquency (i.e., they are not causally related but are the result of other underlying variables or subcultural orientations). The hypothesis that drug use leads to crime is based on the argument that the cost of illicit drugs leads the drug user into income-producing crime, or the argument that the use of drugs either through direct pharmacological effects or through a lowering of normal inhibitions increases the likelihood of violent aggressive behavior. The hypothesis that crime leads to drug use is based on the notion that involvement in delinquent behavior increases the chance of being exposed to drug use and thus the likelihood of using drugs. The third hypothesis maintains that the observed relationship between drug use and delinquency is spurious and results from a general orientation towards deviance and participation in delinquent groups.

It should be observed that it is possible for all three hypotheses to be true when applied to certain populations or groups of youthful drug users (see Tinklenberg, 1973; Inciardi, 1980), although very few researchers appear to allow for this possibility. For example, the distinction between hypotheses 2 and 3 becomes blurred if it is assumed that, for some youth, delinquent behavior precedes the adoption of a delinquent orientation (as proponents of labeling theory might argue), and that once established, this orientation is maintained by involvement in delinquent subgroups that provide support for drug use. It should also be noted that the numerical methods often employed in the drug/crime research are capable of reflecting major trends and relationships in the samples studied, but may miss different relationships displayed by small subgroups of youth (cf. Brennan et al., 1981; Dunnette, 1975).[1]

There is considerable consensus among empirical studies about certain aspects of the three basic drug/crime hypotheses as applied to youth. Almost all studies report that involvement in both minor and serious delinquent behavior precedes use of illicit drugs (except for alcohol).[2] While the strongest evidence for this finding comes from longitudinal studies of general youth populations employing self-report measures of delinquency and drug use,

[1] Although the importance of paying full attention to various subgroups of youth is emphasized by Dunnette, his use of the AID technique is questionnable. See, e.g., the reviews by E.M. Cramer in Psychometrika, 36 (4), 1971.

[2] For an example of a subset of youth for whom drug use precedes delinquent behaviors, see Inciardi, 1980.

studies employing arrest data and studies employing known drug-using groups commonly reach a similar conclusion. This evidence is inconsistent with the notion that, in general, drug use results in or leads to the initiation or onset of delinquent behavior.

Whether there are increases in delinquency associated with the onset of drug use, however, is a question about which there is limited and contradictory information, and the findings appear to be drug-dependent. In general, the available evidence indicates that marijuana use is not related to increases in violent offenses or other forms of delinquency (Gandossy et al., 1980; Elliott and Ageton, 1976; Tinklenberg, 1974; Goode, 1970; Johnson, 1973).[3] A similar conclusion appears to hold for hallucinogens. The findings concerning use of barbiturates and amphetamines and associated delinquency are mixed, but there is some evidence of increased involvement in violent crimes with the use of these drugs, (Gandossy et al., 1980). This latter relationship also appears to characterize the relationship between the use of alcohol and violent crimes (Tinklenberg, 1974). It is likely that the relationship between use of these drugs and delinquency varies between different populations of drug users, and is mediated by the amount and frequency with which the drugs are used. Although both ethnographic studies

[3] Although marijuana users may become more delinquent following the onset of marijuana use, users are more delinquent prior to use than nonusers, and it is this initial level which predicts the increases in later delinquency. Thus, when prior delinquency level is controlled, the onset of marijuana use is not associated with an increase in delinquency (see Elliott and Ageton, 1976; Jessor, 1979; Jessor and Jessor, 1977, and Johnston, 1973, 1978).

and empirical studies of heroin users have documented increases in income-generating crimes after the onset of addiction, others have observed little or no change in overall delinquency following addiction; Inciardi (1980) suggests that some users simply transfer income they generate through criminal acts from other things to the support of their drug use.

In sum, it would seem that whether the onset of drug use leads to increased delinquency is dependent on the type of drug used, the amount used, and on the population in which the drug user resides. No simple generalizations may be possible.

Although there is general agreement that delinquency usually precedes drug use, many authors conclude that the delinquency-leads-to-drug-use hypothesis is in error. Instead, they argue that the drug/delinquency relationship, at least for marijuana, is spurious and reflects adoption of a general deviant orientation or involvement in a general deviant subculture (Johnston, 1978; Johnson, 1973; Jessor et al., 1973; Jessor, 1976; Kandel, 1978; Goode, 1970, 1972; Scott and Wilcox, 1965; Polonsky et al., 1967; Hindelang and Weis, 1972). While there is general consensus about underlying deviant orientations explaining the observed marijuana/delinquency relationship, available data on explanations of the relationship between delinquent behavior and other illicit drugs is limited and inconclusive. Although the subcultural hypothesis is certainly tenable, firm evidence on causal relations between delinquency and other illicit drugs is not available (see Elliott and Ageton, 1976).

In regard to the three hypotheses concerning the observed relationship between drug use and delinquency, the above illustrates that current research provides few definitive generalized findings. Most commonly, delinquency

precedes drug use of any kind, so that drug use cannot generally be said to initiate delinquent behavior. It would also appear that the relationship between marijuana and delinquency is based on the underlying deviance proneness of the youth involved. Beyond these limited conclusions, however, lack of information or contradictory findings are the rule. Perhaps the conflicting results are correct when applied to particular populations and environmental settings, and the drug use/delinquency relationship is sufficiently complex that it cannot be explained with a few broad generalizations. As Inciardi (1980) notes:

> ...no single explanation can account for the varying relationships between crime and youthful drug abuse that may exist in the numerous populations of drug users that may be active in any given area.... It can be readily concluded that the relationships between drug use and crime tend to vary with the drug using group and the sociocultural context from which they emerge. This perspective would also apply to the youthful drug abuser, whose behavior may not only be influenced by the demands of a career in drugs and a given socio-cultural matrix, but also by the more general pressures indicative of the adolescent life style.

Before this brief overview of previous research is concluded, two factors that influence the reported findings should be noted. First, patterns of drug use and related patterns of delinquent behavior are not static but may change over time. Even in the brief time span of the research reviewed above, changes in the use of marijuana have been dramatic, and the popularity of various "fad" drugs has come and gone. The dynamic character of the social meaning of particular drug use patterns and of the drug use/delinquency interaction render generalizations across time very tenuous. Second, the samples employed in studies of the drug/delinquency relationship are commonly not the most appropriate for this research objective. As

Gandossy et al. (1980) note, samples of the general population are useful for estimating drug use trends, but the low incidence of drug use and criminal behavior in these samples limits their usefulness in examining the drug/crime relationship. Similarly studies based on preselected drug-using or delinquent populations lack the representativeness needed to make general inferences. Qualitative studies also lack the ability to generalize their findings. This lack of sample representativeness, coupled with the differences between the numerous populations of drug users, reinforces the need for caution in making any broad generalizations about the drug use/delinquency relationship.

III. The National Youth Survey

The National Youth Survey was initiated in June 1975 with a five-year grant from the Center for Studies of Crime and Delinquency, National Institute of Mental Health. The focus of this study was upon the epidemiology of delinquent behavior in the American youth population and the test of an integrated theory of delinquency. The NIMH study design called for an initial survey in 1977 with a national sample of youth aged 11-17 in 1976, and two follow-up surveys in 1978 and 1979 with those in the original odd-aged cohorts, i.e., those 11, 13, 15, and 17 in 1976. Prior to the 1978 survey, a second grant was obtained from the National Institute for Juvenile Justice and Delinquency Prevention to study the epidemiology of drug use and the relationship between delinquency and drug use among youth in the original even-aged cohorts (12, 14, and 16). As a result, the 1978 and 1979 annual surveys were jointly funded by NIMH and OJJDP and involved the total original youth panel. A continuation grant from NIMH funded the 1980 and 1981 surveys, again for the entire national youth panel. The overall study, which includes five annual surveys with the entire national youth panel selected for the initial survey in 1977, is referred to as the National Youth Survey.

The National Youth Survey employed a probability sample of households in the continental United States based upon a multistage, cluster sampling design. The sample was drawn in late 1976 and contained approximately 2,375 eligible youth aged 11-17 at the time of the initial interview. Of these, 1,725 (73%) agreed to participate in the study, signed informed consents, and completed interviews in the initial (1977) survey. An age, sex, and race comparison between nonparticipating eligible youth and participating

youth indicates that the loss rate from any particular age, sex, or racial group appears to be proportional to that group's representation in the population. Further, with respect to these characteristics, participating youth appear to be representative of the total 11 through 17 year old youth population in the United States as established by the U.S. Census Bureau.

Respondent loss over the first three surveys was small. The completion rate for the 1978 survey was 96% (N=1,655), and for the 1979 survey was 94% (N=1,626). A comparison of participants and nonparticipants at the second and third waves revealed some selective loss by ethnicity, class, and place of residence. There did not appear to be any selective loss by sex or age, nor does it appear that there was any selective loss relative to self-reported delinquency. The few significant differences found suggest that those lost each year were less delinquent than those who participated. Comparisons of participants across the first three waves indicated that the loss by age, sex, ethnicity, class, place of residence, and reported delinquency did not influence the underlying distributions on these variables in any substantial way. Thus, it appears that the representativeness of the sample with respect to these variables has not been affected in any serious way by the loss over the first three surveys. A full description of the National Youth Survey and documentation of the sample can be found in Elliott et al. (1981).

A. The Measure of Delinquent Behavior

The primary measure of delinquency employed in the National Youth Survey was a self-reported measure. While there is general agreement that self-reported delinquency (SRD) measures are more appropriate and provide a more direct measure of delinquent behavior than are measures based upon official law enforcement records, prior SRD measures have been subject to

serious criticism. A new SRD measure was thus developed for the National Youth Survey, designed specifically to address the major criticisms of prior self-report measures. These problems are discussed below, and a brief description of the adaptations made in the present SRD measure to accommodate each concern is presented.

1. Representative Offenses

A long-standing criticism of self-reported delinquency measures has been the unrepresentativeness of the offense items selected (Hindelang et al., 1975, 1979; Nettler, 1974; Farrington, 1973; Hirschi et al., 1980). Serious violations of the criminal code (e.g., burglary, robbery, and sexual assault) are frequently omitted, while less serious offenses (e.g., cutting classes, disobeying parents) are often overrepresented. The result of such selection processes is that most prior SRD measures have a limited focus and are not representative of the full range of delinquent acts.

In an attempt to address this concern, the full range of delinquent acts reported in the Uniform Crime Reports (UCR) was reviewed. Any specific act which involved more than 1% of the reported juvenile arrests for 1972-1974 (with the exception of traffic violations) was included in this SRD measure. As a result, offenses such as robbery and sexual assault, which are often absent in SRD measures, were included.

In addition to the list of specific offenses, the UCR contains a general category, "all other offenses," which often accounts for a high proportion of the total juvenile arrests. To cover the types of acts likely to fall within this general category and to increase the comprehensiveness of the measure, two general criteria were employed to select additional items. First, offenses which were theoretically relevant to a delinquent lifestyle or

subculture as discussed in the literature (Cohen, 1955; Cloward and Ohlin, 1960; Miller, 1958, 1966; Yablonsky, 1962; Short and Strodtbeck, 1965) were chosen for inclusion in this measure. Thus additional offenses such as gang fighting, sexual intercourse, and carrying a hidden weapon were included. Second, a systematic review of existing SRD measures was undertaken to locate offenses that tapped specific dimensions of delinquent behavior not previously included.

Following this procedure, a set of offenses was generated which is believed to be both more comprehensive and representative of the conceptual universe of delinquent acts than the set of offenses found in prior SRD measures. The offense set includes all but one of the UCR Part I offenses (homicide was excluded), 60% of the Part II offenses, and a wide range of "other offenses" that include delinquent lifestyle and some status offenses. Nearly all items involve a violation of criminal statutes.

2. Response Sets

The type of response sets typically employed with SRD measures has been another source of criticism. One major concern has been the frequent use of normative response categories such as "often," "sometimes," and "occasionally." This type of response set is open to wide variations in interpretation by respondents, and precludes any precise count of the actual number of acts committed.

Other response sets that are used to estimate the number of behaviors (such as "never," "once or twice," and "three times or more") have also been challenged on the grounds that they do not provide precise categories for numerical estimation, and that numerical estimates based upon such categories may severely truncate the true distribution of responses. The use of a

limited set of categorical responses is particularly problematic when the reporting period involves a year or more and when the SRD measure includes high frequency offenses such as using marijuana; drinking beer, wine or liquor; petty theft; and carrying a concealed weapon.

Two separate response sets were used for the new measure. Respondents initially were asked to indicate how many times during the past year they committed each act. If their response to this open-ended question involved a frequency of 10 or more, interviewers then asked them to select one of the following categorical responses which best described their involvement: (1) once a month, (2) once every 2-3 weeks, (3) once a week, (4) 2-3 times a week, (5) once a day, or (6) 2-3 times a day. A comparison of the two response sets indicates a substantial agreement between frequency estimates given in direct response to the open-ended question and frequency estimates based upon the implied frequency associated with the midpoint of the category selected.

To form a complete categorical response set, items that had a frequency response less than 10, and thus no categorical responses, were assigned categorical scores. The combination of assigned and obtained categorical scores produced a nine point categorical response set illustrated in Table 1.

3. Item Overlap

Another problem is the overlapping nature of offenses often included in SRD measures. Several offense items may capture the same behavioral event, or involvement in one offense may logically include involvement in other offenses. For example, some prior SRD measures include a "shoplifting" item, a "theft under $5" item, and a "theft $5-50" item. A single theft event could logically be reported on two of these offense items, resulting in a double counting of offenses. The presence of a "skipping school" item and a "cutting classes" item represents another form of double counting, since cutting school necessarily involves cutting classes.

TABLE 1

THE COMPLETE CATEGORICAL RESPONSE SET

For Frequency Response Less Than 10

Frequency Response	0	1,2,3	4,5,6	7,8,9
Categorical Score	1	2	3	4

For Frequency Response 10 or More

	Once a Month	Once Every 2-3 Weeks	Once a Week	2-3 Times a Week	Once a Day	2-3 Times a Day
Categorical Response	4	5	6	7	8	9

A specific attempt was made to eliminate as much overlap in items as possible in this new SRD measure. None of the items contain a necessary overlap in "skipping school" and "cutting class." Although some possible overlap remains, it does not appear to be a serious problem with this SRD measure, and there is no obvious double counting in any of the estimates presented.

4. Reporting Periods

A fourth problem with SRD measures involves the time frames employed. The use of long recall periods such as "ever" and "over the past three years" raises questions about the accuracy of responses. Time frames which cover shorter periods of time, such as three months or six months, may be better from the standpoint of recall, but may have limited descriptive and theoretical utility. There are also some practical considerations involved in the selection of the reporting period if comparisons are to be made with other estimates of delinquent activity, such as those based upon UCR data and NCP data. Both of these national data sources involve annual estimates. While recall error may be less with shorter time periods, adjustments to an annual base from reporting periods of less than a year have proved problematic (Bachman and O'Malley, 1980).

The SRD measure asks respondents to indicate how many times, "from Christmas a year ago to the Christmas just past," they committed each offense. The recall period is thus a year, anchored by a specific reference point relevant to most youth. The use of a one-year period which coincides almost precisely with the calendar year allows for direct comparison with UCR data, NCP victimization data, and some prior SRD data. It also avoids the need to adjust for seasonal variations, which would be necessary if a shorter time period were involved.

In summary, the present SRD measure attends to many of the central criticisms of prior SRD measures. It is more representative of the full range of delinquent acts than prior SRD measures, involves fewer overlapping items, and employs a response set that provides better discrimination at the high end of the frequency continuum and is more suited to estimating the actual number of behaviors committed. Compared with other SRD measures, the measure involves a moderate recall period, avoids seasonal variations, and permits a direct comparison to other self-report and official measures that are reported annually. A copy of the self-reported delinquency instrument as it appeared in the 1977 interview schedule can be found in Elliott et al. (1981).

