



OJJDP

Shay Bilchik, Administrator

October 1998

JUVENILE JUSTICE BULLETIN

Gang Membership, Delinquent Peers, and Delinquent Behavior



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The proliferation of youth gangs since 1980 has fueled the public's fear and magnified possible misconceptions about youth gangs. To address the mounting concern about youth gangs, the Office of Juvenile Justice and Delinquency Prevention's (OJJDP's) Youth Gang Series delves into many of the key issues related to youth gangs. The series considers issues such as gang migration, gang growth, female involvement with gangs, homicide, drugs and violence, and the needs of communities and youth who live in the presence of youth gangs.

Gang membership intensifies delinquent behavior. From the earliest to the most recent investigations, criminologists have consistently found that, when compared with youth who do not belong to gangs, gang members are far more involved in delinquency, especially serious and violent delinquency. Associating with delinquent peers also contributes to delinquency. Indeed, peer delinquency is one of the strongest predictors of delinquency that

researchers have identified. However, the effect of belonging to a gang has not been separated from the effect of simply associating with delinquent peers.

Some gang researchers have suggested that gang membership constitutes a qualitatively different experience than merely associating with delinquent peer groups. For example, Moore states that "...gangs are no longer just at the rowdy end of the continuum of local adolescent groups—they are now really outside that continuum" (1991:132). Klein makes a similar point: "...street gangs are something special, something qualitatively different from other groups and from other categories of law breakers" (1995:197). Although these and other researchers view gangs as "qualitatively different," until recently no study had attempted to disentangle the influence of gang membership from the effects of delinquent peers on involvement in delinquency.

In 1997, studies conducted by the Seattle Social Development Project and the Rochester Youth Development Study with funding from OJJDP both answered the question, "Does gang membership contribute to delinquency above and beyond the influence of associating with

From the Administrator

Youth gangs are on the rise. Today they threaten virtually every major city, many small communities, and even rural areas. The Office of Juvenile Justice and Delinquency Prevention (OJJDP) is committed to helping communities overcome this problem, and an essential first step is understanding the factors that contribute to the growth of youth gangs and the relationship of gang membership to delinquency.

Gang Membership, Delinquent Peers, and Delinquent Behavior describes the findings of OJJDP-funded longitudinal research involving juveniles in Seattle, WA, and Rochester, NY. This research addressed a fundamental question, "Does gang membership contribute to delinquency above and beyond the influence of associating with delinquent peers?" The answer was yes in both cities, despite significant differences in demographics.

After describing study methods and results, the authors summarize the implications of their findings. One crucial implication is that communities developing comprehensive approaches to reducing juvenile violence and victimization must consider the role of youth gangs and the necessity of including youth gang prevention, intervention, and suppression components.

Shay Bilchik
Administrator

The results from the Seattle Social Development Project reported in this Bulletin were originally published in *Criminology* 36(1): 93-115, 1998, American Society of Criminology.

delinquent peers?" Findings from the two studies are presented in this Bulletin.

Seattle Social Development Project

Project Overview

The Seattle Social Development Project (SSDP) is a longitudinal study guided by the social development model (Catalano and Hawkins, 1996), which incorporates information on how protective and risk factors work together to enhance both positive and antisocial development. The model builds on differential association theory (Cressey, 1953; Matsueda, 1988), social learning theory (Bandura, 1977), and social control theory (Hirschi, 1969). The model hypothesizes that socialization follows the same processes whether it produces prosocial or problem behavior and suggests that development of prosocial or antisocial behavior is influenced by the degree of involvement and interaction with prosocial or delinquent peers (differential association), the skills required and the costs and rewards for that interaction (social learning), and the extent to which the youth subsequently

become bonded to prosocial or antisocial individuals (social control).

The study has followed a multiethnic urban sample of 808 children since they entered the fifth grade in 1985. The sample includes nearly equal numbers of males ($n=412$) and females ($n=396$). Slightly fewer than half (46 percent) identified themselves as European-Americans. African-Americans (24 percent) and Asian-Americans (21 percent) also made up substantial portions of the sample. The remaining youth were Native-American (6 percent) or of other ethnic groups (3 percent). Forty-six percent of respondents' parents reported a maximum family income under \$20,000 per year in 1985, and more than half of the sample (52 percent) participated in the National School Lunch/School Breakfast Program at some point in the fifth through seventh grades, indicating that they came from families in poverty. The analyses presented in this Bulletin are based on surveys conducted when the youth were age 13 ($n=654$), 14 ($n=778$), and 15 ($n=781$). Sample sizes vary for each assessment year based on the number of respondents who completed the interview in that year. Nonparticipation

was not related to gender, lifetime use of tobacco or alcohol, or participation in delinquency by age 10, nor was it consistently related to ethnicity. Data were obtained from the youth and from King County court records.

