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Some Not So Boring Findings From
The Denver Youth Survey

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Some Not So Boring Findings From The Denver Youth Survey

There is now some general agreement that one of the most appropriate ways to obtain a better understanding of delinquency, drug use and other problem behavior is to conduct longitudinal studies that follow the same individuals over extended and critical periods of their lives (e.g., Farrington et al., 1986; Kandel et al., 1986; McCord, 1990; Newcomb and Bentler, 1988; Tonry et al., 1991). By doing so we can more accurately see the factors that precede and lead to problem behaviors, examine the effects of these behaviors on other facets of life progressions, and identify the proper targets and timing of intervention programs. To follow individuals across major segments of their lives requires long term studies of a decade or more. Although longitudinal studies cannot definitively identify causes, they can provide relatively strong arguments about temporal ordering and potential causal relationships and provide information about developmental sequences that lead to delinquency and other problem behavior.

This report summarizes some of the findings over the past ten years from one such longitudinal study, the Denver Youth Survey. This study is a prospective longitudinal study of delinquency, drug use, victimization, and mental health that focuses on both antisocial and successful development during childhood, adolescence, and young adulthood. The aim of the study is to identify social conditions, personal characteristics, and developmental patterns that are linked to sustained involvement in delinquency and drug use; and to examine the relationship of these developmental patterns and behaviors to mental health and victimization. The research project is thus focused on the identification of both risk and protective factors that may initiate, sustain, terminate, or (perhaps more importantly) prevent delinquency and problem drug use across the lifespan. The project includes extensive focus on female delinquency, neighborhoods, school environment, mental health issues, gang involvement, problem drug use, and victimization.

The Denver Youth Survey (DYS) is based on a probability sample of households in "high-risk" neighborhoods of Denver Colorado. The neighborhoods were selected on the basis of a social ecology analysis of population and housing characteristics associated with delinquency. Only those socially disorganized neighborhoods that had high official crime rates (in the upper one third) were included. The survey respondents include 1527 children and youth (806 boys and 721 girls) who were 7, 9, 11, 13, or 15 years old in 1987, and one of their parents, who lived in one of the more than 20,000 randomly selected households.

The project has, in most regards, met the requirements of the model research design developed by the NIJ-MacArthur Foundation program of research on crime and delinquency (Farrington, Ohlin, & Wilson, 1996; Tonry, Ohlin and Farrington, 1991), including the use of a multi-cohort accelerated longitudinal design, the use of a household sample, the inclusion of both younger and older cohorts, and a large interdisciplinary measurement space. Each child or youth, and one of their parents, were interviewed annually from 1988 to 1992 and from 1995 to 1999, thus covering the ages from 7-26. Respondents who moved anywhere in the United States or overseas in the military and those in jails or prisons continued to be included in the survey.

This sampling procedure resulted in the inclusion of a large number of African-American, Hispanic, and other minority youth and includes both "in-school" and "drop-out" youth. Over 92% percent of the more than 20,000 households originally sampled were successfully screened for the presence of eligible children. The screened households contained 1794 eligible children of which 1527 (85%) completed the first year's interview. Completion rates were 91-93% in 1989-1992, which is notably high by prevailing standards. Due to a gap in funding for data collection, there was a two year gap in data collection that resulted in difficulties tracking the highly mobile survey respondents. As a result, the completion rate has been at a constant 80% for the 1995-1998 period, although the project has continued to interview over 90% of those located each year.

The DYS is part of OJJDP's Program of Research on the Causes and Correlates of Delinquency involving three projects located in Denver, Pittsburgh, and Rochester, NY. In its initial stage the three projects of the Program worked collaboratively in creating a sequence of core measures used in at least two and usually all three sites. This development served to enhance the overall measurement space of each project. In addition, each project developed measures specific to the individual site. For the DYS, this combination of core and specific measures resulted in a large measurement battery for child, youth, young adult and parent interview schedules. Some of the scales and measures are adaptations from previous studies, especially from our own previous survey work (e.g., the National Youth Survey, Elliott et al., 1985, 1989) and others were developed specifically for this survey.

Included are: (1) measures of delinquency and drug use, as well as other problem behavior and psychopathology; (2) family demographics; (3) neighborhood social characteristics and family integration and support within these neighborhoods; (4) family variables including parenting, the child's involvement in and attachment to the family, marital discord, parents' domestic violence, and self-reported parental drug use and criminality, as well as arrests of family members; (5) child/youth involvement in school, community activities, religious activities, and work; (6) personal and psychological characteristics of the child/youth; (7) personal and psychological characteristics of parents; (8) medical history including birth trauma, family medical and behavioral problems, developmental and learning problems as well as current physical characteristics and nutrition; (9) involvement with and the delinquent/drug use orientation of peers, including a special section on gangs; (10) educational, occupational, and current social strain; (11) secondary controls and rewards for drug use and delinquency, including risk of arrest and JJS processing; and (12) use of drug treatment and mental health services by focal child/youth respondents and other family members.

Although the list of variables is large, it is not an eclectic list. The selection of variables is guided by the problem behaviors and by the rich mix of variables provided by an integrated theoretical model with a focus on neighborhood social disorganization and effect, biological history, conventional and deviant socialization and bonding, personality and mental health, peer influences, secondary (external) controls and rational choice.

Based on our prior experiences with the National Youth Survey, the project developed new self-report drug use and delinquency measures, which we believe are substantial improvements over earlier measures. The drug use measure includes items about the use of both prescription and illicit non-prescription drugs and collects information about frequency of use, amounts used, location of use, and other follow-up information. The delinquency measure attempts to eliminate reporting of trivial events and the potential double counting of events and obtains information about physical location, nature of offense, and other follow-up information. Based on our earlier work and in collaboration with the Pittsburgh project, the DYS developed child measures of delinquency and drug use that mirrored the adolescent measures but which were suitable for children as young as 7 years of age.

In addition to self-reports of delinquent behavior and drug use, official arrest data from the Denver Police Department about all respondents in the longitudinal survey were obtained, covering all arrests and contacts through the fifth wave of the study.

Over its twelve year history, the Denver Youth Survey (DYS) has benefited from the combination of major funding for the project from the Office of Juvenile Justice and Delinquency Prevention (OJJDP) and the National Institute on Drug Abuse (NIDA). The DYS was originally funded as a study of the causes and correlates of delinquency over the 1986-1992 period by the Office of Juvenile Justice and Delinquency Prevention, which also supported analyses and other research efforts during the 1993-1994 period.

Supplemental funding from NIDA was provided from 1988-1992, to increase the drug use focus of the study and to permit a special study of the peers of a sample of the child and youth respondents of the main survey. During the 1995-1999 period, support for the main survey was provided by NIDA, with OJJDP providing supplemental funding for analyses and other research efforts.

In addition, the MacArthur Foundation supported an increased focus on neighborhoods within the main survey and a separate survey of the full city of Denver, using similar and for the most part identical instrumentation to that of the main survey over the 1989-1991 period. Funds supporting an ongoing collaborative study of the transition from school to work, as that transition affects delinquency and drug use, based on the sample of the DYS and a similar sample in Bremen, Germany, was funded by the German-American Academic Council for the 1997-1999 period with matching funds from OJJDP.

Given the breadth of the DYS, it is difficult to select the specific important or key findings to include in a summary such as this, since what is important varies by the orientation of different audiences. Nevertheless, we hope that the selection includes topics of interest for many readers. The topics have been grouped into general sections about (1) the epidemiology of delinquency, drug use, and victimization, and the co-occurrence and inter-relationship between these problem behaviors; (2) Information about gangs and peers; (3) Explanatory, risk, and protective factors; (4) the influence of arrest on subsequent behavior, and (5) help-seeking for youth. The following page provides an outline of the topics included so that a reader may choose those of particular interest.