B. Delinquency Scales

To provide summary measures representing more general classes of delinquent acts, collections of SRD items are combined into scales, and these scales are scored by summing the frequency or category responses of the individual items contained in the scale. The construction of the scales was guided by the desire to combine items of comparable seriousness and frequency and to group items that were conceptually homogeneous and yet representative of the domain of behaviors implied by the conceptualization. As a result, three types of scales were constructed that vary by level of offense, homogeneity, and seriousness. The first type is called offense-specific scales and involves a very tight, homogeneous grouping of offense items, both with respect to the nature of the acts involved and to their degree of seriousness. The second type, offense-category scales, involves more general classes of behaviors and more internal variability with respect to seriousness. The final set, the summary scales, involves the most general and heterogeneous classification of offenses. The scales used in this report are listed in Table 2.

TABLE 2

Delinquency Scales

OFFENSE-SPECIFIC SCALES

Felony Assault
(1) Aggravated assault
(2) Sexual assault
(3) Gang fights

Minor Assault
(1) Hit teacher
(2) Hit parent
(3) Hit students

Robbery
(1) Strongarmed students
(2) Strongarmed teachers
(3) Strongarmed others

Felony Theft
(1) Stole motor vehicle
(2) Stole something GT$50
(3) Broke into bldg/vehicle
(4) Bought stolen goods

Minor Theft
(1) Stole something LT$5
(2) Stole something $5-50
(3) Joyriding

Damaged Property
(1) Damaged family property
(2) Damaged school property
(3) Damaged other property

OFFENSE-CATEGORY SCALES

Illegal Services
(1) Prostitution
(2) Sold marijuana
(3) Sold hard drugs

Public Disorder
(1) Hitchhiked illegally
(2) Disorderly conduct
(3) Public drunkenness
(4) Panhandled
(5) Obscene calls

Index Offenses
(1) Aggravated assault
(2) Sexual assault
(3) Gang fights
(4) Stole motor vehicle
(5) Stole something GT$50
(6) Broke into bldg/vehicle
(7) Strongarmed students
(8) Strongarmed teachers
(9) Strongarmed others

SUMMARY SCALE

General Delinquency
(1) Stole motor vehicle
(2) Stole something GT$50
(3) Bought stolen goods
(4) Runaway
(5) Carried hidden weapon
(6) Stole something LT$5
(7) Aggravated assault
(8) Prostitution
(9) Sexual intercourse
(10) Gang fights
(11) Sold marijuana
(12) Hit teacher
(13) Hit parent
(14) Hit students
(15) Disorderly conduct
(16) Sold hard drugs
(17) Joyriding
(18) Sexual assault
(19) Strongarmed students
(20) Strongarmed teachers
(21) Strongarmed others
(22) Stole something $5-50
(23) Broke into bldg/vehicle
(24) Panhandled

C. The Measure of Drug Use

Seven self-reported drug use items were included in the 1977 survey. Since drug use was a secondary focus in the initial year of the NYS, these items asked only for the frequency of drug use using the categorical response set illustrated in Table 3.

TABLE 3

CATEGORICAL RESPONSE SET FOR DRUG USE ITEMS

Never	Once or Twice a Year	Once Every 2-3 months	Once a Month	Once Every 2-3 Weeks	Once a Week	2-3 Times a Week	Once a Day	2-3 Times a Day
1	2	3	4	5	6	7	8	9

This response set is similar to the complete categorical score set used for the delinquency items. The drugs examined in the initial survey were alcohol, marijuana, hallucinogens, amphetamines, heroin, cocaine, and barbiturates. These seven drug use items were repeated on each subsequent survey and constitute the basic set of drug use items available across all years of data. Exact item wording and interview format can be found in Elliott et al. (1981).

In November 1977, after the initial survey, an OJJDP grant was awarded to conduct an in-depth study of drug use and its relationship to criminal behavior among those youth in the NYS sample who were not involved in the NIMH follow-up study. This subsample of the national probability sample included those in the 1960, 1962, and 1964 birth cohorts (ages 12, 14, and 16 in 1976). This new study involved a multidrug perspective and was designed to examine a number of dimensions of use across a wide range of drugs. For the

1978 and 1979 surveys, the list of drugs was thus expanded for those in the OJJDP subsample. Of importance for this report, in the 1976 survey, alcohol use was measured by a single item that combined beer, wine, and hard liquor. In the 1978 and 1979 surveys, the OJJDP subsample was asked about beer, wine, and liquor in three separate items, while the rest of the youth in the NYS sample were asked about alcohol use with the original single item. Estimates of alcohol use based on the "single" item are substantially lower than estimates based on the three items combined. As a result, there is no comparable measure of alcohol use for the entire sample in the 1977 and 1978 surveys.

IV. General Approach Used in Examining the Relationship between Drug Use and Delinquency

Because the conceptualization and measurement of drug use and delinquency may have a large influence on the analyses and findings of a study examining the relationship between these two kinds of behaviors, it is important to consider how they are quantified. In this section the measures of drug use and delinquency used in this report are briefly described. This description is preceded by a description of the sample used in the analyses.

A. Sample Used in Analyses

As noted in the previous section, alcohol use was measured in the 1976 survey by a single item that combined beer, wine, and hard liquor. The 1977 and 1978 surveys involved two general subsamples, and different measures of alcohol use were obtained from these two subsamples. One subsample was asked about beer, wine, and hard liquor in three separate items; the other subsample was asked about alcohol use with the original single item. In comparison with the single item subsamples, a substantially larger proportion of the subsample receiving the multiple item measure indicated that they had used alcohol in the preceding year, and this subsample also indicated a higher average frequency of use. As a result, there is no comparable measure of alcohol use for the entire sample in the 1977 and 1978 surveys. Also, the transition from no use to initial use of alcohol or from initial use to increased use cannot be reliably determined for the multiple item subsample from 1976 to 1977. Since a major focus of this report is on the developmental patterns of drug use across the 1976, 1977, 1978 surveys and the relationship of these patterns to delinquency, these alcohol measurement issues preclude the use of the entire NYS sample and restrict the analyses to the subsample having the one

identical alcohol use item across all three years under study. This sample includes youth who were 11, 13, 15, or 17 years old at the time of the 1976 interview.

B. Drug Use Measures

Several measures of illicit drug-using behavior have been used in prior research. These include absolute frequency of or levels of involvement in single drugs, summative indices that combine frequency or involvement scores across different drugs, the total number of drugs used, various typologies based on either empirical or conceptual criteria, and a Guttman scale based on type of drug or categories of drug use (assuming a unidimensionality of drug use).

In this report, a typological approach to the measurement of drug use was taken. The selection of this measure was based on several factors. First, the NYS contains data on several drugs, and the use of a summative index across a combination of drugs obscures potential differences between users of individual drugs. Also, the examination of users of a single drug, without regard to the use of other drugs, may provide misleading results. For example, while users of drug A may show some delinquency, it may be that the only delinquency observed in this group is among those using both drugs A and B. The observation of the correspondence between use of drug A and delinquency, although correct, leads to an inaccurate generalization.

The second reason for using a typological measurement approach is to discover any developmental sequences or patterns of multidrug use. A typological approach is well suited to the discovery of stages or developmental patterns of drug use.

To create a typology of drug users, either empirical or conceptual methods

could be employed. Because the empirical, cluster analysis procedures often group users of different drugs into the same type (see Brennan et al., 1981 for a cluster analysis of drug users in the NYS), a conceptual approach was used to create drug use types. Initially alcohol, marijuana, and other drug use were each broken into three frequency of use categories--no use, experimental use (less than once a month), and regular use (once a month or more). The grouping of all drugs except alcohol and marijuana was necessary because of the small number of youth in the NYS who had used any of these drugs.[4] This classification results in a potential of 27 different types of drug use patterns for any one year and allows for a potential of 19,683 developmental patterns across three years. Although there are a large number of possible patterns, potentially only a few of the patterns could contain most of the youth of the NYS sample. With the exception of the no use and alcohol only use patterns, however, the number of annual (static) and developmental (over time) patterns that contained some youth but that were of insufficient size for analysis purposes was large. This was particularly true for developmental patterns. Although a nonuse, experimental, regular breakdown of drug use may have proven informative, the sample size available for this study precluded its use.

Given that the above frequency of use categories produced too fine a distinction, an alternative categorization of use or nonuse of each drug was

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[4] As noted above, this grouping of other drugs is problematic since differentiating between users of different drugs or between users with different patterns of drug use is thus made impossible. However, such a grouping has often been used in prior research, based on the notion that drugs other than alcohol and marijuana are similar in either their use being less normative or their use considered more serious. There is also some empirical support for considering these drugs as a single set in Brennan et al., 1981.

applied. For this dichotomy, drug use was defined as use four or more times during the year. This cutting point was based on the notion that it is more appropriate to place those using a drug only a few times a year in the nonuse category. The classification of youth by their use of alcohol, marijuana, and other drugs into the use, nonuse categories results in the definition of eight types. A frequency analysis of the number of youth falling in each type in each of the three years of data indicated that four of the types had too few cases in any year for analysis. These types included youth who had used marijuana but neither alcohol nor other drugs, and youth who had used other drugs but who had not also used both alcohol and marijuana. These "rare" types had fewer than 20 cases in any year and most had fewer than five cases. As a result, these types were removed from the analysis. Consequently, 20 youth, 24 youth, and 19 youth were removed from the 1976, 1977, and 1978 data sets, respectively.

The final typology used in the analyses thus contains four types, described as follows:

Type 0 - Three or fewer uses (including no use) of any drug.

Type 1 - Use of alcohol more than three times.

Type 2 - Use of alcohol and marijuana more than three times each.

Type 3 - Use of alcohol, marijuana, and other drugs more than three times each.

Although the types are not intended as a scale, it should be noted that they form a reasonably good Guttman scale, achieving a coefficient of reproducibility of .99 for the entire NYS sample for 1976. To avoid lengthy descriptions and to be consistent with this typology, in the remainder of this report the term drug use will refer to use of a drug four or more times.

B. Delinquency Measures

The delinquency measures used in this study are based on the self-reported delinquency (SRD) scales described earlier. Included is a general SRD scale and several smaller more homogeneous scales. The small scales provide individual measures of Index or UCR Part I offenses, felony assault, robbery, felony theft, minor theft, illegal services (prostitution and selling drugs), damaging property, and public disorder. This range of scales allows the examination of the relationship between drug use and involvement in both serious and minor delinquency. To eliminate potential analysis problems associated with a few unusually high frequency responses, the categorical or rate form of the SRD scores is used throughout this report (see Elliott et al., 1981).

In addition to the self-reported delinquency scales, a measure of involvement in patterned delinquency was used. This measure is a conceptual typology based on the notion that patterned delinquency requires a minimal frequency of involvement and repetition of particular delinquent behaviors over time. Also, the typology allows for the progression from minor to more serious offenses. A description of the types is as follows:

Type 1 - Nondelinquent. This kind of youth has engaged in fewer than five delinquent behaviors (as listed in the general SRD measure) and has engaged in no UCR Part I offenses.

Type 2 - Exploratory. This kind of youth has engaged in more than five delinquent acts, but these behaviors have not been sufficiently frequent, patterned or serious to place him in a patterned or serious group as defined below.

Type 3 - Patterned Nonvictim Offenses. The delinquent behavior of this kind of youth is patterned, in the sense that he has committed at least 12 illegal service offenses or at least 12 public disorder offenses. He has not, however, been frequently involved in more serious offenses.

Type 4 - Patterned Victim Offenses. The delinquent behavior of this kind of youth is patterned in the sense that he has committed at least 12 of one of the following types of offenses: minor assault, minor theft, or property damage. The youth may also have committed other offenses, but they are less serious or of insufficient frequency to place the youth in the following type.

Type 5 - Serious Offender. This kind of youth has engaged in at least three UCR Part I offenses and may have engaged in other delinquent behaviors.

Although the number of offenses used in defining these types is arbitrary, it was selected to imply some repetitive involvement in a small domain of behaviors. Also, because categorical or rate scores are used in this report, the actual number of behaviors is approximated by these categorical responses.

C. Limitations of the Described Research

The research presented in this report is based on a national sample of youth. Because the proportion of youth who have used certain drugs or who display certain drug use patterns is relatively small, sufficient numbers of these youth for analysis purposes are not found in a national probability sample, unless the total sample size is very large or particular sampling techniques are used that oversample youth with these drug use patterns.

Since the NYS sample is not large nor designed to overrepresent drug users, but rather to provide a self-weighting representative sample of youth, uncommon drug use patterns are not often found in the NYS data. As a result, there is an insufficient number of cases to adequately describe rare drug use patterns or the delinquency of youth who have these patterns. As described above, the inability to use the no use, exploratory use, and regular use categorizations, the grouping of all drugs other than alcohol and marijuana, and the removal of certain rare drug use patterns from consideration, all provide examples of the limitations produced by the nature of the NYS sample. Of particular importance is the absence of heroin users as a group, since the bulk of research on the relationship between drug use and crime has focused on heroin users, and it is among these drug users that the strongest relationship between drug use and serious delinquency might be anticipated (see Gandossy et al., 1980).

Although these limitations are apparent, the examination of the relationship between drug use and delinquency in a representative sample is still of utmost importance, since it is only through such a procedure that an understanding of how this relationship is distributed and how it affects a large majority of youth can be achieved.

It should also be noted that because the NYS inteviews ask respondents about their drug use and delinquency during the preceding year, some patterns of change in drug use and delinquency that occur in shorter time intervals will not be detected. As described earlier, however, measurement at shorter intervals is problematic, and for certain behaviors it may be argued that changes occurring in less than a year are insufficiently stable or of adequate duration to warrant consideration.

D. Outline of Analyses Sections

In the following two sections, cross-sectional and longitudinal descriptions of the relationship between drug use and delinquency are provided. The first section contains the results of cross-sectional analyses for each of the 1976, 1977, and 1978 data sets. The following section contains the results of the longitudinal analyses across the three years of data. The analyses provided are largely descriptive in nature, in comparison with more formal tests of causal processes through structural equation models. This approach was chosen because good description precedes model construction and, in this case, the simple descriptions provide a reasonable understanding. Also, the extremely skewed distributions of drug use and delinquency violate assumptions needed for use of the more formal methods, and the effect of these rather strong violations on the methods is unknown.

V. Cross-Sectional Analyses

In this section the relationship between drug use and delinquency is independently examined in each of the 1976, 1977, and 1978 NYS data sets. The drug use measure employed is the drug use typology described earlier. A description of the demographic characteristics of the drug use types is given first, followed by a consideration of the delinquency involvement of these types.

Table 4 provides the demographic characteristics of the four types. This table indicates that as the number of drugs used increases, the age of youth involved in these drug patterns usually increases. For example, there are no youth in the 11 year old age cohort in any of the three years who are type 3 users, i.e. who have used alcohol, marijuana and other drugs. The majority of type 3 users are in the 15 and 17 year old age groups. The sex distribution across the four drug use types indicates (with the exception of alcohol use in the 1976 period) that boys and girls are approximately evenly distributed in the no use and alcohol only use groups, while males are overrepresented in the multiple drug use categories. With respect to ethnic differences, Anglos are somewhat overrepresented in all drug use groups, especially in the group using alcohol, marijuana, and other drugs. There appear to be few social class differences between the drug use types, with the exception that the multiple use of all drugs (type 3) consists disproportionately of class 2 (or working class) youth[5].

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[5] The social class measure is based on Hollingshead's two factor index of social position, collapsing categories 1 and 2 and collapsing categories 4 and 5 to produce a three-category scale.