Methods

To determine whether gang membership contributes to delinquency above and beyond associating with delinquent peers, the SSDP sample was divided into the following three groups:

- ◆ **Gang members:** Respondents who self-reported membership in a gang in the past year and who identified the gang by name.
- ◆ **Youth with delinquent peers:** Respondents who were not members of a gang in the survey year but who reported that at least two of their three best friends had been arrested or done things that could get them in trouble with the police.
- ◆ **Youth with nondelinquent peers:** Respondents who were not members of a gang in the survey year and who

Table 1: Classification of Individual Offense Rates (Seattle Social Development Project)

Category	Offense or Frequency
Self-reported IOR's*	
Violent	Hitting teacher, hitting to hurt, picking a fight, using force to get things, throwing objects
Nonviolent	Taking something worth more than \$50, taking something worth between \$5 and \$50, breaking into a house, destroying property, writing graffiti, selling illegal drugs
General	Combined self-reported violent and nonviolent offenses and frequency of being arrested and in trouble with the police
Court-recorded IOR's	
Violent	Simple assault, aggravated assault, hit and run, murder, threat, robbery, sex offense, disorderly conduct, using a weapon
Nonviolent	Arson, reckless arson, burglary, larceny, motor vehicle theft, trespassing, prostitution, stolen property, selling illegal drugs
General	Combined court-recorded violent and nonviolent offenses
Self-reported rates of drug selling and substance use	
Drug selling	Past-year frequency
Alcohol use	Past-month frequency
Binge drinking	Past-month incidence of drinking five or more drinks in a row
Marijuana use	Past-year frequency
Illicit drug use	Past-year frequency of using crack, other forms of cocaine, amphetamines, tranquilizers, sedatives, narcotics, psychedelics

*Individual offense rates.

reported that only one or none of their three best friends had been arrested or done things that could get them in trouble with the police.

These three groups were compared according to various measures of delinquency and substance use to determine whether there were significant differences in their rates of offending. The respondent's individual offense rate (IOR), which is the actual frequency of committing the offenses listed in table 1, was used as the measure of delinquency and substance use.

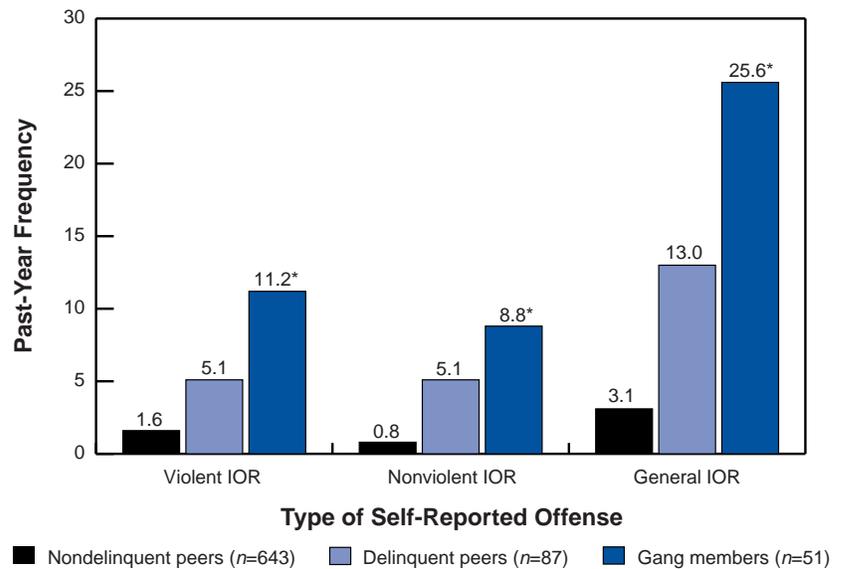
Results

The analysis was done cross-sectionally (comparing age 15 group status with age 15 behaviors) and longitudinally (comparing age 14 group status with age 15 behaviors). The cross-sectional results at age 15 are presented in figures 1, 2, and 3. Results from the longitudinal comparison are similar to the cross-sectional results and therefore are not presented. Figure 1 presents the mean, or average, IOR's for self-reported delinquency during the past year; figure 2 presents the mean IOR's for court-recorded delinquency. Figure 3 presents annual rates for measures of self-reported drug selling and substance use. An asterisk has been placed next to the variables for which mean delinquency rates were significantly higher for gang members than for youth with delinquent peers.