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Over-time Changes in Delinquency and Drug Use: The 1970's and the 1990's.

Much has been said about the changing nature of delinquency and drug use over the past two decades. To examine these changes, equivalent measures of delinquency and drug use from the National Youth Survey in 1979 and from the DYS in 1991 were compared. The particular years examined were selected because both surveys were then in their fourth years, and matching drug use data was available. The samples were matched on age (14-18), urbanicity, and social class (Huizinga, 1997).

The prevalence rates of various kinds of delinquency (percentage of persons involved in a given type of offense), for both males and females are given in the following table. For status offenses, serious property offenses, and for serious violence there has been essentially **no change** in the prevalence rate over the 13 year period. Public disorder, minor property, and drug sale offenses all show substantial **decreases**. However, for males, gang fights show a substantial increase over this period, with the rate doubling from 8 to 16 percent.

Prevalence of Delinquency
By Type of Delinquency and Gender

Delinquency	Total		Males		Females	
	1979	1991	1979	1991	1979	1991
Status	58	59	63	62	52	57
Public Disorder	44	26	46	29	41	23
Minor Property	27	17	38	21	16	13
Serious Property	10	10	15	15	05	05
Serious Violence	12	12	16	17	07	06
Drug Sales	12	05	17	07	08	02
Gang Fights	07	11	08	16	06	05

Although the prevalence rates for serious violence are the same across these years, changes in the seriousness of violent offenses as indicated by the level of injury and use of weapons is also of interest. Examination of level of injury from assaults indicated that the level of injury has changed over time, with the prevalence of victims of violence being left in need of hospitalization or unconscious almost doubling, from 33 percent to 58 percent, across the 1979 to 1991 period. Correspondingly, the prevalence of weapons use has changed. While in 1979, 31 percent of serious assaults involved a weapon, in 1991 this rate had risen to 82 percent; and for gang fights the rate had risen from 42 percent to 58 percent.

In contrast to delinquency, and as reported in other research, the prevalence of drug use has decreased substantially over the 1979 to 1991 period. For both genders, the use of alcohol is lower in 1991 (from about 80% to about 50%); the use of marijuana has been reduced by about half, from around 40 percent to around 20 percent; and the use of hard drugs has dropped from about 19 percent to 4 percent.

Given these findings of few changes in the rates of serious delinquency and substantial decreases in the rates of drug use, a question arises of whether the often reported relationship between delinquency and drug use changed over this period. Findings indicated that the nature of the relationship has changed. For example, in 1991 a smaller proportion of serious delinquents are using drugs (48% in 1979; 17% in 1991). However, a greater proportion of users are serious offenders (27% in 1979; 48% in 1991).

In sum, for both male and female adolescents, it appears that there has been either little change or a decrease in the prevalence rates of delinquency, including serious delinquency and serious violence over the 1979 to 1991 period. The sole exception to this generalization is the prevalence of gang fights, which, for males, has doubled over this period. However, the level of injury from violent offenses has increased substantially, and this increase corresponds to an increase in the use of weapons. A combined focus on reducing the prevalence of violent offenders and on factors that would reduce the severity of the violent offenses they commit would seem appropriate.

In contrast to delinquency, for both genders, the prevalence of alcohol, marijuana, and hard drug use all decreased substantially over the 1979 to 1991 period. While current levels of adolescent drug use remain unacceptably high, it seems informative to remember and compare them with the levels of drug use one or two decades ago, so that small changes in prevalence rates are evaluated in an historical context and are not exaggerated for particular purposes.

Epidemiology: Age, Gender, and Ethnicity.

Much prior research has indicated that the commission of delinquency and drug use is not evenly distributed in our society. Levels of involvement have been shown to vary by age, gender, and ethnic group. Several reports about the epidemiology of delinquency, drug use, serious offending and violence based on the DYS and the other projects of the Program of Research (Huizinga, Loeber, & Thornberry 1994, 1995; Espiritu & Huizinga, 1996; Espiritu, 1998) are in general agreement with this prior research.

During adolescence, both males and females are involved in delinquency, serious delinquency, violence and drug use, and the level of involvement in serious and violent behavior indicates that concern about delinquency committed by both genders is clearly warranted. However, in general and across all ages, a larger proportion of males are engaged in serious and violent offenses and, on average, an active male offender commits these acts more often than a female offender. For example, in the Denver study, by age 16, 39% of males and 16% of females had been involved in serious violence.

One of the surprising findings of the DYS is that the developmental age curve for serious violence for males does not show a customary drop following mid-adolescence. Females show an expected age curve, with prevalence rates peaking in the mid-teenage years and generally declining thereafter. In contrast, for males there is no decline through age 19. This finding for males, that is replicated in the other sites of the Program of Research, is different from other studies. In Denver, the serious violence rate for males does begin to decline during the twenties, however.

With the exception of "street offenses" that are of concern to the public and serious violence, there are few consistent differences in the prevalence of delinquency across different ethnic groups. However, there is also a developmental factor: during childhood (ages 7-10) there are no consistent ethnic differences, but during adolescence, minority youth have higher rates of involvement in "street offenses" that are of concern to the public and in serious violence. These rates, however, are sufficiently small (less than 15% annually for any group) that it is clear that even during adolescence the vast majority of all ethnic groups are not involved in serious or violent delinquency.

Age of Initiation and Subsequent Delinquency.

Several DYS analyses have examined the relationship of age of initiation to later offending patterns. In general, these findings indicate that early initiation is quite strongly related to later offending. For example, among males, the percent of different age of initiation groups who became serious offenders during the ages of 15-17 was found to be:

Age of Initiation	Percent Who Became Serious Offenders
Before Age 9	67%
Ages 09-11	63%
Ages 12-14	27%
Ages 15-17	29%

Similar patterns held for females who became frequent offenders, although not necessarily serious offenders, in the 15-17 age period (Huizinga et al., 1994):

Another example is provided by the age of initiation of violence or fighting and later chronic violent offending (Huizinga et al., 1995).

Age of Initiation	Percent Who Became Chronic Violent Offenders
Before Age 10	62%
Ages 10-12	48%
Ages 13 or older	20%

Quite clearly, age of initiation of delinquent behaviors is related to later serious offending patterns, with almost two thirds of those initiating before the age of 9 or 10 becoming serious offenders during adolescence. Early initiators are a high risk group.

The Intermittency of Serious and Violent Offending.

It has been noted elsewhere that a small proportion of youth account for the majority of the serious and violent crime committed by adolescents and that there are relatively long developmental pathways leading to serious delinquent careers (e.g. Thornberry et al., 1995). These findings suggest a fair degree of stability in serious and violent offending. There is, however, an episodic or intermittent nature to serious and violent offending. That is, the majority of individuals engaged in these behaviors over time do not commit these behaviors regularly, not even every year. This can be illustrated by examining transitions in delinquency typologies that indicate that being a serious offender one year had little effect on being a serious offender in some specific year later on (Huizinga, 1994; Huizinga et al., 1994) and by examining the actual patterning of involvement in serious or violent offending across multiple years (Thornberry et al., 1995). For example, for well over 50% of those whose violent careers lasted three or more years, the patterning of violent and serious violent offenses was intermittent, i.e. there were years in which they committed no violent offenses. For those whose careers spanned five years, 75% had intermittent offending patterns.