TABLE 4

DEMOGRAPHIC CHARACTERISTICS OF DRUG USE TYPES ACROSS THREE WAVES OF DATA

DRUG USE TYPE*		AGE AT FIRST INTERVIEW				SEX		ETHNICITY			SOCIAL CLASS**			
		11	13	15	17	M	F	Anglo	Black	Other	1	2	3	Total
1976														
0	Percent	29.7	35.5	23.0	11.8	48.7	51.3	76.3	16.9	6.8	23.4	32.0	44.6	75.0
	N	214	256	166	85	351	370	550	122	49	159	217	303	721
1	Percent	4.3	15.0	37.1	43.6	61.4	38.6	90.0	7.1	2.9	23.1	34.3	42.6	14.6
	N	6	21	52	61	86	54	126	10	4	31	46	57	140
2	Percent	0.0	7.5	40.0	52.5	63.8	36.2	82.5	16.3	1.2	31.1	33.8	35.1	8.3
	N	0	6	32	42	51	29	66	13	1	23	25	26	80
3	Percent	0.0	0.0	30.0	70.0	55.0	45.0	100.0	0.0	0.0	21.1	52.6	26.3	2.1
	N	0	0	6	14	11	9	20	0	0	4	10	5	20
1977														
0	Percent	33.7	36.3	19.6	10.3	49.2	50.8	74.9	18.1	7.1	23.0	31.5	45.5	63.1
	N	196	211	114	60	286	295	435	105	41	127	174	251	581
1	Percent	5.7	20.3	38.1	35.9	51.6	48.4	86.5	10.4	3.1	27.6	31.9	40.5	20.8
	N	11	39	73	69	99	93	166	20	6	51	59	75	192
2	Percent	1.7	15.8	40.0	42.5	60.8	39.2	88.3	7.5	4.2	34.9	31.1	34.0	13.0
	N	2	19	48	51	73	47	106	9	5	37	33	36	120
3	Percent	0.0	10.7	42.9	46.4	67.9	32.1	26	2	0.0	14.3	53.6	32.1	3.0
	N	0	3	12	13	19	9	92.9	7.1	0	4	15	9	28
1978														
0	Percent	38.9	33.3	18.2	9.5	48.4	51.6	74.3	18.8	6.9	23.7	30.7	45.6	53.0
	N	188	161	88	46	234	249	359	91	33	108	140	208	483
1	Percent	6.8	28.1	33.0	32.1	47.5	52.5	89.1	7.2	3.6	30.3	31.3	38.4	24.2
	N	15	62	73	71	105	116	197	16	8	64	66	81	221
2	Percent	2.4	18.9	40.2	38.5	61.6	38.4	84.1	13.4	2.4	23.5	33.3	43.1	18.0
	N	4	31	66	63	101	63	138	22	4	36	51	66	164
3	Percent	0.0	18.2	38.6	43.2	75.0	25.0	95.5	2.3	2.3	22.7	50.0	27.3	4.8
	N	0	8	17	19	33	11	42	1	1	10	22	12	44
Total Sample	Percent	22.9	29.4	26.6	21.0	51.9	48.1	79.3	15.1	5.6	24.0	32.9	43.1	100.0
	N	220	283	256	202	499	462	762	145	54	217	298	391	961

* Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = both alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

** Available for 94% of the sample. Class 1 = middle class, class 2 = working class, class 3 = lower class.

Table 4 also provides the size of each of the four drug use groups across all three years. The nonuse group is clearly much larger than any use group. Although decreasing across the three waves, the nonuse group contains more than half the youth included in the sample for all three years of data. The other drug use groups show an increase in size across the three years of data, although the group using alcohol, marijuana, and other drugs remains small, reaching a maximum size of only 44 in the 1978 data set.

Tables 5, 6, and 7 give the mean, standard deviation, and percentage of cases having at least one offense for the general self-reported delinquency (SRD) scale and for a variety of SRD subscales. Also included in these tables are the results of unequal variance t-tests of the difference between the SRD scale means of the drug use types. This multiple t-test approach, instead of analysis of variance techniques, was necessary because of the heteroscedasticity and unequal sample sizes of the drug use groups. As noted earlier, the SRD measures are based on a categorical or rate response set to SRD items where a response of 1 means never. As a result, it should be observed that if an SRD scale contains N items, then a youth with a score of N on that scale has engaged in none of the delinquent behaviors included in that scale. The column titled "percent greater than 0" indicates the percentage of youth reporting one or more offenses.

Examination of tables 5, 6, and 7 reveals that the rank ordering of the means and percentage of youth reporting involvement in at least one delinquent behavior is identical across all SRD scales and all three years of data, with only one exception (the percentage for the general SRD scale in 1976). This rank ordering shows an increasing involvement in delinquent behavior across the no use, the alcohol use only, the alcohol and marijuana use, and the

TABLE 5

SELF-REPORTED DELINQUENCY BY DRUG USE TYPE: 1976*

SRD Scale	Drug Use Type	Mean	S.D.	Percent Greater Than 0	Unequal Variance t-Test Between Drug Use Types			
						1	2	3
General SRD	0	25.83	3.00	57.0	0	6.63**	6.83**	4.81**
	1	28.79	5.07	89.9	1		3.08**	3.91**
# of	2	31.75	7.69	88.8	2			2.98**
items 24	3	42.20	15.21	100.0	3			
						1	2	3
Index Offenses	0	9.26	0.80	15.5	0	2.91**	3.97**	3.30**
	1	9.60	1.35	27.1	1		1.91	2.84**
# of	2	10.03	1.71	43.7	2			2.28
items 9	3	11.90	3.58	65.0	3			
						1	2	3
Felony Assault	0	3.16	0.48	13.0	0	2.64**	+3.88**	3.51**
	1	3.36	0.86	20.7	1		1.50	2.36
# of	2	3.53	0.86	35.0	2			1.43
items 3	3	3.85	0.86	60.0	3			
						1	2	3
Minor Assault	0	3.80	1.33	45.1	0	2.92**	+3.40**	2.54
	1	4.42	2.43	58.6	1		0.72	1.55
# of	2	4.65	2.18	62.5	2			1.20
items 3	3	5.50	3.00	70.0	3			
						1	2	3
Robbery	0	3.06	0.37	3.8	0	0.21	+1.19	2.07
	1	3.15	0.82	5.7	1		0.11	1.71
# of	2	3.16	0.75	7.5	2			1.65
items 3	3	3.65	1.27	30.0	3			
						1	2	3
Felony Theft	0	4.09	0.42	7.1	0	2.82**	4.27**	3.11**
	1	4.29	0.80	18.6	1		2.58**	2.88**
# of	2	4.69	1.23	33.8	2			2.41
items 4	3	6.85	3.96	75.0	3			

* Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

** Indicates significance at the .01 level.

TABLE 5 CONTINUED

SRD Scale	Drug Use Type	Mean	S.D.	Percent Greater Than 0	Unequal Variance t-Test Between Drug Use Types	1	2	3
Minor Theft	0	3.19	0.64	12.3	0	4.89**	5.62**	3.45**
	1	3.69	1.19	39.3	1		2.06	2.77
# of	2	4.08	1.40	51.3	2			2.25
items 3	3	5.85	3.45	65.0	3			
Illegal Services	0	3.01	0.08	0.7		1	2	3
	1	3.03	0.27	1.4	0	0.95	4.67**	3.02**
# of	2	3.44	0.82	28.8	1		4.31**	3.00**
items 3	3	6.45	5.10	70.0	2			2.63
					3			
Damaged Property	0	3.53	1.07	29.4		1	2	3
	1	3.96	1.60	45.0	0	3.02**	3.88**	2.66**
# of	2	4.44	2.06	60.0	1		1.80	1.94
items 3	3	5.20	2.80	50.0	2			1.14
					3			
Public Disorder	0	5.54	1.22	17.6		1	2	3
	1	7.10	2.40	77.1	0	7.49**	8.54**	4.25**
# of	2	8.85	3.42	92.4	1		4.02**	2.98**
items 5	3	10.90	5.63	85.0	2			1.56
					3			

* Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

** Indicates significance at the .01 level.

TABLE 6

SELF-REPORTED DELINQUENCY BY DRUG USE TYPE: 1977*

SRD Scale	Drug Use Type	Mean	S.D.	Percent Greater Than 0	Unequal Variance t-Test Between Drug Use Types	1	2	3
General SRD	0	25.64	2.93	53.2	0	5.80**	7.47**	4.04**
	1	27.44	3.93	73.5	1		4.68**	3.48**
# of	2	31.03	7.66	86.2	2			2.34
items 24	3	38.88	3.28	91.7	3			
Index Offenses	0	9.16	0.65	10.3		1	2	3
	1	9.36	0.98	18.7	0	2.60**	3.42**	3.31**
# of	2	9.63	1.46	29.1	1		1.79	3.04**
items 9	3	11.73	3.96	65.4	2			2.66
					3			
Felony Assault	0	3.11	0.47	8.5		1	2	3
	1	3.18	0.51	13.0	0	1.55	3.07**	3.12**
# of	2	3.32	0.70	20.8	1		1.90	2.92**
items 3	3	4.18	1.81	57.1	2			2.48
					3			
Minor Assault	0	3.65	1.17	38.5		1	2	3
	1	3.92	1.37	47.4	0	2.46**	3.19**	3.77**
# of	2	4.26	2.03	46.6	1		1.64	2.79**
items 3	3	4.81	1.55	80.8	2			1.53
					3			
Robbery	0	3.03	0.21	1.9		1	2	3
	1	3.06	0.38	3.6	0	1.22	1.71	1.32
# of	2	3.15	0.80	5.1	1		1.17	1.02
items 3	3	3.19	0.63	11.5	2			0.27
					3			
Felony Theft	0	4.06	0.35	4.3		1	2	3
	1	4.26	0.89	15.1	0	2.98**	3.84**	2.90**
# of	2	4.42	1.01	21.7	1		1.44	2.61
items 4	3	6.07	3.67	64.3	2			2.36
					3			

* Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana, and other drug use.

** Indicates significance at the .01 level.

TABLE 6 CONTINUED

SRD Scale	Drug Use Type	Mean	S.D.	Percent Greater Than 0	Unequal Variance t-Test Between Drug Use Types	1	2	3
Minor Theft	0	3.14	0.48	9.8	0	3.85**	5.79**	3.34**
	1	3.40	0.90	27.1	1		3.63**	2.91**
# of items 3	2	3.97	1.55	44.2	2			1.98
	3	5.25	3.34	57.1	3			
Illegal Services	0	3.02	0.20	1.2	0	1.00	5.50**	4.21**
	1	3.04	0.21	3.1	1		5.31**	4.18**
# of items 3	2	3.63	1.20	31.7	2			3.15**
	3	5.56	3.13	63.0	3			
Damaged Property	0	3.39	0.93	23.4	0	2.47	3.78**	3.70**
	1	3.67	1.47	29.8	1		2.43	2.88**
# of items 3	2	4.30	2.59	45.4	2			1.15
	3	4.82	2.04	60.7	3			
Public Disorder	0	5.50	1.24	25.5	0	7.41**	9.88**	5.69**
	1	6.80	2.32	62.5	1		5.10**	4.01**
# of items 5	2	8.59	3.40	84.2	2			1.75
	3	10.11	4.27	92.9	3			

* Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

** Indicates significance at the .01 level.

TABLE 7

SELF-REPORTED DELINQUENCY BY DRUG USE TYPE: 1978*

SRD Scale	Drug Use Type	Mean	S.D.	Percent Greater Than 0	Unequal Variance t-Test Between Drug Use Types	1	2	3
General SRD	0	25.31	2.45	45.7	0	6.79**	10.46**	6.14**
	1	27.10	3.56	75.0	1		6.10**	5.31**
# of items 24	2	30.29	5.86	89.4	2			3.84**
	3	39.07	14.86	97.7	3			
Index Offenses	0	9.12	0.56	8.1	0	1.71	3.34**	3.24**
	1	9.22	0.73	12.7	1		2.10	3.08**
# of items 9	2	9.43	1.13	22.5	2			2.71**
	3	11.09	4.02	52.3	3			
Felony Assault	0	3.06	0.28	5.6	0	1.74	3.38**	3.25**
	1	3.12	0.46	8.6	1		1.81	3.01**
# of items 3	2	3.22	0.57	15.9	2			2.60
	3	3.88	1.67	36.4	3			
Minor Assault	0	3.46	0.91	30.8	0	2.88**	3.31**	3.00**
	1	3.75	1.36	36.7	1		0.57	2.22
# of items 3	2	3.83	1.32	41.5	2			2.01
	3	4.64	2.58	47.7	3			
Robbery	0	3.04	0.26	3.1	0	0.61	1.45	3.86**
	1	3.06	0.45	3.2	1		0.93	1.51
# of items 3	2	3.12	0.62	6.7	2			1.24
	3	3.39	1.40	11.4	3			
Felony Theft	0	4.05	0.31	3.9	0	1.2	4.26**	3.86**
	1	4.08	0.34	6.8	1		3.63**	3.78**
# of items 4	2	4.33	0.81	20.1	2			3.22**
	3	5.80	2.99	52.3	3			

* Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

** Indicates significance at the .01 level.

TABLE 7 CONTINUED

SRD Scale	Drug Use Type	Mean	S.D.	Percent Greater Than 0	Unequal Variance t-Test Between Drug Use Types			
Minor Theft	0	3.10	0.41	7.7	0	2.68**	5.25**	3.29**
	1	3.25	0.71	15.0	1		3.78**	2.99**
# of items 3	2	3.71	1.46	29.9	2			2.01
	3	4.73	3.26	47.7	3			
Illegal Services	0	3.01	0.15	0.6	0	1.30	6.55**	6.53**
	1	3.03	0.22	2.3	1		6.25**	6.47**
# of items 3	2	3.61	1.17	29.4	2			4.78**
	3	5.45	2.48	75.0	3			
Damaged Property	0	3.34	0.85	21.3	0	2.00	3.09**	3.56**
	1	3.52	1.17	25.3	1		1.19	2.99**
# of items 3	2	3.67	1.26	32.3	2			2.52
	3	4.57	2.27	54.5	3			
Public Disorder	0	5.42	1.11	24.1	0	7.71**	9.95**	7.55**
	1	6.81	2.56	57.0	1		4.06**	5.40**
# of items 5	2	8.07	3.35	77.4	2			3.49**
	3	10.66	4.59	91.9	3			

* Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

** Indicates significance at the .01 level.

alcohol, marijuana, and other drug use groups. Thus, there appears to be an increasing involvement in delinquent behavior with increasing involvement in drug use. In addition to the rank ordering, the difference between the SRD scale means among the drug use groups is also often statistically significant, at the .01 level, although because of differences in variance and sample sizes even large differences are not always significant.

It is interesting to note that the type 4, multidrug use type, consistently has a much larger percentage of its members engaged in all kinds of delinquent activities. Although this group is relatively small, the consistency of this finding across most SRD scales and across all three years of data suggests its stability. This group is also the only group that has a majority of its members engaging in felony assaults and felony thefts, and that shows a relatively larger proportion of its members engaging in robbery.

The illegal services scale, which for this sample is based mainly on the income-producing activity of selling drugs, indicates that drug use types 2 and 3 have a relatively high percentage of their members engaging in these behaviors, with type 3 having double the percentage of type 2. In comparison with the no drug use and alcohol only use groups, which have very few illegal service behaviors, the marijuana and other drug use types are heavily involved in these activities, accounting for approximately 80% of the youth engaged in illegal service behaviors.

Because the rank orderings of the drug use groups by SRD means and proportion of youth involved are so consistent, further description of differences between types on each scale is not provided here. The interested reader should examine the tables to observe the magnitudes of the ordered differences.

Although there are clear group differences between the delinquency involvement of the drug use types, it is important to note that, with the exception of the type 3 multiple drug use type, more than half the youth in each drug use type report that they have never engaged in the delinquent activities listed in most of the SRD scales. Although this is not true for a few minor scales, such as public disorder (being loud or rowdy), it holds for all of the more serious offense scales and most of the minor scales. As a result, group central tendency measures of delinquency do not provide an accurate characterization of the majority of youth belonging to each of the drug types 0, 1, and 2. Perhaps a more appropriate generalization of the differences between these drug use types is that the proportion of youth engaging in delinquent activities increases as a progression is made from no use to alcohol use to alcohol and marijuana use, but the proportion in any of these groups is relatively small.

Before leaving the description of the cross-sectional analyses, it is necessary to examine whether the findings simply reflect differences in the demographic characteristics of the drug use types. Because the demographic characteristics, especially age and sex, are not evenly distributed across the drug types, conceivably the differences between types may only reflect SRD scale differences between demographic characteristics. For example, the type 3 multiple drug use group is older and predominantly male. As a result, since increased delinquency is often associated with these variables, the higher SRD scores for this group may be associated only with age and/or sex and not with drug use. To examine this possibility, an analysis of partial variance using a linear model approach was employed. In all cases, the addition of the drug

use types, after the removal of variation due to the demographic variables and their interaction, produced a significant (beyond the .001 level) increase in the prediction of the SRD scales[6]. Thus, the differences in SRD scale scores between the drug use types are type dependent and are not simply a result of age, sex, class, or ethnic differentials.

An examination of mean differences and of the proportion of youth committing SRD offenses between age by sex and class by ethnicity groups confirms the above finding of the relationship between drug use types and delinquency across various demographic groups. Tables containing the means and percentages of the various age by sex groups for which significant interactions were found are contained in Appendix A.

Given the relationships between drug use types and various SRD scales observed above, it is not surprising that a similar relationsip is observed between the drug use types and the patterned delinquency typology. The patterned delinquency typology, however, carries with it evidence of sustained involvement in particular delinquent behaviors, a factor that could only be loosely inferred from the analysis of the SRD scales. Table 8 presents a crosstabulation of the drug use types and the patterned delinquent types. The

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[6] Because of the heteroscedasicity of the SRD scale scores between drug use and different demographic groups, and hence presumably of the residuals of these groups, the assumptions needed for use of the linear model are violated. For the data considered, there is a consistent match of large variances with small groups, resulting in inflated calculated F values. The addition of the drug use types to the linear model, however, commonly increased R^2 by .20 or more and resulted in F values of several hundred. Thus, while exact probability statements are unknown, the size of the effect is clearly indicated. Also, certain of the age by sex by drug use interactions were significant, a fact that would make use of this procedure inappropriate. However, the effect of these interactions was relatively small and their significance stems, in part, from the relatively large sample size. As a result they were ignored in these analyses.

TABLE 8

CROSSTABULATION OF DRUG USE TYPES BY PATTERNED DELINQUENCY TYPES FOR 1976, 1977, and 1978

1976

Drug Use Type***	Patterned Delinquency Type** 1	2	3	4	5	Row Total
0	540 75.9 87.5 57.0	62 8.7 66.7 6.5	12 1.7 22.2 1.3	65 9.1 63.1 6.9	32 4.5 39.5 3.4	711 75.0
1	56 40.6 9.1 5.9	18 13.0 19.4 1.9	24 17.4 44.4 2.5	21 15.2 20.4 2.2	19 13.8 23.5 2.0	138 14.6
2	18 22.8 2.9 1.9	11 13.9 11.8 1.2	16 20.3 29.6 1.7	14 17.7 13.6 1.5	20 25.3 24.7 2.1	79 8.3
3	3 15.0 .5 .3	2 10.0 2.2 .2	2 10.0 3.7 .2	3 15.0 2.9 .3	10 50.0 12.3 1.1	20 2.1
Column Total	617 65.1	93 9.8	54 5.7	103 10.9	81 8.5	948 100.0

* Cell entries are count, row %, column %, and total %, in that order.
** Type 1 = nondelinquent; type 2 = exploratory; type 3 = patterned nonvictim offenses; type 4 = patterned victims offenses; type 5 = serious offenders.
*** Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

TABLE 8 CONTINUED

1977

Drug Use Type***	Patterned Delinquency Type** 1	2	3	4	5	Row Total
0	445 77.8 79.6 49.4	54 9.4 47.0 6.0	21 3.7 26.6 2.3	36 6.3 38.3 4.0	16 2.8 30.2 1.8	572 63.6
1	90 47.9 16.1 10.0	31 16.5 27.0 3.4	26 13.8 32.9 2.9	28 14.9 29.8 3.1	13 6.9 24.5 1.4	188 20.9
2	20 17.2 3.6 2.2	25 21.6 21.7 2.8	31 26.7 39.2 3.4	25 21.6 26.6 2.8	15 12.9 28.3 1.7	116 12.9
3	4 16.7 .7 .4	5 20.8 4.3 .6	1 4.2 1.3 .1	5 20.8 5.3 .6	9 37.5 17.0 1.0	24 2.7
Column Total	559 62.1	115 12.8	79 8.8	94 10.4	53 5.9	900 100.0

* Cell entries are count, row %, column %, and total %, in that order.
** Type 1 = nondelinquent; type 2 = exploratory; type 3 = patterned nonvictim offenses; type 4 = patterned victims offenses; type 5 = serious offenders.
*** Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

TABLE 8 CONTINUED

		1978 Patterned Delinquency Type** 1	2	3	4	5	Row Total
Drug Use Type***	0	391 82.1 72.8 43.4	42 8.8 34.4 4.7	10 2.1 8.6 1.1	23 4.8 30.3 2.6	10 2.1 20.4 1.1	476 52.9
	1	107 48.6 19.9 11.9	34 15.5 27.9 3.8	39 17.7 33.6 4.3	30 13.6 39.5 3.3	10 4.5 20.4 1.1	220 24.4
	2	35 21.9 6.5 3.9	40 25.0 32.8 4.4	50 31.3 43.1 5.6	18 11.2 23.7 2.0	17 10.6 34.7 1.9	160 17.8
	3	4 9.1 .7 .4	6 13.6 4.9 .7	17 38.6 14.7 1.9	5 11.4 6.6 .6	12 27.3 24.5 1.3	44 4.9
Column Total		537 59.7	122 13.6	116 12.9	76 8.4	49 5.4	900 100.0

* Cell entries are count, row %, column %, and total %, in that order.
** Type 1 = nondelinquent; type 2 = exploratory; type 3 = patterned nonvictim offenses; type 4 = patterned victims offenses; type 5 = serious offenders.
*** Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

definitions of the delinquent types are type 1 = nondelinquent; type 2 = exploratory; type 3 = patterned nonvictim offenses; type 4 = patterned victim offenses; and type 5 = serious offender. Examination of Table 8 indicates that more than 75% of the nondrug user group are in the nondelinquent type in all three years, while less than 14% have a sustained involvement in crimes against persons or property (delinquency types 4 and 5). Contrasting drug use types 1, 2, and 3, it can be seen that as drug use increases, the proportion of each drug type belonging to the nondelinquent type decreases, while inclusion in the more delinquent types 4 and 5 increases. Thus, the proportion of youth engaged in a sustained involvement in more serious kinds of delinquent behaviors increases with the progression from no use, to alcohol use, to alcohol and marijuana use, to alcohol, marijuana, and other drug use.

In this section, a relationship between increasing levels of drug use and increasing levels of delinquency has been observed. It must be emphasized, however, that this relationship has been observed in cross-sectional data and only for certain subgroups of drug users, and that no causal relationship is implied. Drug use might lead to delinquency or delinquency to drug use. Alternatively, the relationship may be spurious, based solely on other underlying factors, or have no instrumental relationship at all. In the next section, an examination of patterns of drug use and delinquency over time is presented. It is here that evidence of causation is more appropriately examined, although not even these analyses will meet the rather intractable problems of demonstrating causality.

VI. Longitudinal Analyses

In this section, the through-time changes in patterns of drug use and the relationship of these changes to changes in delinquent behavior are examined. Employing the drug use types described earlier, developmental patterns of drug use can be determined by identifying groups of youth that have an identical sequence of type to type transitions across time. For example, one group of youth might indicate no drug use in all three years of data; another group may have no drug use year 1, use alcohol year 2, and use both alcohol and marijuana year 3. Since the earlier drug use typology allowed for four types in any one year, there are 64 possible longitudinal drug use sequences. It would be anticipated, however, that many of these movement patterns would involve no, or very few, youth.

A count of the number of youth in each longitudinal drug use pattern reveals that only 44 patterns actually exist, and that of these only 14 patterns contain nine or more youth. These 14 (0 through 13) are described in Table 9 and account for 92% of the 863 youth with data that allows placement in one of the possible longitudinal patterns. As Table 9 indicates, nearly half the longitudinally classified youth have essentially no involvement in drug use in all three years of data. Types 1 through 5 involve only alcohol use and account for approximately 25% of the classified youth, while types 6 through 10 involve both alcohol and marijuana use during at least one year and account for approximately 14% of the youth. Only 27 youth involved in the use of other drugs are included in types with sufficient size to be included in the analyses. The remaining 72 youth are spread across 30 nonlisted longitudinal patterns, most of which include only one or two youth. Because of their small size, these latter patterns are excluded from further analyses.

TABLE 9

LONGITUDINAL DRUG USE TYPES

LONGITUDINAL DRUG USE TYPE	CROSS-SECTIONAL DRUG USE PATTERN*			NUMBER OF YOUTH
	1976	1977	1978	
0	0	0	0	426
1	1	0	0	11
2	0	1	0	20
3	0	0	1	70
4	0	1	1	67
5	1	1	1	45
6	0	0	2	20
7	0	1	2	16
8	1	1	2	19
9	1	2	2	28
10	2	2	2	42
11	2	2	3	9
12	2	3	3	9
13	3	3	3	9
Other Longitudinal Patterns	--	--	--	72

* Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

Table 10 provides the demographic characteristics of the longitudinal types. As with the cross-sectional types, those longitudinal types that show an increasing involvement in drug use, either in number of drugs or initiation into drug use, tend to be older and disproportionately male. Although the sizes of the longitudinal types makes generalizations somewhat tentative, it appears that those who become users of drugs other than alcohol and marijuana are predominantly Anglo, and that Anglos are also somewhat overrepresented in most types that use both alcohol and marijuana. Although there are disproportional differences in social class between longitudinal types, there are no consistent differences across similar drug involvement or initiation patterns. Generalizations about social class and longitudinal drug use patterns are thus difficult to make.

Table 10 also gives an indication of the developmental sequence of drug use patterns. Although not descriptive of all youth (because rare cross-sectional and longitudinal patterns have been excluded) the developmental sequences of the vast majority of youth across the three years of data can be examined. It should first be noted that the most common pattern for all age, sex, ethnic, and class groups is to have no significant drug involvement across all three years. While in comparison with other longitudinal types, this longitudinal pattern of no use contains a greater proporton of younger youth, it also contains the largest proportion of each demographic group. Among the alcohol use groups, longitudinal types 1 and 2 show a use or experimentation with alcohol in one year followed by non-use of any drugs in the following year or years. Types 3, 4, and 5 show an initiation and/or continuation of alcohol use. With the exception of type 6, all longitudinal types that initiate marijuana use indicate that they used alcohol in the year

TABLE 10

DEMOGRAPHIC CHARACTERISTICS OF THE LONGITUDINAL DRUG USE TYPES

LONGITUDINAL DRUG USE TYPES	DRUG USE PATTERN		AGE AT FIRST INTERVIEW 11	13	15	17	SEX M	F	ETHNICITY Anglo	Black	Other	SOCIAL CLASS 1	2	3	Total
0	0 0 0	N	178	142	72	34	200	226	313	81	32	96	126	181	426
		%	41.8	33.3	16.9	8.0	46.9	53.1	73.5	19.0	7.5	23.8	31.3	44.9	54.8
1	1 0 0	N	1	5	3	2	7	4	10	0	1	2	3	6	11
		%	9.1	45.5	27.3	18.2	63.6	36.6	90.9	0.0	9.1	18.2	27.3	54.5	1.4
2	0 1 0	N	4	8	5	3	11	9	16	4	0	6	4	9	20
		%	20.0	40.0	35.0	15.0	55.0	45.0	80.0	20.0	0.0	31.6	21.1	47.4	2.6
3	0 0 1	N	6	37	18	9	35	35	60	6	4	16	23	29	70
		%	8.6	52.9	25.7	12.8	50.0	50.0	85.7	8.6	5.7	23.5	33.8	42.6	9.0
4	0 1 1	N	3	17	27	20	29	38	57	7	3	22	23	19	67
		%	4.5	25.4	40.3	29.9	43.3	56.7	85.1	10.4	4.5	34.4	35.9	29.7	8.6
5	1 1 1	N	3	2	14	26	24	21	42	2	1	12	12	19	45
		%	6.7	4.4	31.1	57.8	53.3	46.7	93.3	4.4	2.2	27.9	27.9	44.2	5.8
6	0 0 2	N	3	8	5	4	13	7	17	3	0	4	7	9	20
		%	15.0	40.0	25.0	20.0	65.0	35.0	85.0	15.0	0.0	20.0	35.0	45.0	2.6
7	0 1 2	N	1	5	5	5	7	9	14	1	1	2	6	8	16
		%	6.3	31.3	31.3	31.3	43.8	56.3	87.5	6.3	6.3	12.5	37.5	50.0	2.1
8	1 1 2	N	0	2	9	8	13	6	18	1	0	6	8	5	19
		%	0.0	10.5	47.4	42.1	68.4	31.6	94.7	5.3	0.0	31.6	42.1	26.3	2.4
9	1 2 2	N	0	4	14	10	20	8	25	2	1	6	8	12	28
		%	0.0	14.3	50.0	35.7	71.4	28.6	89.3	7.1	3.6	23.1	30.8	46.2	3.6
10	2 2 2	N	0	1	10	17	18	10	23	4	1	10	8	8	28
		%	0.0	3.6	38.7	60.8	64.3	35.7	82.1	14.3	3.6	38.5	30.8	30.8	3.6
11	2 2 3	N	0	1	3	5	7	2	9	0	0	4	3	2	9
		%	0.0	11.1	33.3	55.6	77.8	22.2	100.0	0.0	0.0	44.4	33.3	22.2	1.2
12	2 3 3	N	0	0	5	4	7	2	8	1	0	2	6	1	9
		%	0.0	0.0	55.6	44.4	77.8	22.2	88.9	11.1	0.0	22.2	66.7	11.1	1.2
13	3 3 3	N	0	0	4	5	7	2	9	0	0	1	5	3	9
		%	0.0	0.0	44.4	55.6	77.8	22.2	100.0	0.0	0.0	11.1	55.6	33.3	1.2
Total			199	232	194	152	398	379	621	112	44	189	242	311	777
			25.6	29.9	25.0	19.6	51.2	48.8	79.9	14.4	5.6	25.5	32.6	41.9	100.0

preceding marijuana use, and type 10 indicates a continual use of both alcohol and marijuana across the three years. Similarly, all types that involve initiation into use of other drugs have used both marijuana and alcohol in the year preceding use of other drugs, while type 13 indicates a continual use of alcohol, marijuana, and other drugs[7].

Although the drug use patterns across only three years, with some containing relatively few youth, are insufficient to draw absolute conclusions, they do suggest the following developmental sequence that would be applicable to the majority of youth. Defining drug use to be use of a drug four or more times, slightly more than half of the youth report no significant drug involvement during this period. As the remaining youth become older, most begin to use alcohol and, although some discontinue use, most alcohol users continue to use alcohol after the point of initial use. Of those using alcohol, some will begin to use marijuana and continue using both alcohol and marijuana. Among alcohol and marijuana users, some youth will begin to use other drugs and this use is continued across time. It thus appears that a progression of no use to alcohol use, alcohol use to alcohol and marijuana use, and alcohol and marijuana use to use of other drugs, with many youth remaining at each step of the progression, is descriptive of drug use stages that are common to a majority of youth. This progression is similar to the developmental stages of drug use described by Kandel (1978) and Jessor (1979). While this progression is most likely an oversimplification, resulting in part from the definitions of the cross-sectional types which do not take into account the volume of use of particular drugs nor use of only single drugs other than alcohol, these major longitudinal types contain

7 Similar findings based upon cluster analysis methods are reported by Brennan et al. (1981).

85% of all youth participating in the three years under study. Thus, within the limits of the cross-sectional typology, the vast majority of youth can be accurately placed in this longitudinal progression. It should be carefully noted, however, that this progression is simply descriptive and applies only to recent drug use patterns. It provides no evidence for the "stepping stone" theory that use of one drug necessarily leads to or causes use of another drug. The use of alcohol is associated with a higher probability of subsequent marijuana use, and the use of alcohol and marijuana is associated with a higher probability of using additional drugs. However, this is insufficient evidence for a causal relationship. Further, the probabilities of progression are not very high. The most common pattern among drug users is one of sustained use or maintenance (57%), followed by a pattern of escalation to the next drug in the sequence (31%), and finally by de-escalation or termination (12%). Escalation is twice as likely as de-escalation or termination, but the most common pattern over time is a sustained use of the current drug or drugs.