This intermittent nature of serious and violent offending has important implications for research. First, cross-sectional surveys and longitudinal surveys with several years between data collections may fail to detect the serious or violent behavior of either intermittent offenders or those engaged in these behaviors only once, since they may be observed either before, after, or between a period in which they are active. Longitudinal designs with regular measurement are clearly needed. Second, even in longitudinal studies with regular measurement, it may be necessary to employ measures of offending patterns over several years to accurately identify serious

or serious violent offenders. An example is provided by the previous age of initiation findings. The results reported there used delinquency involvement over a three year period. If the same analyses were restricted to being a serious offender at age 17, the percent of those who initiated before age 9 and became serious offenders drops from 67% to 39%, and quite different conclusions might be drawn. Clearly the intermittent patterning of serious offending is an issue that needs greater attention in our research designs and analyses.

The Co-occurrence or Overlap of Problem Behaviors.

Several DYS reports have examined the overlap of various combinations of problem behaviors including delinquency, drug use, mental health problems, school problems, victimization, and sexual behavior and pregnancy (e.g. Huizinga et al., 1993; Weiher, 1996; Huizinga, et al., 1997; Huizinga & Chien, 1998; Espiritu, 1998). Some findings from these reports are summarized in the following.

Delinquency and Drug Use. Substance use and involvement in other delinquent behavior are clearly interrelated. As reported in many other studies and as found in the DYS, a large proportion of serious delinquents are drug users; and, conversely, a large proportion of serious drug users are delinquent. However, the relationship does not appear to be symmetric. Dividing the subjects into four groups, non-delinquent and non-drug using, delinquent but not drug using, drug using but not delinquent, and both delinquent and drug using, the proportion of children and youth who fall into these groups is illustrated in the following table. For children, drug use is measured by alcohol or marijuana use, and in Denver the largest proportion of these youngsters are neither delinquent nor drug using (65%). Among those involved in some form of delinquency, less than 20% are using alcohol or marijuana. However, 67% of those experimenting with these drugs are also delinquent.

**Overlap Of Delinquency And Drug Use
For Children And Adolescents**

		Child	Youth
Delinq	Drug Use		
No	No	65.1%	36.0%
Yes	No	25.5%	48.3%
No	Yes	3.0%	0.9%
Yes	Yes	6.2%	14.8%
Percent of delinquents who are drug users		19.6%	23.5%
Percent of drug users who are delinquent		67.4%	94.2%

A similar but even stronger finding holds for the adolescents, where drug use is measured by use of marijuana or other drugs. Overall, a little over one-third of the adolescents are not delinquent and do not use drugs, about one-quarter or less of the delinquents are using drugs, but almost all of the drug users are involved in some kind of delinquency. Thus, it appears that during the teen years most drug users are delinquent, but there are many delinquents who are not using drugs.

It should be carefully noted, however, as observed in the first section of this paper, the large proportion of drug users that are delinquent describes the drugs-delinquency relationship in the 1990's. A quite different relationship existed in the 1970's. Although the drugs-delinquency relationship is robust over time, the exact nature of the relationship may not be enduring.

In addition to the contemporaneous relationship of drug use and delinquency, it is interesting that when the substance use/delinquency relationship is examined over time, prior increases in substance use are found to have a larger impact on subsequent increases in delinquency, while prior increases in delinquency have a somewhat smaller impact on subsequent increases in drug use. The reverse is also true - prior decreases in substance use have a greater impact on decreases in delinquency, than do prior decreases in delinquency have on decreases in drug use. These findings support the current intervention efforts to reduce drug use among apprehended juveniles.

Delinquency and Mental Health Problems. Criminal behavior, especially violence, committed by persons who are mentally ill is often of public fascination and concern; and mentally ill offenders are often assumed to be especially dangerous and feared. On the other hand, mental illness may be seen as an excusing condition for the commission of criminal behavior, and offenders are seen as less culpable or blameworthy for their criminal acts. Moreover, apprehended serious offenders with mental health problems may be in need of mental health services, but since screening and treatment options are often not available, these youth present special challenges to the juvenile justice system.

Given public and practical interest in the potential relationship between serious crime and mental health problems, it is surprising that there is very little empirical knowledge about the co-occurrence of serious and violent offending and mental health problems in juvenile populations, and most of that which does exist is based on unrepresentative captive or detained samples. Moreover, the few studies that include a juvenile focus, often examine childhood and adolescent traits as predictors of future offending behavior, focus on conduct disorder or minor offending, or examine correlations or linear models between mental health problems and criminal behavior variables, none of which permit determination of the actual level of co-occurrence or overlap of serious offending and mental health problems.

How extensive is the overlap between serious violent and serious non-violent offending and mental health problems? Given the paucity of information from general population studies, the answer is - we really don't know. Some illustration, however, is provided in data from the DYS. Not surprisingly, serious violent offenders score significantly higher on externalizing symptoms and aggressive behavior. With this exception, however, differences in the prevalence of psychological problems lie between non-delinquents and delinquents (rather than between serious delinquents and other youth). For both genders, the prevalence of elevated levels of psychological problems is higher among both minor and serious delinquents and lower among non-delinquents. It should be noted, however, that less than half of delinquents of any kind display high levels of various psychological problems, so that it would be incorrect to characterize delinquents as a group as having particular psychological problems.

Two variables related to mental health, self-esteem and social isolation, have sometimes been described as being associated with delinquency. There is a rather traditional view that low self-esteem causes or is an instigator of violence; that aggression or violence is one way of gaining prestige and esteem. This view is applied to youth and adults alike, and has led to esteem building activities in prevention and intervention programs. However, there is sufficient justification to question this view, and to argue that it is high self-esteem and threats to this high esteem that leads to violence (Baumeister et al., 1996). Thus, the nature of the relationship between self-esteem and serious violence should not be considered as empirically demonstrated.

Also, it is assumed that aggressive/violent individuals would be rejected by individuals around them and become socially isolated, and there is some evidence for this in childhood (Dishion et al. 1991). However, whether this isolation extends into adolescence is perhaps questionable.

To contribute additional empirical information to these questions, DYS data were used to examine differences between various types of delinquents and non-delinquents in their feelings of self-esteem and social isolation. This examination revealed no differences between the delinquents and non-delinquents on these variables. In fact, for both males and females, the mean scores were essentially substantively and statistically identical, with similar standard deviations and similar frequency distributions. The belief that serious violent or serious delinquent offenders feel isolated at school, at home, or with their peers, or that they are different from other youth in their level of self-esteem was not supported. Given these findings and the opposing views concerning the relationship of self-esteem and social isolation to delinquency and violence, there clearly is a need for further examination of the role of these variables in relation to serious delinquency. This is especially true since affecting levels of these variables is a goal of some delinquency prevention and intervention programs.

Delinquency and School Problems. There is a widely held belief and considerable empirical evidence that school problems (poor academic performance, truancy, and drop out) are related to delinquent behavior. The relationship of school problems and delinquent behavior has been demonstrated in many studies and over a long historical period. Given the relationship between school problems and delinquency, it is interesting that the actual level of co-occurrence of school problems and serious delinquency within the adolescent population is not often examined. As might be anticipated, data from the DYS indicates a substantial overlap of school problems with serious and serious violent delinquency.

The greatest overlap of serious offending and school problems was found for truancy and school suspension, and substantially less overlap for school grades and for dropping out of school. While for any one specific school problem the overlap is not always extensive, when school problems are considered in total (i.e. having one or more school problems), the vast majority of serious (about 80%) and serious-violent offenders (about 90%) had one or more school problems, most commonly truancy and/or suspension. The level of overlap of delinquency and school problems is sufficiently high that school problems can be seen as contemporaneous risk factors for serious delinquency, and may provide targets for intervention strategies. However, it should be noted, whereas some form of school problem may be considered characteristic of serious delinquents, the majority of youth with school problems are not delinquent.

Multiple Problems. Examination of the overlap of delinquency and the presence of multiple problems reveals several interesting findings.