Means of the total SRD scale and of various SRD subscales for each longitudinal drug type across all three years of data are provided in Tables 11 through 20. These tables also provide the percentage of youth engaging in one or more of the delinquent acts summarized by these scales. Although differences in SRD between types result in part from differences in demographic characteristics, especially age and sex, comparison across the three years of data within types are based on the same set of youth and are not affected by these differentials. It is these latter comparisons that are discussed in the remainder of this section.

TABLE 11

MEANS AND PERCENTAGES OF YOUTH ENGAGING IN DELINQUENT BEHAVIOR FOR GENERAL SRD MEASURE

Type	LONGITUDINAL DRUG USE Pattern 1976	1977	1978	N		1976	1977	1978
0	0	0	0	426	Mean	25.31	25.24	25.17
					% GT 0	51.2	47.4	44.2
1	1	0	0	11	Mean	29.2	26.36	25.27
					% GT 0	100.0	62.7	36.4
2	0	1	0	20	Mean	25.75	25.65	26.05
					% GT 0	60.0	50.0	47.4
3	0	0	1	70	Mean	26.33	26.30	26.90
					% GT 0	62.9	62.9	72.9
4	0	1	1	67	Mean	26.07	27.11	27.25
					% GT 0	65.7	72.7	77.6
5	1	1	1	45	Mean	27.80	27.58	26.60
					% GT 0	86.4	77.8	71.1
6	0	0	2	20	Mean	26.60	26.45	28.74
					% GT 0	65.0	85.0	78.9
7	0	1	2	16	Mean	27.56	27.75	31.18
					% GT 0	50.0	70.0	93.7
8	1	1	2	19	Mean	30.58	29.24	31.00
					% GT 0	94.7	88.2	94.7
9	1	2	2	28	Mean	29.07	32.14	31.19
					% GT 0	96.4	96.4	96.2
10	2	2	2	28	Mean	30.29	30.17	30.00
					% GT 0	85.7	85.7	92.6
11	2	2	3	9	Mean	35.67	34.75	40.44
					% GT 0	88.9	100.0	100.0
12	2	3	3	9	Mean	39.22	41.38	36.44
					% GT 0	100.0	100.0	100.0
13	3	3	3	9	Mean	46.33	50.14	45.22
					% GT 0	100.0	100.0	100.0

TABLE 12

MEANS AND PERCENTAGES OF YOUTH ENGAGING IN DELINQUENT BEHAVIOR FOR UCR PART I INDEX OFFENSES

Type	LONGITUDINAL DRUG USE Pattern 1976	1977	1978	N		1976	1977	1978
0	0	0	0	426	Mean	9.19	9.14	9.11
					% GT 0	12.8	9.5	7.5
1	1	0	0	11	Mean	9.81	9.09	9.00
					% GT 0	27.3	9.5	0.0
2	0	1	0	20	Mean	9.25	9.20	9.10
					% GT 0	20.0	10.0	10.0
3	0	0	1	70	Mean	9.27	9.11	9.23
					% GT 0	12.9	7.1	12.9
4	0	1	1	67	Mean	9.21	9.40	9.31
					% GT 0	14.9	17.9	14.9
5	1	1	1	45	Mean	9.56	9.18	9.09
					% GT 0	22.2	13.3	6.7
6	0	0	2	20	Mean	9.15	9.10	9.25
					% GT 0	15.0	10.0	25.0
7	0	1	2	16	Mean	9.56	9.44	9.81
					% GT 0	18.7	31.2	25.0
8	1	1	2	19	Mean	9.95	9.78	9.68
					% GT 0	36.8	26.3	21.1
9	1	2	2	28	Mean	9.32	9.57	9.30
					% GT 0	21.4	39.3	14.8
10	2	2	2	28	Mean	9.54	9.53	9.32
					% GT 0	32.1	28.6	17.9
11	2	2	3	9	Mean	10.89	10.33	11.44
					% GT 0	66.7	33.3	44.4
12	2	3	3	9	Mean	11.33	12.00	9.67
					% GT 0	77.8	75.0	33.3
13	3	3	3	9	Mean	13.22	14.38	13.00
					% GT 0	77.8	100.0	88.9

TABLE 13

MEANS AND PERCENTAGES OF YOUTH ENGAGING IN DELINQUENT BEHAVIOR
FOR FELONY ASSAULT OFFENSES

Type	LONGITUDINAL DRUG USE Pattern 1976	1977	1978	N		1976	1977	1978
0	0	0	0	426	Mean	3.13	3.09	3.06
					% GT 0	10.9	7.6	5.2
1	1	0	0	11	Mean	3.64	3.09	3.00
					% GT 0	18.2	9.1	0.00
2	0	1	0	20	Mean	3.25	3.05	3.10
					% GT 0	20.0	5.0	10.00
3	0	0	1	70	Mean	3.14	3.07	3.19
					% GT 0	8.6	4.3	11.4
4	0	1	1	67	Mean	3.12	3.19	3.12
					% GT 0	10.4	10.4	9.0
5	1	1	1	45	Mean	3.27	3.15	3.09
					% GT 0	15.6	13.3	6.7
6	0	0	2	20	Mean	3.15	3.10	3.10
					% GT 0	15.0	10.0	10.0
7	0	1	2	16	Mean	3.25	3.25	3.56
					% GT 0	12.5	25.0	25.0
8	1	1	2	19	Mean	3.47	3.26	3.21
					% GT 0	26.3	15.8	15.8
9	1	2	2	28	Mean	3.25	3.28	3.17
					% GT 0	21.4	25.0	11.7
10	2	2	2	28	Mean	3.28	3.32	3.17
					% GT 0	25.0	17.9	17.9
11	2	2	3	9	Mean	3.44	3.44	4.00
					% GT 0	33.3	22.2	33.3
12	2	3	3	9	Mean	4.78	5.11	3.33
					% GT 0	77.8	66.7	22.2
13	3	3	3	9	Mean	4.00	4.22	4.77
					% GT 0	77.8	77.8	66.7

TABLE 14

MEANS AND PERCENTAGES OF YOUTH ENGAGING IN DELINQUENT BEHAVIOR
FOR ROBBERY OFFENSES

Type	LONGITUDINAL DRUG USE Pattern 1976	1977	1978	N		1976	1977	1978
0	0	0	0	426	Mean	3.05	3.03	3.04
					% GT 0	2.8	2.1	3.3
1	1	0	0	11	Mean	3.00	3.00	3.00
					% GT 0	0.0	0.0	0.0
2	0	1	0	20	Mean	3.00	3.10	3.00
					% GT 0	0.0	5.0	0.0
3	0	0	1	70	Mean	3.06	3.03	3.01
					% GT 0	5.7	1.4	1.4
4	0	1	1	67	Mean	3.05	3.10	3.16
					% GT 0	3.0	4.5	6.0
5	1	1	1	45	Mean	3.22	3.00	3.00
					% GT 0	6.7	0.0	0.0
6	0	0	2	20	Mean	3.00	3.00	3.05
					% GT 0	0.0	0.0	5.0
7	0	1	2	16	Mean	3.25	3.06	3.06
					% GT 0	12.5	6.2	6.2
8	1	1	2	19	Mean	3.21	3.00	3.42
					% GT 0	11.5	0.0	11.5
9	1	2	2	28	Mean	3.07	3.11	3.11
					% GT 0	3.6	7.1	7.4
10	2	2	2	28	Mean	3.04	3.00	3.00
					% GT 0	3.6	0.0	0.0
11	2	2	3	9	Mean	3.67	3.67	3.78
					% GT 0	11.1	11.1	11.1
12	2	3	3	9	Mean	3.11	3.00	3.00
					% GT 0	11.1	0.0	0.0
13	3	3	3	9	Mean	4.11	3.62	3.33
					% GT 0	33.3	37.5	32.2

TABLE 15

MEANS AND PERCENTAGES OF YOUTH ENGAGING IN DELINQUENT BEHAVIOR FOR FELONY THEFT OFFENSES

Type	LONGITUDINAL DRUG USE Pattern 1976	1977	1978	N		1976	1977	1978
0	0	0	0	426	Mean	4.06	4.05	4.04
					% GT 0	5.2	3.5	3.3
1	1	0	0	11	Mean	4.45	4.00	4.00
					% GT 0	27.3	0.0	0.0
2	0	1	0	20	Mean	4.10	4.05	4.05
					% GT 0	10.0	5.0	5.0
3	0	0	1	70	Mean	4.14	4.06	4.06
					% GT 0	8.6	4.3	4.3
4	0	1	1	67	Mean	4.09	4.18	4.10
					% GT 0	7.5	14.9	9.0
5	1	1	1	45	Mean	4.18	4.11	4.04
					% GT 0	13.3	8.9	2.2
6	0	0	2	20	Mean	4.15	4.05	4.20
					% GT 0	15.0	5.0	15.0
7	0	1	2	16	Mean	4.25	4.37	4.50
					% GT 0	18.7	31.2	25.0
8	1	1	2	19	Mean	4.79	4.95	4.47
					% GT 0	31.6	31.6	15.8
9	1	2	2	28	Mean	4.14	4.50	4.25
					% GT 0	10.7	28.6	21.4
10	2	2	2	28	Mean	4.57	4.54	4.36
					% GT 0	28.6	28.6	28.6
11	2	2	3	9	Mean	5.44	4.56	5.22
					% GT 0	66.7	22.2	55.6
12	2	3	3	9	Mean	5.00	5.56	5.00
					% GT 0	45.6	77.8	44.4
13	3	3	3	9	Mean	8.44	8.56	7.44
					% GT 0	88.9	88.9	44.4

TABLE 16

MEANS AND PERCENTAGES OF YOUTH ENGAGING IN DELINQUENT BEHAVIOR FOR MINOR ASSAULT OFFENSES

Type	LONGITUDINAL DRUG USE Pattern 1976	1977	1978	N		1976	1977	1978
0	0	0	0	426	Mean	3.60	3.54	3.43
					% GT 0	40.6	36.0	31.8
1	1	0	0	11	Mean	5.09	3.55	3.18
					% GT 0	81.8	36.4	18.2
2	0	1	0	20	Mean	3.90	3.55	3.80
					% GT 0	45.0	35.0	25.0
3	0	0	1	70	Mean	4.09	4.09	4.05
					% GT 0	51.4	47.1	48.6
4	0	1	1	67	Mean	3.94	3.82	3.56
					% GT 0	50.7	43.3	34.3
5	1	1	1	45	Mean	4.11	3.96	3.49
					% GT 0	46.7	48.9	24.4
6	0	0	2	20	Mean	4.05	3.90	4.10
					% GT 0	40.0	50.0	50.0
7	0	1	2	16	Mean	4.31	3.88	4.25
					% GT 0	43.7	50.0	50.0
8	1	1	2	19	Mean	4.58	4.11	3.68
					% GT 0	63.2	52.6	31.6
9	1	2	2	28	Mean	4.21	4.50	3.85
					% GT 0	67.9	57.1	50.0
10	2	2	2	28	Mean	4.32	4.00	3.50
					% GT 0	57.1	35.7	32.1
11	2	2	3	9	Mean	4.67	4.33	4.78
					% GT 0	66.7	33.3	44.4
12	2	3	3	9	Mean	6.44	5.13	3.89
					% GT 0	88.9	87.5	33.3
13	3	3	3	9	Mean	5.56	5.75	4.55
					% GT 0	88.9	100.0	65.6

TABLE 17

MEANS AND PERCENTAGES OF YOUTH ENGAGING IN DELINQUENT BEHAVIOR
FOR MINOR THEFT OFFENSES

Type	LONGITUDINAL DRUG USE Pattern 1976	1977	1978	N		1976	1977	1978
0	0	0	0	426	Mean	3.11	3.10	3.08
					% GT 0	8.7	7.8	6.6
1	1	0	0	11	Mean	3.55	3.27	3.18
					% GT 0	27.3	8.2	18.2
2	0	1	0	20	Mean	3.05	3.25	3.05
					% GT 0	5.0	10.0	6.3
3	0	0	1	70	Mean	3.13	3.17	3.23
					% GT 0	11.4	14.3	14.3
4	0	1	1	67	Mean	3.24	3.28	3.22
					% GT 0	11.9	23.9	11.4
5	1	1	1	45	Mean	3.56	3.42	3.16
					% GT 0	28.9	31.1	13.3
6	0	0	2	20	Mean	3.45	3.25	3.45
					% GT 0	15.0	20.0	30.0
7	0	1	2	16	Mean	3.50	3.37	3.94
					% GT 0	25.0	37.5	37.5
8	1	1	2	19	Mean	4.11	3.84	3.74
					% GT 0	42.1	47.4	42.1
9	1	2	2	28	Mean	3.92	4.43	4.21
					% GT 0	64.3	57.1	35.7
10	2	2	2	28	Mean	4.11	3.79	3.50
					% GT 0	54.6	46.4	21.4
11	2	2	3	9	Mean	4.89	4.33	4.67
					% GT 0	55.6	65.6	77.8
12	2	3	3	9	Mean	4.56	5.33	4.11
					% GT 0	77.8	77.8	18.2
13	3	3	3	9	Mean	7.33	7.22	5.33
					% GT 0	77.8	77.8	55.6

TABLE 18

MEANS AND PERCENTAGES OF YOUTH ENGAGING IN DELINQUENT BEHAVIOR
FOR PROPERTY DAMAGE OFFENSES

Type	LONGITUDINAL DRUG USE Pattern 1976	1977	1978	N		1976	1977	1978
0	0	0	0	426	Mean	3.48	3.37	3.35
					% GT 0	17.5	23.5	20.2
1	1	0	0	11	Mean	3.73	3.36	3.00
					% GT 0	45.5	27.3	0.0
2	0	1	0	20	Mean	3.50	3.45	3.30
					% GT 0	35.0	25.0	25.0
3	0	0	1	70	Mean	3.51	3.30	3.55
					% GT 0	31.4	22.9	30.0
4	0	1	1	67	Mean	3.48	3.53	3.38
					% GT 0	23.9	26.9	19.4
5	1	1	1	45	Mean	3.80	3.49	3.68
					% GT 0	40.0	24.4	20.0
6	0	0	2	20	Mean	3.45	3.20	3.80
					% GT 0	40.0	15.0	35.0
7	0	1	2	16	Mean	3.69	3.56	4.06
					% GT 0	37.5	37.5	43.7
8	1	1	2	19	Mean	3.63	4.11	3.52
					% GT 0	36.8	36.8	15.8
9	1	2	2	28	Mean	4.25	4.54	3.64
					% GT 0	53.6	42.9	32.1
10	2	2	2	28	Mean	4.32	4.04	3.68
					% GT 0	60.7	50.0	39.3
11	2	2	3	9	Mean	5.78	4.89	4.89
					% GT 0	55.6	66.7	55.6
12	2	3	3	9	Mean	4.44	4.22	4.67
					% GT 0	66.7	44.4	33.3
13	3	3	3	9	Mean	7.00	6.11	5.33
					% GT 0	88.9	77.8	66.7

TABLE 19

MEANS AND PERCENTAGES OF YOUTH ENGAGING IN DELINQUENT BEHAVIOR FOR PUBLIC DISORDER OFFENSES

Type	LONGITUDINAL DRUG USE Pattern 1976	1977	1978	N		1976	1977	1978
0	0	0	0	426	Mean	5.40	5.38	5.40
					% GT 0	21.4	21.8	22.6
1	1	0	0	11	Mean	6.36	6.09	5.55
					% GT 0	54.5	36.4	36.4
2	0	1	0	20	Mean	5.55	5.60	5.55
					% GT 0	25.0	35.0	30.0
3	0	0	1	70	Mean	5.75	5.76	6.17
					% GT 0	40.0	34.3	50.0
4	0	1	1	67	Mean	5.62	6.73	6.87
					% GT 0	32.8	62.7	47.8
5	1	1	1	45	Mean	6.96	6.93	7.00
					% GT 0	75.6	73.3	66.7
6	0	0	2	20	Mean	5.70	5.90	7.00
					% GT 0	35.0	45.0	70.0
7	0	1	2	16	Mean	6.00	6.87	8.25
					% GT 0	37.5	56.2	62.5
8	1	1	2	19	Mean	7.84	7.57	8.32
					% GT 0	89.5	73.7	94.7
9	1	2	2	28	Mean	7.61	9.25	9.11
					% GT 0	85.7	92.9	96.4
10	2	2	2	28	Mean	9.29	8.75	8.46
					% GT 0	96.3	92.9	82.1
11	2	2	3	9	Mean	11.22	10.67	11.67
					% GT 0	88.9	88.9	100.0
12	2	3	3	9	Mean	8.67	11.00	10.22
					% GT 0	100.0	100.0	77.8
13	3	3	3	9	Mean	12.89	11.89	12.00
					% GT 0	88.9	100.0	100.0

TABLE 20

MEANS AND PERCENTAGES OF YOUTH ENGAGING IN DELINQUENT BEHAVIOR FOR ILLEGAL SERVICE OFFENSES

Type	LONGITUDINAL DRUG USE Pattern 1976	1977	1978	N		1976	1977	1978
0	0	0	0	426	Mean	3.00	3.02	3.00
					% GT 0	0.7	1.2	0.0
1	1	0	0	11	Mean	3.00	3.00	3.00
					% GT 0	0.0	0.0	0.0
2	0	1	0	20	Mean	3.00	3.05	3.00
					% GT 0	0.0	5.0	0.0
3	0	0	1	70	Mean	3.00	3.00	3.01
					% GT 0	0.0	0.0	1.4
4	0	1	1	67	Mean	3.00	3.04	3.04
					% GT 0	0.0	3.0	3.0
5	1	1	1	45	Mean	3.00	3.00	3.00
					% GT 0	0.0	0.0	0.0
6	0	0	2	20	Mean	3.00	3.00	3.15
					% GT 0	0.0	0.0	15.0
7	0	1	2	16	Mean	3.06	3.06	4.06
					% GT 0	6.2	6.2	25.0
8	1	1	2	19	Mean	3.00	3.00	3.11
					% GT 0	0.0	0.0	10.5
9	1	2	2	28	Mean	3.04	3.61	3.59
					% GT 0	3.6	39.3	29.6
10	2	2	2	28	Mean	3.21	3.71	3.86
					% GT 0	21.4	32.1	39.3
11	2	2	3	9	Mean	3.56	3.44	4.89
					% GT 0	33.3	33.3	88.9
12	2	3	3	9	Mean	3.56	5.22	5.56
					% GT 0	33.3	55.6	66.7
13	3	3	3	9	Mean	6.89	7.89	7.22
					% GT 0	77.8	89.9	88.9

Examination of the through-time changes in drug use and self-reported delinquency (SRD) in Table 11 reveals that for most drug use types that initiate use of a drug in years 2 or 3, there is a corresponding increase in that group's general SRD mean score or the proportion of the group involved in general delinquency, or both. With the exception of types 2 and 6, the other initial use of alcohol groups (types 3, 4, 7), the initial use of marijuana groups (types 6, 7, 8, 9), and the initial use of other drug groups (types 11 and 12) all provide indication of increased delinquency involvement during the year of initial increase in drug use. Because drug use types 1 and 2 are the only types that involve termination of drug use and their SRD scores in the year of termination are not consistent (type 1 decreasing and type 2 more or less constant), the relationship of cessation of drug use and SRD is unclear. Because some group sizes are relatively small, the assumed reliability of the above relationships must be somewhat tentative.

Since the general SRD measure encompasses a wide range of delinquent behaviors, an examination of the relationship between drug use and more specific groups of delinquent behaviors is informative. In particular, Table 21 (which provides information about UCR Part I offenses and summarizes offenses included in the felony assault, robbery, and felony theft subscales) provides an examination of the drug use/SRD relationship for more serious offenses. With the exception of the small "other" drug use types, the majority of youth within each drug use type have engaged in no UCR Part I offenses. Since Table 12 gives year-to-year data, a different group of youth could be involved in these Part I offenses each year, and thus a majority of youth could have engaged in Part I offenses during the three-year period. Table 21 provides the percentage of each drug use type engaging in at

TABLE 21

PERCENTAGE OF YOUTH ENGAGING IN UCR PART 1 OFFENSES ACROSS ALL THREE YEARS

LONGITUDINAL DRUG USE Type	Pattern	NO UCR PART I OFFENSES %	1 OR MORE UCR PART 1 OFFENSES %
0	000	80.4	19.6
1	100	72.7	27.3
2	010	75.0	25.0
3	001	75.7	24.3
4	011	73.1	26.9
5	111	73.3	26.7
6	002	70.0	30.0
7	012	62.5	37.5
8	112	47.4	52.6
9	122	51.9	48.1
10	222	57.1	42.9
11	223	22.2	77.8
12	233	25.0	75.0
13	333	0.0	100.0
TOTAL		73.2	26.8

least one Part I offense throughout the entire three-year period. With the exception of type 8 and the "other" drug use types (11-13), Table 21 indicates that the majority of youth in each drug type have never engaged in any Part I offenses (for type 8 the modal number of Part I offenses across the three years is 0). As a result, for the majority of youth contained in drug use types that involve alcohol and marijuana use (types 0-10), drug use is not related to involvement in more serious forms of delinquency.

For youth who engage in some UCR Part I offenses there may be a relationship with drug use. There is a slight increase in the proportion of youth committing Part I offenses associated with initial use of alcohol, marijuana, and "other" drugs, for some drug use types. However, given the sample sizes of these types, there is insufficient evidence to provide a reliable conclusion.

The relationship between changes in drug use and changes in involvement in less serious delinquent offenses can be seen in Tables 16 through 20. Because of the relatively small sample sizes of many of the drug use types, only tentative conclusions about stable relationships can be made. In general, minor assault decreases with initiation into alcohol use (types 2 and 4), marijuana use (types 8 and 9), and use of other drugs (type 12). Only types 7 and 11 provide an indication of increased involvement in minor assault associated with a drug use progression. Increases in minor theft associated with increases in drug use can be seen in types 2, 4, and 7, for alcohol use; type 6 for marijuana use; and type 11 for use of "other" drugs. Types 8 and 9, however, show a decrease in minor theft with an increase in marijuana use. The results for offenses that involve the damage of property are also mixed,

purpose, separate longitudinal typologies of delinquency were created for involvement in serious or UCR (Part I offenses), minor offenses (consisting of minor assault, minor theft, and property damage offenses), public disorder offenses, illegal service offenses, and for the cross-sectional patterned delinquency typology described earlier.

Each of these typologies was created by determining, for each of the three years, whether a youth had committed at least one delinquent act of the particular offense set under consideration. Thus, each youth was given a score of 1 or 0 for being involved or not involved in each kind of delinquent behavior, and the pattern of involvement across the three years was determined. For example, a (0,1,1) pattern indicates that a youth engaged in a given kind of delinquent behavior in years 2 and 3 of the study. Combining youth with identical longitudinal patterns into groups or types produces the longitudinal typology. To create the longitudinal <u>patterned</u> delinquency typology, the cross-sectional patterned delinquency types were used. To avoid the vast number of potential types, the patterned types 1, 2, and 3 were combined into one group, and types 4 and 5 were combined into another. This grouping places the nondelinquent, exploratory, and victimless patterned delinquency types into one group, and combines those youth showing patterned involvement in crimes against persons or property in the other. The groups thus reflect a division into a nonpatterned or minor offense group and a group of having patterned involvement in more serious offenses.

Crosstabulations of the longitudinal drug use types and the longitudinal delinquency typologies are contained in Tables 22-26. Examination of these tables reveals strong similarities with the earlier group analyses. For each

TABLE 22

CROSSTABULATION OF LONGITUDINAL DRUG USE TYPES
BY LONGITUDINAL DELINQUENCY TYPES BASED ON INDEX OFFENSES*

LONGITUDINAL DRUG USE Type	Pattern	Type Pattern \ LONGITUDINAL DELINQUENCY TYPES	0 000	1 001	2 010	3 011	4 100	5 101	6 110	7 111	ROW TOTAL
0	000		336 80.4 59.9 43.9	10 2.4 50.0 1.3	15 3.6 44.1 2.0	6 1.4 31.6 .8	28 6.7 48.3 3.7	5 1.2 35.7 .7	9 2.2 37.5 1.2	9 2.2 25.0 1.2	418 54.6
1	100		8 72.7 1.4 1.0	0 0 0 0	0 0 0 0	0 0 0 0	2 18.2 3.4 .3	0 0 0 0	1 9.1 4.2 .1	0 0 0 0	11 1.4
2	010		15 75.0 2.7 2.0	0 0 0 0	1 5.0 2.9 .1	0 0 0 0	2 10.0 3.4 .3	1 5.0 7.1 .1	0 0 0 0	1 5.0 2.8 .1	20 2.6
3	001		53 75.7 9.4 6.9	5 7.1 25.0 .7	2 2.9 5.9 .3	1 1.4 5.3 .1	5 7.1 8.6 .7	2 2.9 14.3 .3	1 1.4 4.2 .1	1 1.4 2.8 .1	70 9.1
4	011		49 73.1 8.7 6.4	1 1.5 5.0 .1	4 6.0 11.8 .5	3 4.5 15.8 .4	4 6.0 6.9 .5	1 1.5 7.1 .1	0 0 0 0	5 2.5 13.9 7	67 8.7
5	111		33 73.3 5.9 4.3	0 0 0 0	2 4.4 5.9 .3	0 0 0 0	5 11.1 8.6 .7	1 2.2 7.1 .1	2 4.4 8.3 .3	2 4.4 5.6 .3	45 5.9
6	002		14 70.0 2.5 1.8	1 5.0 5.0 .1	0 0 0 0	2 10.0 10.5 .3	1 5.0 1.7 .4	2 10.0 14.3 0	0 0 0 0	0 0 0 0	20 2.6
7	012		10 62.5 1.8 1.3	1 6.3 5.0 .1	1 6.3 2.9 .1	1 6.3 5.3 .1	0 0 0 0	0 0 0 0	1 6.3 4.2 .1	2 12.5 5.6 .3	16 2.1
COLUMN TOTAL			561 73.2	20 2.6	34 4.4	19 2.5	58 7.6	14 1.8	24 3.1	36 4.7	766 100.0

* Cell entries are count, row %, column %, total %, in that order.

TABLE 22 CONTINUED

LONGITUDINAL DRUG USE Type	Pattern	Type Pattern \ LONGITUDINAL DELINQUENCY TYPES	0 000	1 001	2 010	3 011	4 100	5 101	6 110	7 111	ROW TOTAL
8	112		9 47.4 1.6 1.2	1 5.3 5.0 .1	1 5.3 2.9 .1	1 5.3 5.3 .1	4 21.1 6.9 .5	0 0 0 0	1 5.3 4.2 .1	2 10.5 5.6 .3	19 2.5
9	122		14 51.9 2.5 1.8	0 0 0 0	5 18.5 14.7 .7	3 11.1 15.8 .4	2 7.4 3.4 .3	0 0 0 0	2 7.4 8.3 .3	1 3.7 2.8 .1	27 3.5
10	222		16 57.1 2.9 2.1	0 0 0 0	2 7.1 5.9 .3	1 3.6 5.3 .1	3 10.7 5.2 .4	1 3.6 7.1 .1	2 7.1 8.3 .3	3 10.7 8.3 .4	28 3.7
11	223		2 22.2 .4 .3	1 11.1 5.0 .1	0 0 0 0	0 0 0 0	2 22.2 3.4 .3	1 11.1 7.1 .1	1 11.1 4.2 .1	2 22.2 5.6 .3	9 1.2
12	233		2 25.0 .4 .3	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	4 50.0 16.7 .5	2 25.0 5.6 .3	8 1.0
13	333		0 0 0 0	0 0 0 0	1 12.5 2.9 .1	1 12.5 5.3 .1	0 0 0 0	0 0 0 0	0 0 0 0	6 75.0 16.7 .8	8 1.0
COLUMN TOTAL			561 73.2	20 2.6	34 4.4	19 2.5	58 7.6	14 1.8	24 3.1	36 4.7	766 100.0

* Cell entries are count, row %, column %, total %, in that order.

TABLE 23

CROSSTABULATION OF LONGITUDINAL DRUG USE TYPES
BY LONGITUDINAL DELINQUENCY TYPES BASED ON MINOR OFFENSES*

LONGITUDINAL DRUG USE Type	Pattern	LONGITUDINAL DELINQUENCY TYPES Type Pattern	0 000	1 001	2 010	3 011	4 100	5 101	6 110	7 111	ROW TOTAL
0	000		135 32.1 71.4 17.6	15 3.6 57.7 2.0	24 5.7 52.2 3.1	27 6.4 55.1 3.5	55 13.1 57.9 7.2	21 5.0 55.3 2.7	43 10.2 43.4 5.6	100 23.8 44.2 13.0	420 54.7
1	100		1 9.1 .5 .1	0 0 0 0	0 0 0 0	0 0 0 0	4 36.4 4.2 .5	0 0 0 0	3 27.3 3.0 .4	3 27.3 1.3 .4	11 1.4
2	010		4 21.1 2.1 .5	1 5.3 3.8 .1	3 15.8 6.5 .4	0 0 0 0	4 21.1 4.2 .5	1 5.3 2.6 .1	2 10.5 2.0 .3	4 21.1 1.8 .5	19 2.5
3	001		14 20.0 7.4 1.8	5 7.1 19.2 .7	3 4.3 6.5 .4	4 5.7 8.2 .5	7 10.0 7.4 .9	4 5.7 10.5 .5	6 8.6 6.1 .8	27 38.6 11.9 3.5	70 9.1
4	011		16 23.9 8.5 2.1	0 0 0 0	5 7.5 10.9 .7	6 9.0 12.2 .8	10 14.9 10.5 1.3	4 6.0 10.5 .5	10 14.9 10.1 1.3	16 23.9 7.1 2.1	67 8.7
5	111		10 22.2 5.3 1.3	2 4.4 7.7 .3	3 6.7 6.5 .4	2 4.4 4.1 .3	4 8.9 4.2 .5	4 2.2 2.6 .1	10 22.2 10.1 1.3	13 28.9 5.8 1.7	45 5.9
6	002		3 15.0 1.6 .4	0 0 0 0	2 10.0 4.3 .3	3 15.0 6.1 .4	2 10.0 2.1 .3	2 10.0 5.3 .3	2 10.0 2.0 .3	6 30.0 2.7 .8	20 2.6
7	012		3 18.8 1.6 4	0 0 0 0	1 6.3 2.2 .1	3 18.8 6.1 .4	1 6.3 1.1 .1	1 6.3 2.6 .1	1 6.3 1.0 .1	6 37.5 2.7 .8	16 2.1
COLUMN TOTAL			189 24.6	26 3.4	46 6.0	49 6.4	25 12.4	38 4.9	99 12.9	226 29.4	268 100.0

* Cell entries are count, row %, column %, total %, in that order.