- As the number of problems across school, drug use, mental health, and victimization problems increases, so does the probability of being a delinquent. For males, 85% of those with all four problems were serious delinquents. Among females, 51% of those with three or four problems were delinquent, but not necessarily serious delinquents.
- In a sense, school problems can be seen as a necessary condition for serious delinquency. As noted above, the vast majority of serious delinquents had one or more school problems.
- For males, the addition of drug use to any one or a combination of other problems generally doubles and sometimes triples the proportion of serious delinquents.
- For both males and females, having school problems and being victimized increases the probability of serious delinquency.
- While having multiple problems is a strong risk factor for serious delinquency for males and a strong risk factor for delinquency for females, there are many youth with multiple problems that are not delinquent.

Delinquency, Drug Use, Sexual Activity, and Pregnancy. There is a fairly high rate of sexual activity and pregnancy reported by the subjects of the DYS. The overlap of delinquency, alcohol/drug use, sexual intercourse, and pregnancy is examined using data from subjects who were 13-17 years old in 1989 (Huizinga et al, 1993). To simplify presentation, alcohol and drug use have been combined into a single category. The following table gives data on the overlap of sexual activity, delinquency, and alcohol/drug use, listing the percentage of youth who are active in different combinations of these behaviors. For example, adding together the values for the total sample for the four rows that have a "yes" for sexual activity, 42.5 percent of the youth respondents are sexually active. However, only 4.4 percent of youth are involved only in sexual activity and 22.7 percent are involved in all three kinds of behaviors.

Percent of youth in different behavioral groups for total sample, males, and females

Delinquency	Alcohol and/or Drug Use	Sexual Activity	Total Sample	Females		
				Males	Not Pregnant	Pregnant
No	No	No	20.7	18.5	25.8	0
Yes	No	No	23.2	21.1	28.4	0
No	Yes	No	2.1	1.7	2.9	0
Yes	Yes	No	11.6	10.7	14.1	0
No	No	Yes	4.4	3.7	4.1	13.3
Yes	No	Yes	13.8	16.3	8.8	29.5
No	Yes	Yes	1.6	2.3	.6	2.9
Yes	Yes	Yes	22.7	25.7	15.3	54.3

In this table, females have been divided into not-pregnant and pregnant groups, so that the overlap of pregnancy with other behaviors can be examined. As can be seen, sexual activity is strongly related to involvement in both delinquency and drug use. Although there are many delinquents and alcohol/drug users who are not sexually active, the majority of both boys and girls who are sexually active are also involved in delinquency, alcohol/drug use, or both.

Similarly, the majority of girls who report being pregnant also report involvement in delinquency, alcohol/drug use, or both, and over half report alcohol/drug use. Although these data suggest there may be a fair amount of alcohol or drug use during pregnancy among these subjects, additional data about this specific issue was obtained in later waves of the DYS (Weiher, 1996). This data clearly indicated that the majority (over 70%) of girls who became pregnant discontinued their alcohol and other drug use when they became pregnant. However, the majority (approximately 70%) of those smoking tobacco continued their tobacco use during the pregnancy. This observation provides some concern because of the possible health consequences for the children of these young mothers.

Victimization.

In addition to problem behavior, the DYS includes a major component on victimization. Findings taken from several publications and reports (Esbensen and Huizinga, 1991; Esbensen, Huizinga, and Menard, 1998; Menard, 1997; Espiritu and Huizinga, 1996) include the following:

- Over a five year period 1987-1991, 85% to 87% of the DYS high risk sample aged 7-19 were victims of violent or theft offenses. About one-fourth of these youth were victims of serious violent offenses over the five year period.

- Over the five year period, the DYS sample experienced a total of 11,400 victimizations, including 731 robberies, 699 assaults with a weapon, 72 sexual assaults, 4,619 minor assaults, 824 non-accidental injuries, and 4,495 thefts. Clearly, the youth in this high risk sample are at high risk for victimization. However, over one-third of all theft victimizations and over one-half of all violent victimizations were concentrated among ten percent of the sample.

- Each year about 18% of respondents who had never previously been victimized experienced their first victimization. About 3% who had never previously been victims of serious violence experienced their first violent victimization.

- Two-thirds of the respondents were chronic multiple victims. That is, they were both victims in more than one year and also victims of multiple offenses in at least one year. Most victims of crime experienced intermittent victimization; victimization in one year, followed by a year in which they were not a victim, followed by at least one year in which they were again a victim of crime.

- Males were more likely victims of crime than were females, especially for serious violent offenses; but in this high risk sample, ethnicity was largely unrelated to victimization.

- Most respondents were both victims and perpetrators of crime. With respect to onset, victimization usually occurred first, but later victimization and other problem behaviors appear to influence each other. Injury victimization, in particular, appears to be a risk factor for other problem behavior.

- The best predictors of annual prevalence and frequency of victimization were (a) the delinquent behavior of the victim's friends, (b) the victim's own delinquent behavior, especially injury-inflicting offenses, (c) being male, and (d) frequency of alcohol use.

- There are substantial gender differences in the rates of victimization and in the strength of the relationship between victimization and delinquency. Males are more likely to be victims and the relationship between violent victimization and delinquency is stronger for males.

As these findings attest, victimization is not an insignificant aspect of the lives of the DYS child and adolescent sample. The findings suggest that the reduction of adolescent victimization, particularly violent victimization, could help reduce the onset, prevalence, and frequency of other problem behaviors.

Delinquent Gangs.

The DYS is one of the few large scale survey projects examining delinquent gangs within a general sample of youth. The individual-level longitudinal data of the project provides the opportunity to examine personal characteristics, delinquent behavior, and developmental issues surrounding gang membership and to permit comparisons with other youth. Several DYS reports and publications have involved studies of delinquent gang members (Esbensen and Huizinga, 1993; Esbensen, Huizinga and Weiher, 1993; Huizinga, 1997, 1998a, 1998b). Some findings of these reports are summarized below.

General findings:

- Roughly 5-6 percent of the high risk youth are gang members in a given year.

- There is a substantial involvement of girls in gangs. Roughly 20-25 percent of gang members are girls (this finding is consistent with other recent studies).

- Membership in gangs is a transient phenomenon. Contrary to some popular conceptions, gang members are not gang members for life and most gang members are members for only one year (this finding is also found in our companion project in Rochester).

- In comparison to other youth and other serious delinquents, during the time youth are active gang members they are exceedingly delinquent. Also, their delinquency is substantially higher while in a gang than either before joining or after leaving the gang. The social processes of the gang clearly facilitate or enhance the delinquent behavior of its members. (These findings are also replicated in Rochester.)

Personal Characteristics of Gang Members

In many respects, gang members are not different from other non-gang members. They are as likely as non-gang members

- . to attend school,
- . to hold jobs,
- . to be involved in school and community athletics and activities, and
- . to attend religious activities.

On important social and psychological variables, gang members are also very similar to non-gang members who are involved in serious delinquency. Yet, both of these groups are quite different from those youth who are not involved in serious delinquency. For example, gang members are not different from other serious delinquents on

- . their commitment to their delinquent friends,
- . their attitudes about the wrongfulness of delinquent behavior and drug use, or
- . the need to violate rules and laws to achieve desired goals.

Also, gang members, other serious delinquents and other minor or non-delinquent youth do not vary on

- . their feelings of self-esteem,
- . their feelings of social isolation, or
- . their feelings of opportunities for the future.

Gang members do differ from other youth, however, in some other important ways:

- . they are less likely to feel guilty for committing delinquent acts,
- . their teachers see and/or label them as being "bad" or "disturbed" kids,
- . they spend a far greater amount of time in unsupervised situations, spending two to three times as much time per week in unsupervised settings as other youth,
- . their family situations are often different from other youth. Fewer gang members come from homes with two parents and over 20 percent are in living situations where there is no parent figure.