TABLE 23 CONTINUED

LONGITUDINAL DRUG USE Type	Pattern	LONGITUDINAL DELINQUENCY TYPES Type Pattern	1 000	1 001	2 010	3 011	4 100	5 101	6 110	7 111	ROW TOTAL
8	112		1 5.3 .5 .1	1 5.3 3.8 .1	1 5.3 2.2 .1	0 0 0 0	2 10.5 2.1 .3	1 5.3 2.6 .1	5 26.3 5.1 .7	8 42.1 3.5 1.0	19 2.5
9	122		1 3.6 .5 .1	0 0 0 0	2 7.1 4.3 .3	2 7.1 4.1 .3	3 10.7 3.2 .4	1 3.6 2.6 .1	3 10.7 3.0 .4	16 57.1 7.1 2.1	28 3.6
10	222		1 3.6 .5 .1	2 7.1 7.7 .3	2 7.1 4.3 .3	1 3.6 2.0 .1	3 10.7 3.2 .4	1 3.6 2.6 .1	6 21.4 6.1 .8	12 42.9 5.3 1.6	28 3.6
11	223		0 0 0 0	0 0 0 0	0 0 0 0	1 11.1 2.0 .1	0 0 0 0	1 11.1 2.6 .1	1 11.1 1.0 .1	6 66.7 2.7 .8	9 1.2
12	233		0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	5 62.5 5.1 .7	3 37.5 1.3 .4	8 1.0
13	333		0 0 0 0	0 0 0 0	0 12.5 0 0	0 12.5 0 0	0 0 0 0	0 0 0 0	2 25.0 2.0 .3	6 75.0 2.7 .8	8 1.0
COLUMN TOTAL			189 24.6	26 3.4	46 6.0	49 6.4	95 12.4	38 4.9	99 12.9	226 29.4	768 100.0

* Cell entries are count, row %, column %, total %, in that order.

TABLE 24

CROSSTABULATION OF LONGITUDINAL DRUG USE TYPES
BY LONGITUDINAL DELINQUENCY TYPES BASED ON PUBLIC DISORDER OFFENSES*

LONGITUDINAL DRUG USE Type	Pattern	Type Pattern / LONGITUDINAL DELINQUENCY TYPES	0 000	1 001	2 010	3 011	4 100	5 101	6 110	7 111	ROW TOTAL
0	000		241 56.8 79.3 31.1	39 9.2 58.2 5.0	35 8.3 63.6 4.5	18 4.2 31.6 2.3	35 8.3 60.3 4.5	16 3.8 48.5 2.1	17 4.0 44.7 2.2	23 5.4 14.2 3.0	424 54.8
1	100		2 18.2 .7 .3	0 0 0 0	1 9.1 1.8 .1	2 18.2 3.5 .3	4 36.4 6.9 .5	1 9.1 3.0 .1	0 0 0 0	1 9.1 .6 .1	11 1.4
2	010		10 50.0 3.3 1.3	2 10.0 3.0 .3	0 0 0 0	3 15.0 5.3 .4	1 5.0 1.7 .1	0 0 0 0	3 15.0 7.9 .4	1 5.0 .6 .1	20 2.6
3	001		22 31.4 7.2 2.8	12 17.1 17.9 1.6	4 5.7 7.3 .5	4 5.7 7.0 .5	8 11.4 13.8 1.0	4 5.7 12.1 .5	1 1.4 2.6 .1	15 21.4 9.3 1.9	70 9.0
4	011		17 25.4 5.6 2.2	6 9.0 9.0 .8	12 17.9 21.8 1.6	10 14.9 17.5 1.3	2 3.0 3.4 .3	0 0 0 0	4 6.0 10.5 .5	16 23.9 9.9 2.1	67 8.7
5	111		3 6.7 1.0 .4	2 4.4 3.0 .3	1 2.2 1.8 .1	5 11.1 8.8 .6	5 11.1 8.6 .6	2 4.4 6.1 .3	6 13.3 15.8 .8	21 46.7 13.0 2.7	45 5.8
6	002		3 15.0 1.0 .4	3 15.0 4.5 .4	1 5.0 1.8 .1	6 30.0 10.5 .8	1 5.0 1.7 .1	4 20.0 12.1 .5	1 5.0 2.6 .1	1 5.0 .6 .1	20 2.6
7	012		5 31.3 1.6 .6	1 6.3 1.5 .1	0 0 0 0	4 25.0 7.0 .5	0 0 0 0	1 6.3 3.0 .1	1 6.3 2.6 .1	4 25.0 2.5 .5	16 2.1
COLUMN TOTAL			304 39.3	67 8.7	55 7.1	57 7.4	58 7.5	33 4.3	38 4.9	162 20.9	774 100.0

* Cell entries are count, row %, column %, total %, in that order.

TABLE 24 CONTINUED

LONGITUDINAL DRUG USE Type	Pattern	Type Pattern / LONGITUDINAL DELINQUENCY TYPES	0 000	1 001	2 010	3 011	4 100	5 101	6 110	7 111	ROW TOTAL
8	112		1 5.3 .3 .1	1 5.3 1.5 .1	0 0 0 0	0 0 0 0	0 0 0 0	3 15.8 9.1 .4	0 0 0 0	14 73.7 8.6 1.8	19 2.5
9	122		0 0 0 0	1 3.6 1.5 .1	0 0 0 0	3 10.7 5.3 .4	1 3.6 1.7 .1	0 0 0 0	0 0 0 0	23 82.1 14.2 3.0	28 3.6
10	222		0 0 0 0	0 0 0 0	1 3.7 1.8 .1	0 0 0 0	1 3.7 1.7 .1	1 3.7 3.0 .1	3 11.1 7.9 .4	21 77.8 13.0 2.7	27 3.5
11	223		0 0 0 0	0 0 0 0	0 0 0 0	1 11.1 1.8 .1	0 0 0 0	1 11.1 3.0 .1	0 0 0 0	7 77.8 4.3 .9	9 1.2
12	233		0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	2 22.2 5.3 .3	7 77.8 4.3 .9	9 1.2
13	333		0 0 0 0	0 0 0 0	0 0 0 0	1 11.1 1.8 .1	0 0 0 0	0 0 0 0	0 0 0 0	8 88.9 4.9 1.0	9 1.2
COLUMN TOTAL			304 39.3	67 8.7	55 7.1	57 7.4	58 7.5	33 4.3	38 4.9	162 20.9	774 100.0

* Cell entries are count, row %, column %, total %, in that order.

TABLE 25

CROSSTABULATION OF LONGITUDINAL DRUG USE TYPES
BY LONGITUDINAL DELINQUENCY TYPES BASED ON ILLEGAL SERVICE OFFENSES*

LONGITUDINAL DRUG USE Type	Pattern	Type Pattern	0 000	1 001	2 010	3 011	4 100	5 101	6 110	7 111	ROW TOTAL
0	000		411	0	3	2	2	0	0	0	418
			98.3	0	.7	.5	.5	0	0	0	54.5
			59.2	0	23.1	14.3	66.7	0	0	0	
			53.6	0	.4	.3	.3	0	0	0	
1	100		11	0	0	0	0	0	0	0	11
			100.0	0	0	0	0	0	0	0	1.4
			1.6	0	0	0	0	0	0	0	
			1.4	0	0	0	0	0	0	0	
2	010		19	0	1	0	0	0	0	0	20
			95.0	0	5.0	0	0	0	0	0	2.6
			2.7	0	7.7	0	0	0	0	0	
			2.5	0	.1	0	0	0	0	0	
3	001		69	1	0	0	0	0	0	0	70
			98.6	1.4	0	0	0	0	0	0	9.1
			9.9	4.3	0	0	0	0	0	0	
			9.0	.1	0	0	0	0	0	0	
4	011		64	1	1	1	0	0	0	0	67
			95.5	1.5	1.5	1.5	0	0	0	0	8.7
			9.2	4.3	7.7	7.1	0	0	0	0	
			8.3	.1	.1	.1	0	0	0	0	
5	111		44	0	0	0	0	0	0	0	44
			100.0	0	0	0	0	0	0	0	5.7
			6.3	0	0	0	0	0	0	0	
			5.7	0	0	0	0	0	0	0	
6	002		17	3	0	0	0	0	0	0	20
			85.0	15.0	0	0	0	0	0	0	2.6
			2.4	13.0	0	0	0	0	0	0	
			2.2	.4	0	0	0	0	0	0	
7	012		12	3	0	0	0	0	0	1	16
			75.0	18.8	0	0	0	0	0	6.3	2.1
			1.7	13.0	0	0	0	0	0	6.3	
				1.6	.4	0	0	0	0	0	.1
COLUMN TOTAL			694	23	13	14	3	2	2	16	767
			90.5	3.0	1.7	1.8	.4	.3	.3	2.1	100.0

* Cell entries are count, row %, column %, total %, in that order.

TABLE 25 CONTINUED

LONGITUDINAL DELINQUENCY TYPES

LONGITUDINAL DRUG USE Type	Pattern	Type Pattern	0 000	1 001	2 010	3 011	4 100	5 101	6 110	7 111	ROW TOTAL
8	112		17	2	0	0	0	0	0	0	19
			89.5	10.5	0	0	0	0	0	0	2.5
			2.4	8.7	0	0	0	0	0	0	
			2.2	.3	0	0	0	0	0	0	
9	122		13	3	5	5	0	0	1	0	27
			48.1	11.1	18.5	18.5	0	0	3.7	0	3.5
			1.9	13.0	38.5	35.7	0	0	50.0	0	
			1.7	.4	.7	.7	0	0	.1	0	
10	222		14	4	2	2	0	1	1	4	28
			50.0	14.3	7.1	7.1	0	3.6	3.6	14.3	3.7
			2.0	17.4	15.4	14.3	0	50.0	50.0	25.0	
			1.8	.5	.3	.3	0	.1	.1	.5	
11	223		0	4	0	2	1	1	0	1	9
			0	44.4	0	22.2	11.1	11.1	0	11.1	1.2
			0	17.4	0	14.3	33.3	50.0	0	6.3	
			0	.5	0	.3	.1	.1	0	.1	
12	233		3	1	0	2	0	0	0	3	9
			33.3	11.1	0	22.2	0	0	0	33.3	1.2
			.4	4.3	0	14.3	0	0	0	18.8	
			.4	.1	0	.3	0	0	0	.4	
13	333		0	1	1	0	0	0	0	7	9
			0	11.1	11.1	0	0	0	0	77.8	1.2
			0	4.3	7.7	0	0	0	0	43.8	
			0	.1	.1	0	0	0	0	.9	
COLUMN TOTAL			694	23	13	14	3	2	2	16	767
			90.5	3.0	1.7	1.8	.4	.3	.3	2.1	100.0

* Cell entries are count, row %, column %, total %, in that order.

TABLE 26

CROSSTABULATION OF LONGITUDINAL DRUG USE TYPES
BY LONGITUDINAL DELINQUENCY TYPES BASED ON PATTERNED DELINQUENCY*

LONGITUDINAL DRUG USE Type	Pattern	Type Pattern	0 000	1 001	2 010	3 011	4 100	5 101	6 110	7 111	ROW TOTAL
			LONGITUDINAL DELINQUENCY TYPES								
0	000		343 83.9 63.5 46.0	8 2.0 32.0 1.1	13 3.2 34.2 1.7	8 2.0 36.4 1.1	27 6.6 48.2 3.6	4 1.0 26.7 .5	3 .7 12.0 .4	3 .7 12.5 .4	409 54.9
1	100		6 60.0 1.1 .8	0 0 0 0	0 0 0 0	0 0 0 0	4 40.0 7.1 .5	0 0 0 0	0 0 0 0	0 0 0 0	10 1.3
2	010		15 78.9 2.8 2.0	1 5.3 4.0 .1	0 0 0 0	1 5.3 4.5 .1	0 0 0 0	0 0 0 0	2 10.5 8.0 .3	0 0 0 0	19 2.6
3	001		44 62.9 8.1 5.9	5 7.1 20.0 .7	5 7.1 13.2 .7	4 5.7 18.2 .5	4 5.7 7.1 .5	3 4.3 20.0 .4	2 2.9 8.0 .3	3 4.3 12.5 .4	70 9.4
4	011		44 66.7 8.1 5.9	4 6.1 16.0 .5	4 6.1 10.5 .5	2 3.0 9.1 .3	6 9.1 10.7 .8	0 0 0 0	3 4.5 12.0 .4	3 4.5 12.5 .4	66 8.9
5	111		30 68.2 5.6 4.0	1 2.3 4.0 .1	3 6.8 7.9 .4	2 4.5 9.1 .3	0 0 0 0	3 6.8 20.0 .4	3 6.8 12.0 .4	2 4.5 8.3 .3	44 5.9
6	002		14 73.7 2.6 1.9	0 0 0 0	0 0 0 0	1 5.3 4.5 .1	1 5.3 1.8 .1	2 10.5 13.3 .3	0 0 0 0	1 5.3 4.2 .1	19 2.6
7	012		9 56.3 1.7 1.2	2 12.5 8.0 .3	0 0 0 0	0 0 0 0	2 12.5 3.6 .3	0 0 0 0	1 6.3 4.0 .1	2 12.5 8.3 .3	16 2.1
COLUMN TOTAL			540 72.5	25 3.4	38 5.1	22 3.0	56 7.5	15 2.0	25 3.4	24 3.2	745 100.0

* Cell entries are count, row %, column %, total %, in that order.

TABLE 26 CONTINUED

LONGITUDINAL DRUG USE Type	Pattern	Type Pattern	0 000	1 001	2 010	3 011	4 100	5 101	6 110	7 111	ROW TOTAL
			LONGITUDINAL DELINQUENCY TYPES								
8	112		6 35.3 1.1 .8	2 11.8 8.0 .3	3 17.6 7.9 .4	0 0 0 0	3 17.6 5.4 .4	0 0 0 0	1 5.9 4.0 .1	2 11.8 8.3 .3	17 2.3
9	122		9 34.6 1.7 1.2	1 3.8 4.0 .1	8 30.8 21.1 1.1	2 7.7 9.1 .3	2 7.7 3.6 .3	1 3.8 6.7 .1	2 7.7 8.0 .3	1 3.8 4.2 .1	26 3.5
10	222		15 57.7 2.8 2.0	0 0 0 0	1 3.8 2.6 .1	1 3.8 4.5 .1	4 15.4 7.1 .5	1 3.8 6.7 .1	2 7.7 8.0 .3	2 7.7 8.3 .3	26 3.5
11	223		3 37.5 .6 .4	1 12.5 4.0 .1	0 0 0 0	0 0 0 0	2 25.0 3.6 .3	0 0 0 0	1 12.5 4.0 .1	1 12.5 4.2 .1	8 1.1
12	233		1 12.5 .2 .1	0 0 0 0	0 0 0 0	1 12.5 4.5 .1	1 12.5 1.8 .1	0 0 0 0	3 37.5 12.0 .4	2 25.0 8.3 .3	8 1.1
13	333		1 14.3 .2 .1	0 0 0 0	1 14.3 2.6 .1	0 0 0 0	0 0 0 0	1 14.3 6.7 .1	2 28.6 8.0 .3	2 28.6 8.3 .3	7 .9
COLUMN TOTAL			540 72.5	25 3.4	38 5.1	22 3.0	56 7.5	15 2.0	25 3.4	24 3.2	745 100.0

* Cell entries are count, row %, column %, total %, in that order.

kind of delinquent behavior considered, the majority (more than 60%) of youth included in this study either have not engaged in delinquent acts or have no significant use of any drugs during the three years under investigation. Although the cells of the crosstabulations that involve both drug use and delinquency include only a minority of youth and are quite small, it can be seen that the proportion of youth that either are or will become involved in delinquent behavior increases across those groups that will become alcohol, alcohol and marijuana, and alcohol, marijuana, and other drug users.