These results challenge some of the common "wisdom" about gangs and also provide a note of caution about the potential success of some intervention efforts. It would appear that focusing on employment and athletic or other activities may not be particularly instrumental in reducing gang activity.

Gang Members Account for the majority of serious violent and serious property crimes. What proportion of the total amount of crime is attributable to gang members? Is the attention given to gangs in the news media, in public perception, and in research justified? An examination of the total number of serious crimes that are committed by those youth who are or will be gang members suggests that the attention given to gangs is clearly justified.

Counting the total number of offenses committed by the sample over the 1988-1992 period, the percentage of various types of crimes that can be attributed to the 14 percent of youth (18 percent of males, 9 percent of females) that were gang members during this period, is given in the following table. Quite obviously, gang members during this period account for the vast majority of all serious crime. Similar findings have been found in our companion project in Rochester and, and cross-nationally for groups that might be considered gangs, in our companion project in Bremen, Germany (Huizinga and Schumann, forthcoming).

Offense type	Percentage of Offenses Committed by Gang Members		
	Males	Females	Total
Serious Violence including gang fights	90%	84%	89%
Serious Violence excluding gang fights	74%	87%	79%
Serious Property	73%	51%	71%

Developmental Risk Factors for Gang Membership.

To examine developmental risk factors for gang membership, groups of individuals were identified who joined gangs at ages 13-14, at ages 15-16, and at ages 17-18. Other groups in the same birth cohorts as the gang members were also identified and classified as being serious offenders [frequency of serious offending over the prior two years of four or more offenses], or as non-serious offenders.

For each of the age groups, these three types of offending groups were compared on a variety of 36 different risk factors, including family, peer, school, neighborhood, and personal characteristics in the two years preceding the period in which the future gang members joined a gang. In general, it was found that the same risk factors were important at all three age periods. These are:

Prior delinquency level

- Minor offending
- Serious offending
- Problem use of alcohol and marijuana
- Arrests

Peers

- High level of involvement with delinquent peers
- Low level of involvement with conventional peers

School

- Truancy and suspension from school (separates individuals that are not serious offenders from serious offenders and gang members)

Personal

- Weak beliefs/attitudes about the wrongfulness of delinquent behavior, and
- Willingness to use excuses for delinquent behavior (neutralization)
- Psychological problems/Problem behavior (CBCL-Externalizing and a related problem behavior measure).

Most of the future gang members had multiple risk factors in the years preceding their joining a gang. Eighty nine percent of the future gang members had high scores on four or more risk factors in the years preceding gang membership, compared to 61% of non-gang serious offenders, and 31% of non-serious or non-delinquent youth. However, it should be noted that gang members make up only 10% of youth who score high on four or more risk factors.

It is also interesting that gang members and serious delinquents:

- Were generally attached to school and were doing as well in school as other youth;
- Were not strongly influenced by various family factors;
- Held conventional values;
- Had reasonable levels of self esteem/self efficacy, and
- Had feelings similar to other youth about opportunities for education, for future jobs, and general optimism about the future.

Peers, Gangs, and Co-offending.

The Influence of Peers. One of the strongest and most consistent findings from self-report studies of delinquency is the influence of delinquent peers on delinquent behavior. The relationship between delinquent peers and violence was illustrated using data from the-DYS. Youth aged 14-19 in 1991 were classified into four groups - those who had low, medium, and high involvement with delinquent friends, and those who were gang members. Not surprisingly, gang members have the highest average involvement with delinquent friends. The prevalence of involvement in serious assaults (aggravated assault, robbery, rape, gang fights) among these four groups is given in the following table.

Prevalence of serious assault	Level of Involvement with Delinquent Friends			
	Low	Medium	High	Gang
Males	2%	8%	20%	72%
Females	0%	3%	13%	72%
Total	1%	6%	17%	72%

The influence of delinquent peers is readily seen. For both males and females, as the level of involvement with delinquent peers increases, the proportion of youth engaged in assault increases substantially, and the majority of gang members report involvement in violent behavior.

The Role of Co-offending. While the relationship between delinquent peers and delinquent behavior is well documented in self-report studies, it has been suggested that this finding results from co-offending. That is, the relationship between delinquent peers and delinquency may simply reflect the fact that many youth commit offenses primarily with their peers. Thus, individuals engaged in delinquency have friends engaged in delinquency, simply because they do it together. If this is true, then peer groups may not be a particularly important causal factor in the development of delinquency. However, evidence from the DYS indicates that the delinquency of one's peers and co-offending are two separate things. Using information provided by the DYS youth respondents, the following table shows the relationship between the level of involvement with delinquent peers and group offending.

Average Percent of Offenses Committed in Groups by Level of Involvement with Delinquent Friends

Total Assaults	Level of Involvement with Delinquent Friends			
	Low	Medium	High	Gang
Males	100%	92%	77%	74%
Females	92%	100%	58%	55%
Total	91%	86%	70%	71%

For both males and females, as the level of involvement with delinquent peers increases, the percentage of offenses committed in groups decreases. Both those with high numbers of delinquent friends and gang members have the lowest percentage of group offenses and the highest proportion of solo offenses. In fact, in data not presented, for these two more serious groups of offenders, over half (about 60%) of their serious assaults are committed solo. Clearly, co-offending does not seem to provide an explanation for the relationship between delinquent peers and violent behavior. Having delinquent peers and co-offending are not the same thing.

Delinquent Peers and Future Delinquency. Not only do delinquent friends have a concurrent influence on delinquent behavior, but they may also influence future involvement in serious delinquency and gang membership. The percentage of males that have a high proportion of delinquent friends is given in the following table across the 1988-1991 period for three separate groups: those who initiated serious delinquent involvement in 1991, those who initiated gang membership in 1991, and other youth. (Given the low number of female gang members in the sample, estimates for females were unreliable and are not presented.) As can be seen, a majority of those initiating serious offending or becoming gang members in 1991 already had a large proportion of delinquent friends in 1988 and, for gang members, the percentage is slightly increasing over time.

Percent of Males with High Proportion of Delinquent Friends Over Time

1991-Status	1988	1989	1990	1991
Non- or Low Delinquency	37%	29%	32%	34%
Initiating Serious Delinquency	67%	71%	68%	73%
Initiating Gang Membership	66%	61%	70 %	87%

It is interesting to note that for those becoming gang members in 1991, their levels of group vs. solo offending did not change over the years, but held relatively constant at 74-75% group offenses and 25-26% solo offenses over the 1988-1991 period. While the majority of their offenses occur in a group context, they are more likely than other youth, even in the pre-gang years, to also commit solo offenses.

Some Comments about Peer Groups. These findings point out the robust relationship between having delinquent peers and both current and future violence. The consistency of these findings in the Program of Research and in other studies suggest that peer groups are an important target for prevention and intervention. Successful strategies that break up the social networks and cohesiveness of delinquent peer groups and gangs would be anticipated to have success in reducing future violence. In addition, early reduction of delinquent peer group involvement may reduce future gang involvement, and given the disproportionate volume of crime attributable to gang members, reduce future levels of crime. On the other hand, prevention and intervention strategies that bring delinquent or pre-delinquent youth together for education and training, recreational activities, or other reasons may not be as effective. Such programs increase the risk of maintaining or increasing the delinquent peer networks of the youth involved, and as illustrated above, this may have quite deleterious effects.

Risk and Protective Factors for Successful Adolescence.

Various reports of the DYS have examined risk and protective factors for delinquency, serious delinquency, and gang membership, as well as the influence of gang membership on these factors. These analyses have often revealed that it is the presence of several risk or protective factors in combination that are of greatest effect. As an example, an examination of some risk and protective factors for "successful adolescence" was conducted (Huizinga, 1997). Although several requirements could be specified for a successful adolescence, the criteria used included:

- Involvement in no more than two serious delinquencies;
- No more than two times having problems resulting from drug use;
- Being in age appropriate grade in school or having graduated from high school and not being a dropout;
- Consistently having good self esteem/self efficacy.