While for many youth increases in various kinds of delinquency accompany initial use of alcohol, marijuana, or other drugs (as observed in the earlier analyses) Tables 22-26 also indicate there are different sequential patterns of delinquency among subgroups of youth in the same drug type. Because of this variety of patterns and small cell sizes, a clear determination of whether drug use precedes, follows, or occurs simultaneously with delinquent behavior within particular groups of youth becomes difficult. As a result, a summary of the temporal order of drug use and delinquency across all types is provided in Table 27. Because a focus upon predicting only drug use from prior delinquency or predicting only delinquency from prior drug use may provide misleading and conflicting results, this table contains percentages of the total sample of youth having particular temporal sequences of drug use and delinquency.[8] Because summaries are provided for different kinds of drug

[8] The difficulties that arise in examining the temporal sequence of drug use and delinquency among only youth who become drug users or among only youth who become delinquent result from the truncated sequence available for study. For example, examination of only those that begin to use drugs excludes from consideration those already using drugs who later become delinquent. Table 27 provides an example using involvement in patterned delinquency. Taking into account only those who become alcohol users (drug types 2, 3, 4), it can be seen that approximately 67% have no delinquency involvement, 23% are involved in patterned delinquency prior to using alcohol, 8% show a simultateous involvement, and only 2% show patterned delinquency following alcohol use. Thus it might be concluded that for the majority of youth who both use alcohol and become delinquent, delinquency precedes alcohol use. However, if the alcohol use of those youth who become delinquent (delinquency types 1, 2, and 3) is examined, it can be seen that approximately 56% have used alcohol prior to becoming involved in patterned delinquent behavior, 25% have a simultaneous involvement, and 19% show delinquency preceding alcohol use. These two findings are not contradictory, although using only one would provide a misleading inference. Rather, within sequences truncated in time, both patterns exist and must be examined if the temporal ordering of drug use and delinquency is to be understood.

use, the categories are not mutually exclusive and a youth may be counted in more than one category. For example, a youth using alcohol year 1, becoming involved in delinquency years 2 and 3 and beginning to use marijuana in year 3 would fall in both the alcohol use preceding delinquent involvement and delinquency preceding marijuana use categories. As a result, the percentages do not sum to 100%. Also included in the table as a separate group are youth not classifiable by the temporal ordering of drug use and delinquency. For example, the temporal ordering for youth that both use drugs and are delinquent year 1 cannot be determined.

Among youth who are or become drug users and who are or become engaged in delinquent behaviors, Table 27 consistently indicates that, with the exception of illegal service acts (consisting mainly of selling drugs), the most frequent sequence is for involvement in delinquency to precede drug use; the next most frequent sequence is for delinquency involvement to occur in the same year as drug use is initiated; and the least frequent sequence is for drug use to precede delinquency involvement. Although across different drugs

TABLE 27

TEMPORAL ORDER OF DRUG USE AND DELINQUENCY*

	INDEX OFFENSES	MINOR OFFENSES	PUBLIC DISORDER	ILLEGAL SERVICES	LONGITUDINAL DELINQUENCY TYPES
	%	%	%		%
No drug use and no delinquency	43.9	17.6	31.1	53.6	46.0
Drug use and no delinquency	29.4	7.0	8.1	36.8	26.5
Alcohol	(20.6)	(5.8)	(7.0)	(26.9)	(18.6)
Alcohol and marijuana	(8.2)	(1.2)	(1.1)	(9.5)	(7.1)
Alcohol, marijuana, and other drugs	(0.6)	(0.0)	(0.0)	(0.4)	(0.6)
No drug use and delinquent	10.7	37.1	23.7	1.0	8.9
Initial drug use before delinquency involvement	2.6	2.7	4.0	5.5	4.4
Alcohol	(1.9)	(1.9)	(3.6)	(2.6)	(3.9)
Alcohol, marijuana	(0.5)	(0.8)	(0.3)	(2.7)	(0.5)
Alcohol, marijuana, and other drugs	(0.2)	(0.0)	(0.1)	(0.2)	(0.1)
Initial drug use after delinquency involvement	6.3	18.8	12.6	0.8	8.0
Alcohol	(3.4)	(13.1)	(8.0)	(0.0)	(4.7)
Alcohol, marijuana	(1.3)	(3.6)	(2.4)	(0.1)	(2.1)
Alcohol, marijuana, and other drugs	(1.6)	(2.1)	(2.2)	(0.7)	(1.3)
Initial drug use and delinquent involvement occur in same year	3.4	3.0	6.4	3.4	3.7
Alcohol	(1.9)	(2.3)	(5.4)	(0.4)	(1.6)
Alcohol, marijuana	(1.4)	(0.7)	(1.0)	(2.5)	(2.0)
Alcohol, marijuana, and other drugs	(0.1)	(0.0)	(0.0)	(0.5)	(0.1)
Other - not classifiable	5.2	17.2	14.6	2.3	4.3

* Table entries are % of total sample.

and levels of seriousness of delinquent behavior the most common pattern is for drug use to follow involvement in delinquent behavior, a sizable group of youth displays the reverse pattern.

It should be noted that in contrast to the above and congruent with previous findings, involvement in illegal service offenses, which consist almost entirely of selling drugs, generally occurs only simultaneously with or following drug use. Although Table 27 indicates that a few youth who have used only alcohol are involved in illegal service offenses, the majority are either marijuana users or marijuana and other drug users.

At least two possible explanations for these results are available. First, there may be different types of youth. For one type, delinquency precedes and presumably may lead to drug use. For the second and smaller type, drug use precedes and presumably may lead to involvement in delinquent acts. For the third type, in which both drug use and delinquent behavior are initiated in the same year, either the measurement interval is too long to provide a temporal ordering or they form a unique type. A second explanation involves the measurement interval used in the National Youth Survey. Since the measurement period is essentially the calendar year, conceivably the time lapse between drug use and delinquency involvement (or vice versa) reported by some youth may be very short (e.g., drug use at the very end of one year and delinquent behavior at the very beginning of the next). In fact, it is possible that the time interval between drug use and delinquent behavior is shorter for youth who have a sequential pattern of drug use followed by delinquency than for those who initiate both kinds of behavior in the same year. If it were further assumed that drug use and delinquent behaviors are

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1 OF 2

part of the same general domain of behaviors, then the question of which type of behavior came first is not important. Rather, the question becomes whether there is a common structure of social and psychological variables that both predict and explain involvement in this general class of behaviors. Whether there is such a structure or whether there are different structures that predict and explain the differences in the sequential ordering of drug use and delinquent behavior of different types of youth cannot be answered within the limits of the data used for this report. The needed correlational methods or structural equation models employing maximum likelihood procedures require larger sample sizes than those available for the different types described above.

To summarize the findings of the longitudinal analyses, the following conclusions seem warranted:

1. The majority of youth studied either have no involvement in delinquency or no involvement in drug use over the three years of study; thus, for the majority of youth there is no relationship between their drug use and participation in delinquent behaviors.
2. Although there are a large number of developmental drug use patterns, the progression from no drug use to alcohol use, from alcohol use to alcohol and marijuana use, and from alcohol and marijuana use to the use of alcohol, marijuana, and other drugs, with many youth remaining at each step of the progression, is descriptive of the drug use stages that apply to the vast majority of youth who use drugs.
3. Public disorder offenses and illegal service offenses (mainly selling drugs) increase with increasing drug use as determined by the above stages of drug use.

4. For other offenses, both serious and minor, the results are mixed and uncertain. Some longitudinal drug use types show increases in delinquency, some show no increase, and others show a decrease in delinquency corresponding to increases in drug use.
5. There are different sequential patterns of delinquency among youth with the same sequential drug use pattern. Although most commonly involvement in delinquency preceeds drug use, for some youth drug use and delinquency involvement occur in the same year, and for others drug use precedes involvement in delinquent behaviors.

VII. Summary

In this report the longitudinal relationship between drug use and delinquency in a national sample of youth has been investigated. For various analytic reasons the investigation has been essentially descriptive in nature. The sample of youth used in the analyses is a subset of the National Youth Survey respondents who were interviewed in 1977, 1978, and 1979 about their drug use and delinquent behavior and who were 11, 13, 15, or 17 years old at the time of the first interview.

In determining the developmental patterns of drug use, it was discovered that the vast majority of youth who use drugs followed a progression of alcohol use, to alcohol and marijuana use, to use of alcohol, marijuana, and other drugs, with many youth remaining at each stage of the progression. Only a few rare types did not follow this progression.

There is general agreement across both cross-sectional and longitudinal analyses of the relationship between drug use and delinquency, and across both serious (UCR Part I) offenses and most minor offenses. The majority of youth, and often a large majority, either have no involvement in delinquent behavior or have no involvement in drug use. As a result, for the majority of youth, the use of drugs is not related to involvement in delinquent behavior. Among youth who both use drugs and are engaged in delinquent behavior, the levels of delinquency are lowest among alcohol users, higher among alcohol and marijuana users, and highest among users of alcohol, marijuana, and other drugs. Although this ordering is highly consistent, an examination of longitudinal drug use patterns and longitudinal delinquency patterns indicates that for the largest group of youth who are drug users and delinquent, involvement in

delinquent behavior, especially minor offenses, precedes drug use. Smaller groups of youth displaying simultaneous initiation into drug use and delinquency or whose drug use precedes involvement in delinquent behavior do exist, however. Thus, among youth who are both delinquent and drug users, there are different temporal orderings of drug use and delinquency for different types of youth.

Because of their temporal ordering in relation to delinquent acts, illegal service offenses (which among the youth studied consist almost entirely of selling drugs) deserve special comment. For the most part, youth engaged in these offenses are users of marijuana, or marijuana and other illicit drugs, and their drug use was initiated either before or concurrent with their involvement in these delinquent behaviors. Thus it would appear that drug use is commonly a precursor to involvement in selling drugs.

The findings in this report are consistent with previous research. Increasing involvement in drug use is associated with increasing involvement in delinquent behavior. Strong evidence for any of the three explanatory hypotheses (drug use leads to delinquency, delinquency leads to drug use, or both are dependent on preexisting deviant orientations) is not contained in the analyses provided. However, the existence of different temporal orderings of the onset of drug use and the initiation of delinquent behavior among different subgroups of youth indicates that no one explanation may apply to all youth. Global generalizatons about the drug use/delinquency relationship within the youth population are likely to be inaccurate.

APPENDIX A

BREAKDOWN OF SELECTED SRD SCALES BY AGE COHORT, SEX, AND DRUG USE

TABLE A.1

BREAKDOWN OF SELECTED SRD SCALE MEANS BY AGE COHORT AND SEX: 1976*

SCALE	DRUG USE TYPE**	11 M	11 F	13 M	13 F	15 M	15 F	17 M	17 F
General SRD	0	25.6	25.2	27.0	25.3	27.1	25.2	26.2	24.9
	1	26.2		33.0	32.0	30.9	26.8	27.3	27.3
	2			44.4		34.6	28.0	31.1	28.0
	3					61.6		38.5	
UCR PART I Offenses	0	9.4	9.2	9.4	9.2	9.4	9.1	9.3	9.0
	1	10.0		10.5	9.9	9.9	9.2	9.4	9.2
	2			11.8		10.7	9.2	10.1	9.1
	3					17.0		11.3	
Minor Assault	0	3.7	3.5	4.3	3.6	4.4	3.6	3.8	3.4
	1	3.6		7.5	7.1	4.5	3.4	4.0	3.6
	2			9.4		5.4	4.4	4.2	3.2
	3					8.6		5.3	
Minor Theft	0	3.1	3.0	3.3	3.1	3.4	3.2	3.3	3.0
	1	3.2		4.3	3.5	4.3	3.6	3.3	3.5
	2			5.4		4.5	3.8	3.7	3.8
	3					10.2		4.7	
Public Disorder	0	5.3	5.5	5.8	5.4	5.8	5.5	5.5	5.3
	1	5.4		7.2	8.3	8.1	6.8	6.9	6.4
	2			14.4		8.7	6.6	9.6	7.9
	3					17.2		11.3	
Illegal Services	0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	1	3.0		3.0	3.4	3.0	3.0	3.0	3.0
	2			3.6		3.8	3.1	3.4	3.2
	3					7.8		7.7	

* Empty cells indicate that there are fewer than three youth in the sample with the given age, sex, and drug use pattern.

** Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

TABLE A.2

BREAKDOWN OF SELECTED SRD SCALE MEANS BY AGE COHORT AND SEX: 1977*

SCALE	DRUG USE TYPE**	11 M	11 F	13 M	13 F	15 M	15 F	17 M	17 F
General SRD	0	25.8	24.7	26.3	25.2	27.0	25.3	25.5	25.7
	1	27.3	25.6	28.2	27.6	29.3	26.7	27.9	25.5
	2			38.2	29.0	34.1	28.2	30.0	26.6
	3					50.9	31.3	37.7	28.5
UCR PART I Offenses	0	9.3	9.1	9.2	9.1	9.2	9.2	9.0	9.1
	1	9.8	9.0	9.6	9.6	9.7	9.2	9.2	9.1
	2			11.2	9.2	10.2	9.1	9.3	9.0
	3					14.7	10.3	10.7	9.5
Minor Assault	0	3.9	3.5	4.0	3.4	4.3	3.3	3.5	3.0
	1	4.5	3.2	4.8	4.0	4.4	3.6	3.9	3.2
	2			6.2	4.5	5.2	3.3	3.8	3.1
	3					6.1	4.0	4.6	3.7
Minor Theft	0	3.2	3.0	3.3	3.1	3.2	3.1	3.1	3.1
	1	3.3	3.4	3.5	3.3	3.9	3.4	3.3	3.0
	2			5.2	3.7	4.6	3.6	3.8	3.2
	3					7.0	5.0	5.1	3.3
Public Disorder	0	5.4	5.3	5.7	5.6	6.0	5.4	5.3	5.2
	1	6.2	5.8	6.6	6.9	7.9	6.8	6.5	6.3
	2			9.5	6.5	9.2	9.2	9.1	6.5
	3					13.2	9.0	10.1	6.3
Illegal Services	0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2
	1	3.0	3.0	3.2	3.2	3.0	3.0	3.0	3.0
	2			4.1	3.3	4.3	3.1	3.5	3.1
	3					6.7	3.0	6.8	3.3

* Empty cells indicate that there are fewer than three youth in the sample with the given age, sex, and drug use pattern.

** Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

TABLE A.3

BREAKDOWN OF SELECTED SRD SCALE MEANS BY AGE COHORT AND SEX: 1978*

SCALE	DRUG USE TYPE**	11 M	11 F	13 M	13 F	15 M	15 F	17 M	17 F
General SRD	0	25.5	25.0	25.6	25.0	26.7	25.0	25.0	24.8
	1	28.2	25.0	29.2	27.0	27.8	25.7	27.8	25.8
	2			31.6	30.2	31.7	27.4	31.5	28.2
	3			48.5		44.7	34.0	33.0	31.1
UCR PART I Offenses	0	9.2	9.1	9.1	9.1	9.3	9.0	9.0	9.0
	1	9.6	9.0	9.7	9.1	9.4	9.0	9.1	9.0
	2			9.7	9.7	9.7	9.0	9.4	9.0
	3			14.3		12.2	9.8	9.4	9.1
Minor Assault	0	3.8	3.4	3.6	3.3	3.6	3.0	3.1	3.1
	1	4.7	3.0	4.7	3.9	4.3	3.2	3.3	3.1
	2			4.9	4.2	4.1	3.4	3.7	3.1
	3			7.6		4.8	5.0	3.2	3.1
Minor Theft	0	3.2	3.1	3.1	3.0	3.2	3.0	3.0	3.0
	1	3.7	3.5	3.4	3.1	3.3	3.2	3.3	3.0
	2			3.8	4.0	4.0	3.4	3.8	3.0
	3			6.8		5.6	5.0	3.2	3.3
Public Disorder	0	5.6	5.3	5.5	5.3	5.6	5.2	5.2	5.1
	1	6.3	7.5	6.9	7.4	7.2	6.5	7.3	6.2
	2			8.4	7.8	9.1	6.5	8.9	6.6
	3			11.3		12.2	8.3	11.2	7.7
Illegal Services	0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	1	3.0	3.0	3.0	3.1	3.1	3.0	3.0	3.0
	2			3.7	4.4	3.7	3.3	3.8	3.1
	3			5.8		6.6	3.5	5.4	4.1

* Empty cells indicate that there are fewer than three youth in the sample with the given age, sex, and drug use pattern.

** Type 0 = essentially no drug use; type 1 = alcohol use only; type 2 = alcohol and marijuana use; type 3 = alcohol, marijuana, and other drug use.

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