Somewhat distressing was the finding that by the fifth year of the survey, when the three oldest cohorts were 15-19, less than half (39%) of these youth would be considered a success by these criteria. And clearly if other criteria such as lack of mental health problems were added, the percentage of success cases would be even smaller.

The relation of various risk factors to adolescent success is given in the table on the next page, in which is tabulated the conditional probability of success given the presence or absence of each of the risk/protective factors. The page-long table is provided to show the breadth of variables related to adolescent success. A discriminant analysis revealed that the best predictors of success were peer delinquency (negatively related to success), having conventional friends, having a stable family and good parental monitoring, and having expectations or perceived opportunities for the future. These and additional analyses clearly indicated, however, that there was no one "silver bullet" or variable that leads to success. Rather there are combinations of risk and protective factors, and as the number of risk factors increases the probability of success decreases; and as the number of protective factors increases, the probability of success increases. This is illustrated in the subsequent table that provides the arithmetic difference between counts of the number of protective factors and the number of risk factors. As can be seen, if the number of risk factors exceeds the number of protective factors, there is a very small chance of a successful adolescence. And, the chance of a successful adolescence is not high until the number of protective factors far exceeds the number of risk factors.

These findings suggest that a lot of youth are not having a very successful adolescence, at least as defined here. They also suggest that interventions need to be multi-faceted and affect multiple risk and/or multiple protective factors. Focusing on just one factor probably will not be too successful.

Risk Factors for Successful Adolescence
 Conditional Probability of Success Given Presence or Absence of the Independent Variable

	Total Sample		Males		Females	
	Presence		Presence		Presence	
	Yes	No	Yes	No	Yes	No
Peer Variables						
Peer Delinquency	21	55 ***	19	56 ***	24	54 ***
Peer Drug Use	24	51 ***	18	49 ***	32	54 ***
Conventional Friends	53	22 ***	50	13 ***	56	30 ***
Problem Behavior						
Gang Member	11	42 ***	11	37 ***	13	46 **
Arrest (Arrest not ticket)	27	43 ***	27	38 **	27	47 **
School Problems (Truancy Suspension, Poor Grades)	28	58 ***	25	52 ***	31	64 ***
Family Variables						
Stable 2-parent Family	53	33 ***	53	26 ***	54	40 *
Number of Family Changes	28	43 ***	21	39 ***	36	47 ***
Family on Welfare	32	43 **	27	39 **	39	47 ns
Parental Monitoring	54	20 ***	51	19 ***	55	22 ***
Home Curfew Rules	53	22 ***	56	48 ns	68	52 **
Parental Discipline	41	36 ns	36	30 ns	47	41 ns
Family Crime	35	41 *	27	37 *	42	45 ns
Parental Drug Use	27	38 ns	11	34 *	40	43 ns
Resilience Variables						
Being Popular /well liked	52	33 ***	46	28 ***	60	38 ***
Above Avg. School Grades	58	30 ***	56	27 ***	59	34 ***
Significant Other (Someone to talk to)	41	25 ***	37	20 ***	45	32 ns
Aspirations, Expectations, & Optimism for the Future						
Educational Aspirations	49	27 ***	42	25 ***	57	30 ***
Educational Expectations	52	22 ***	46	18 ***	58	26 ***
Future Educational Strain	34	47 **	28	45 **	42	49 ns
General Opportunities	54	16 ***	50	13 ***	58	20 ***
Educational Optimism	50	13 ***	45	13 ***	55	15 ***
General Optimism	46	18 ***	40	18 ***	53	19 ***
Job Expectations	45	18 ***	40	16 ***	51	21 ***

*** Statistically significant at .001 level, ** at .010 level, * at .050 level

Successful Adolescence by Counts of Risk and Protective Factors

Number of Protective Factors Minus the Number of Risk Factors	Percent Success
-8	0
-7	0
-6	0
-5	0
-4	5
-3	12
-2	9
-1	12
0	13
1	19
2	26
3	32
4	43
5	43
6	61
7	58
8	85
9	87
10 or more	90

Multiple Etiological Pathways to Delinquency.

The idea that there are multiple pathways to delinquency is not new. The notion that the underlying causes leading to participation in delinquent behavior may be different for different types of individuals has been expressed many times. Some youth run away from home because of a poor family environment, some run away because they are pushed out from their homes, while still others run away for fun and excitement and others because they are "over-bonded" and over-protected at home. Similarly, it might be anticipated, and there is some empirical evidence, that some youth steal for different reasons, that some youth engage in violent behavior for different reasons, and that some youth use drugs for different reasons.

Although there is a history of interest in the notion of multiple etiological pathways leading to delinquency, there has been little major theoretical or empirical work exploring this possibility. Most theoretical presentations seem to suggest that the effects of the causal variables work more or less the same for everyone. These presentations rarely attempt to consider the possibility that there may be multiple types of offenders with quite different developmental sequences associated with the onset, maintenance, or termination of involvement in delinquent behavior. An important theoretical concern thus arises. Is there one underlying constellation of variables leading to delinquency that works more or less the same for everybody, or are there subsets of individuals, each subset having a common background and experience, for which the variables work differently? That is, are there different pathways to delinquent behavior?

A preliminary examination of the existence of multiple pathways to delinquency was made using the DYS (Huizinga, Esbensen, & Weiher, 1991). This examination used empirical numerical taxonomy or cluster analytic methods, but was not atheoretical, being structured in DYS data that reflect a general developmental model. The taxonomic approach employed three separate typologies of children and youth based on (1) their delinquent behavior at time 1, (2) a set of theoretical factors that include both personal and environmental characteristics (family and parent variables, youth attitudes and beliefs, impulsivity and hyperactivity, and the delinquent and conventional behavior of friends), and (3) their delinquent behavior at time 2. The cross tabulation of these typologies (delinquency time 1 X personal environment X delinquency at time 2) allows examination of potentially complex non-linear interactions in etiological variables as influences on the onset as well as on increases or decreases in delinquent behavior. The basic question addressed is whether there are relatively distinct types of etiological environments that lead to initiation or changes in delinquent involvement.

The cluster analyses identified several different child and youth "personal environments" that varied on nature of parenting, personal beliefs about delinquency, impulsivity/hyperactivity and friends' behavior. There were differences in the "personal environments" of these children and youth that were related to their level of delinquent behavior and to the year-to-year transitions between delinquency types. Of interest, in both the child and youth samples, personal environments appeared to provide both protective and risk factors. For example, having a personal environment that includes a positive home and conventional attitudes, appears to reduce delinquency involvement, while having a personal environment that involves delinquent friends and/or being impulsive leads to initiation, maintenance, or increases in delinquency.

Although there is a relationship between the personal and delinquency typologies and transitions between delinquency types, it is important that there were a substantial number of children and youth in each personal environment type that were classified as non-delinquent, low-level delinquent, and as higher-level delinquent. Delinquent involvement was not unique to any one personal environment type. There clearly are multiple paths leading to initiation and to increased involvement in delinquency.

Potential differences by sex in the child and youth samples, indicated that although there are some differences, in general, the same pattern of findings held for both genders. A substantial number of males and females are contained in each delinquency cluster. Although the personal environment typology shows some relationship to sex (boys more likely to be classified as impulsive/hyperactive and girls more likely to be classified as having a positive home and a conventional orientation) none of the differences is large, and the relationship of personal environment to transitions in delinquency over time is generally similar for both child and youth samples for both genders.

In summary, the findings indicated:

- That there is typological diversity among the child and youth samples in etiological or explanatory variables, and that there is a differential relationship between these types and involvement in delinquent behavior and over-time transitions in levels of involvement in delinquency;

- That those classified as delinquent, even those classified as very high delinquents, include individuals from most of the different personal environment types. Other variables not included in these preliminary analyses may account for why some of the children and youth in particular types engage in delinquency. However, it seems clear that individuals with quite different personal environments and prior levels of delinquency are later classified as delinquent. That is, there do appear to be multiple etiological paths to delinquency.

- The findings suggest that in both theory and practice it may be appropriate, and, perhaps, necessary to pay greater attention to typological diversity. Intervention programs need to be designed with this diversity in mind. Not all children or youth are the same or engage in delinquency for the same reasons, and identifying and treating different types of individuals is necessary. The same shoe in theory or practice does not fit everyone.

Developmental and Gender Differences in Delinquency and Explanatory Models.

Several reports of the DYS have examined developmental and gender differences in patterns of delinquency and victimization over the child through adolescent age span. And, given the wide range of individual, family, peer, school, and social context measures included in the DYS that are presumed causal factors or risk factors for delinquency, these reports have also examined developmental and gender differences in theoretical explanations for delinquency (Espiritu, 1998; Espiritu and Huizinga, 1996; Menard, 1996). It might be anticipated that the influence of various risk, protective, and predictive factors varies over different parts of the life span.

In general, for all types of delinquency and across the ages of 7-19, a larger proportion of males were involved in delinquent acts than were females. This finding across all age groups is especially evident for serious assaults and serious property offenses. Gender differences are less pronounced for minor assaults and minor property offenses, and small or negligible for status offenses.

There are also developmental patterns in the prevalence of offending. With increasing age, a greater proportion of males become involved in serious delinquency, while females generally show increases through age 15 and decline thereafter. These different patterns result in observed gender differences being amplified during the later teenage years.

Although the prevalence of delinquency is higher for males, it must be noted that delinquent females are not an absent group. A significant proportion of females, as children and as adolescents, are involved in all forms of delinquency, including serious assaults and serious property offenses.

Males and females were found to be more similar than different in models examining the influence of individual, family, school, and peer factors on delinquency. The influence of these factors was similar across genders during childhood and early adolescence, but significant gender differences occurred during middle adolescence and young adulthood.

The single most important predictor of delinquent behavior across both genders and all age groups is having friends who are engaged in delinquency. (A finding common in previous research.) A second major predictor is having school problems (cheating on tests, truancy, suspension). The presence of psychological problems was related to delinquency during

adolescence for both genders. However, the relationship was not absolute; many of the youth with psychological problems were not delinquent, and the strength of the relationship of psychological problems to concurrent delinquency was weak or negligible during childhood.

The various models examined indicated that our ability to explain delinquent involvement increases with age, being greatest during early and mid-adolescence. This may suggest that early delinquent involvement may be experimental behavior during childhood. However, it may also indicate that explanations for delinquent offending during childhood and late adolescent-young adulthood are in need of greater development. As recent interest on the very young offender and on the transition to adulthood is increasing, a reconsideration and focus on age-graded risk, protective, and explanatory factors for the child and young adult offender may be in order.

Intergenerational Transmission of Delinquency and Drug Use.

There has been recent interest in the apparent relationship of delinquency and drug use across generations. Using data from the "high-risk" sample of the Denver Youth Survey, the influence of past and current parental problem behavior (criminality and drug use) on the delinquency and drug use behavior of their children was explored (Huizinga, 1992).

Using a composite measure of parental problem behavior, a clear relationship between parental problem behavior and serious delinquency was found. As the seriousness of parental problem behavior increased, so did the likelihood of serious delinquency on the part of their children. About 11% of the children of parents with no problem behavior were frequently involved in serious delinquency, while 24% of the children of parents who report more serious problem behavior are involved in serious delinquency. Also among more serious delinquent offenders, 40% have parents with more serious problem behavior. It should be carefully noted, however, that over half the children of parents with serious problem behavior are not seriously delinquent. Having "problem parents" is a risk factor for but no sure indicator of delinquency.

Similar results also hold for minor delinquent offending, alcohol use, marijuana use, and other illicit drug use, although the strength of the relationships of parental problem behavior to these various adolescent behaviors is not as strong.

The relative importance of parents and peers. Of some importance, however, is the relative influence of parents and peers on these delinquent and drug using behaviors. Additional analyses examining this issue clearly indicated the overwhelming importance of peers. As long as a youth did not have a delinquent/drug using peer group, they were not particularly delinquent/drug using themselves, regardless of parental problem behavior. However, the combination of parental problem behavior coupled with delinquent/drug using peers resulted in the highest levels of involvement in delinquency and/or drug use.

Overall, there appears to be some relationship between parental criminality and drug use and the delinquency and drug use of their children. However, this influence is largely mitigated by the kind of friends that the children have. Finding ways to build and maintain prosocial peer networks thus appears to be a potentially viable strategy in developing protective factors for children and youth.

Neighborhoods and Problem Behavior.

The role of community factors in explaining delinquency has a long history, perhaps most notably through the work of social disorganization theorists who have identified community characteristics such as poverty, mobility, housing density, family structure, occupational status, and ethnic mix, as factors associated with higher rates of problem behavior. At its inception, the DYS had a major objective of investigating the impact of living in "high risk" neighborhoods on problem behavior, and extensive measurement of both neighborhood ecology and of variables that theoretically mediate between social disorganization factors and problem behavior. This emphasis on neighborhoods reflects the project's goal of identifying interventions at the neighborhood level that may reduce problem behavior. The DYS also acted as a "host" study for the initial study of neighborhood effects by the MacArthur Foundation Program on Successful Adolescence, and DYS staff were later involved in a city wide study of neighborhoods sponsored by the MacArthur Program. This role expanded the project's neighborhood measurement of potential mediating factors such as limited institutional resources, levels of community cohesion and informal social control, consensus on values and norms, which in turn impact more directly upon families and residents.

Several DYS reports and publications have provided interesting findings about neighborhoods (Elliott and Huizinga, 1990; Esbensen and Huizinga, 1990; Huizinga et al., 1990; Elliott et al., 1996).

- A first necessary question is - What is a neighborhood? Although study findings suggested a census block group was not inappropriate as a definition of a neighborhood, it was found that there was a good deal of individual variation in the definition of one's neighborhood and that the size and location of a neighborhood may vary on the type of question asked a resident, e.g. knowing your neighbors or having a grocery store in your neighborhood may result in reports of different sized neighborhoods from the same resident. Clearly some care is needed in defining "neighborhoods" in survey research.
- Although the DYS is based on a sample from only "high risk" neighborhoods, the study found that there are different types of "high risk" or "disorganized" neighborhoods. Much prior research has considered all socially disorganized areas as being the same, but DYS findings suggest greater attention is needed to the diversity of neighborhoods called disorganized. Although delinquency rates across different kinds of disorganized neighborhoods were not large, differences in youths' perceptions of the opportunities to succeed (economic and educational success) did vary by type of disorganized neighborhood. Also, the reasons for and locations of drug use were found to vary by type of disorganized neighborhood.
- At the macro-neighborhood level, the effects of social disorganization (poverty, mobility, single parent families, ethnic diversity) were mediated by neighborhood social control, social bonding, and normative consensus on values and behavior, as would be expected based on social disorganization theory.
- At the individual level, however, the explanation of problem behavior by neighborhood disorganization and mediating variables is not very accurate, and this has been found in the DYS sample and in multilevel hierarchical models involving the city wide sample as well. This finding of good explanation for macro neighborhood rates of problem behavior but poor explanation of the problem behavior of individuals on the basis of these neighborhood variables is not unique to the DYS. Clearly, further work is needed to understand how neighborhoods affect individual behavior, and this issue continues to be examined within the DYS.

The Impact of Arrest.

The impact of arrest on future behavior can be viewed from various theoretical orientations, including deterrence theory, labeling and the amplification of deviance, and social learning theory. From these views the impact of arrest can be seen as (1) a deterrent to future delinquency, (2) an event that facilitates or results in increased levels of delinquent involvement, or (3) an event that may either increase or decrease future delinquent involvement. The latter depending on the nature of warning and punishment provided by the juvenile justice system and the rewards and reinforcements provided by family, peers, and community in which the individual lives. In the context that may follow arrest, an arrestee may find support and encouragement and learn additional delinquent orientations and skills by justice system enforced differential association with other officially identified delinquent youth.

These theoretical views are not without political and practical consequences. A "labelling" perspective may lead to a policy of "non-intervention" for most youth and development of diversion programs, as occurred in the 1970's. A deterrence perspective may lead to a "get-tough and lock them up" strategy, as experienced in the 1980's and 90's. A learning perspective may say neither extreme is correct, but rather the outcome of arrest depends on the individual and the nature of the reinforcements provided by the justice system and environment in which the individual lives. In this latter case, the effect of arrest may be quite different for different types of youth and different individualized treatments necessary.

Several DYS reports have examined factors surrounding arrest and the influence of arrest on subsequent delinquent behavior. (Esbensen, Thornberry, and Huizinga, 1991; Huizinga and Esbensen, 1992; Huizinga, Esbensen and Weiher, 1996). Included are examinations of who gets arrested - the demographic characteristics and prior delinquent behavior of arrestees - and the impact of arrest on future delinquency. Several summary statements of the findings can be made.

- Many high risk youth are arrested and have contact with the juvenile justice system. In the DYS, over half (53%) of the youth aged 11-15 in 1987 had an arrest sometime in the next five years. Both males and females have high arrest rates, 64% of males and 41% of females, so there is ample reason for concern about both genders in the juvenile justice system.

- The age distribution of arrestees can be seen in the following table. As might be anticipated, very few youth under the age of 10 are arrested for a delinquent offense. Over the 11-18 year old ages, there is a steady increase in the percentage of youth that is arrested, and this pattern is observed for both genders. At the older ages, slightly over one-third of the males and almost one-fifth of females are arrested.

	Percent of Age Group Arrested					
	Age					
	7-8	9-10	11-12	13-14	15-16	17-18
Total	1.6	3.0	6.7	17.9	28.0	28.0
Males	2.9	3.9	8.7	21.7	38.1	37.3
Females	0.0	1.9	4.6	13.5	17.2	18.6

- The presenting offense of an arrest is not a good indicator of offending behavior. For example, in a given year, about one third of active serious offenders are arrested, and of those arrested most are arrested for a status or minor offense. This is illustrated in the accompanying table.

Arrests Among Different Types of Offenders

Type of offender	Most Serious Arrest			
	None	Status Offense	Minor Offense	Serious Offense
Non-Offender	0%	0%	0%	0%
Status Offender	88%	8%	4%	0%
Minor Offender	84%	7%	8%	1%
Serious Offender	68%	9%	15%	8%
Gang Member	39%	15%	15%	31%

Although the relationship between seriousness of offender type and seriousness of presenting offense can be seen, serious offenders are most likely to be arrested for a status or minor offense, and regardless of offender type, the majority of that type are not arrested. Thus the delinquent behavior of individuals does not appear to be well described by their arrests. This is not a particularly unusual observation, and it provides the major impetus for the development of self-report measures in the study of crime and delinquency.

- For many youth, arrest and juvenile justice system processing does not seem to have the desired effect. The delinquent behavior in the year following arrest of about three-fourths of first time arrestees was no different or was higher than that of a matched control who was not arrested. In fact, in only 8% of the cases was the serious offending rate of the arrested juvenile less than the matched control. Being arrested does appear to be a very strong deterrent against future delinquent behavior.

Help-seeking for Psychological and Behavioral Problems Including Delinquency.

Several DYS reports have examined the help-seeking of parents for their children with mental health, delinquency, and drug use problems, as well as help-seeking for the parents and other family members (Huizinga, Bashinski, and Lizotte, 1991; Espiritu, 1996; Huizinga, 1998). Data about frequency of help-seeking, source of help, and satisfaction with help obtained has been collected throughout the life of the DYS.

The most frequently given reasons for seeking help for either children or adolescents are for school and behavioral problems, followed by family and emotional problems. A greater proportion of parents of delinquent adolescents have sought help than have parents of non-delinquents. However, only a small proportion of parents of delinquent youth, roughly 30 percent for adolescents and 20 percent for children, report seeking help for their children. For adolescents, the prevalence of help-seeking increases with increasing seriousness of delinquency and with increasing levels of psychological problems.

In general for both youth and child samples, the most common place or service provider where parents sought help were schools, followed, in turn, by professionals (MD's, psychiatrists, counselors) in mental health clinics or in private practice, and then by friends and relatives. Parents of adolescents and children with behavioral problems or in trouble with the law and not school problems, still listed the school as the most frequent place where help for their children was sought. There is thus a suggestion that schools may be seen as a central service provider for many problems outside usual school issues.

A majority (about two-thirds) of parents that sought help reported that they received a great deal of help from the various resources used. However, an examination was also made of whether the youth and children for whom help had been sought changed their level of delinquent behavior in the following year in comparison to youth and children for whom no help was sought. These analyses indicated that, controlling for original year delinquency level, there were no statistically significant differences in the subsequent year delinquency classification between those for whom help was sought and other youth and children. The magnitude of the differences suggests, if anything, that those for whom help was sought had equal if not higher delinquency levels in the following year than other youth and children. This does not mean that help-seeking was not beneficial, since parents who sought help may have been seeking help for the most troublesome youth. Neither does it demonstrate, however, that the help sought has been, in general, particularly successful.

Two observations might be drawn from these findings. First, the majority of delinquent and serious delinquent youth have not had help sought for their problem behavior. Given a presumed long developmental history of these problem behaviors, there is the opportunity for the earlier provision of services that might reduce this later behavior. Ongoing work in the DYS is examining why services are not more frequently used. Second, many parents approached schools for assistance with their child's non-school problem behavior as well as other problems. Although schools may not be prepared and may lack the resources to help parents with these problems, perhaps schools could be funded to have resources or provide referrals for concerned parents.

Some Final Comments and Plans for the Future

This report was titled "Some Not So Boring Findings From the Denver Youth Survey", and we hope that a reader has found some of the findings reported interesting or informative.

In many ways, the DYS is only now on the threshold of being able to conduct the research originally envisioned. With the collection of data from the 1999 survey and using the accelerated longitudinal design, the DYS will have prospective longitudinal data spanning the ages of 7 through 26. The project will thus be in a position to begin the research analyses originally conceived some 14 years ago.

Social scientists and others are now in general agreement that one of the most appropriate ways to obtain a better understanding of delinquency and drug use is to conduct longitudinal studies that follow the same children and youth over extended and critical periods of their lives. By doing so we can more accurately see the factors that precede and lead to delinquency and drug use and identify the proper targets and timing for intervention programs. The causes of delinquency and drug use may not be the same for nine year olds as for sixteen year olds, or be the same for sixteen year olds as for twenty-three year olds, but we have insufficient knowledge about the causes of delinquency for children, adolescents, or young adults. Nor do we know very much about the conditions and life experiences that lead some children to pass through a successful adolescence and become successful adults, while others do not. That is why it is important to follow the same subjects over major segments of their lives to better understand the developmental pathways and salient factors that can be affected to increase the probability of successful lives and reduce serious delinquency and drug use.

We look forward to the challenge of the life-course developmental research that lies ahead of us.

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