A consistent pattern of offending was found across the 3 status groups for all 11 measures of delinquency and substance use. On all measures of delinquency and substance use, rates of offending were lowest for youth with nondelinquent peers, higher for youth with delinquent peers, and highest for gang members. For example, as shown in figure 1, youth with nondelinquent peers committed an average of 1.6 self-reported acts of violent delinquency in the past year, while youth with delinquent peers committed an average of 5.1 violent acts and gang members committed more than 11 violent acts.

For this analysis, *t*-tests were conducted to determine whether observed differences in offending between gang members and nongang youth with delinquent peers were statistically significant. Gang members had significantly higher offense rates on 9 of the 11 measures of delinquency and substance use—that is, at age 15, gang members committed significantly more of the following acts than nongang youth with delinquent peers (as indicated by an asterisk in figures 1, 2, and 3):

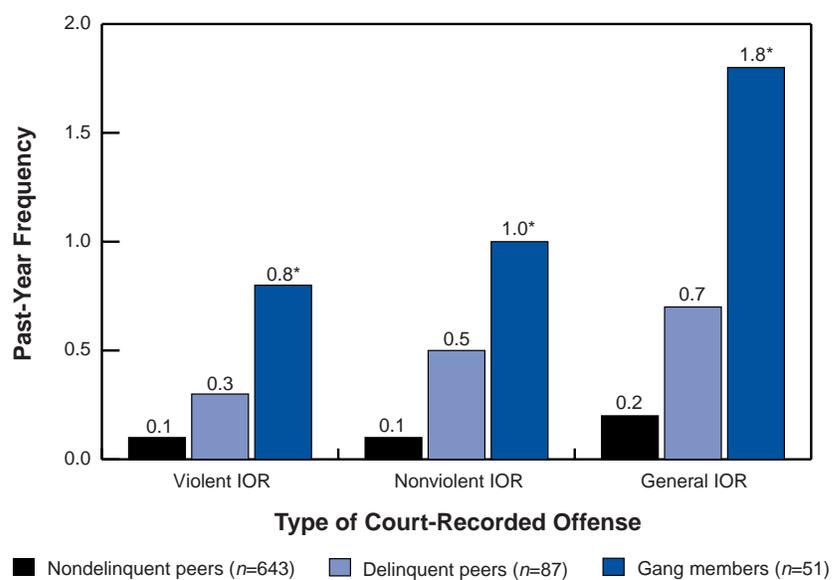
Figure 1: Self-Reported Individual Offense Rates at Age 15 (Seattle Social Development Project)



*An asterisk indicates that the rates for gang members are significantly higher than those for youth with delinquent peers (*t*-test, $p < 0.05$).

Note: IOR, individual offense rate.

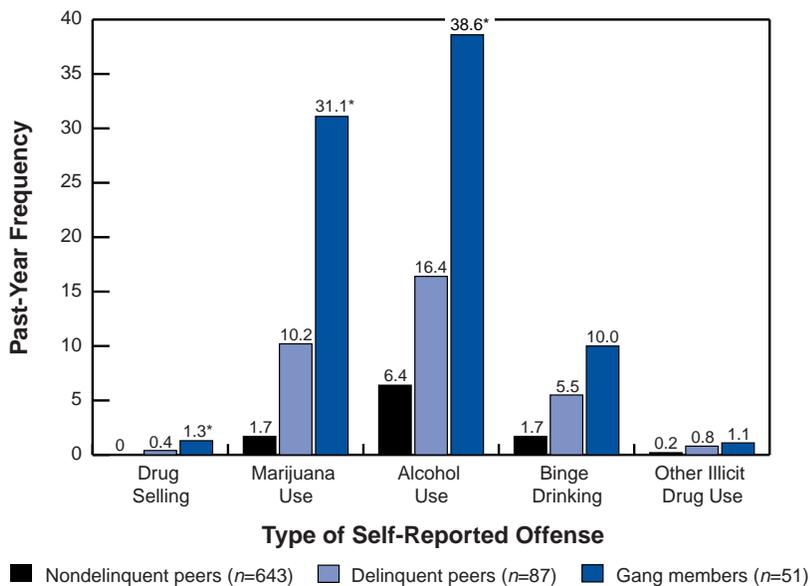
Figure 2: Court-Recorded Individual Offense Rates at Age 15 (Seattle Social Development Project)



*An asterisk indicates that the rates for gang members are significantly higher than those for youth with delinquent peers (*t*-test, $p < 0.05$).

Note: IOR, individual offense rate.

Figure 3: Self-Reported Rates of Drug Selling and Substance Use at Age 15 (Seattle Social Development Project)



*An asterisk indicates that the rates for gang members are significantly higher than those for youth with delinquent peers (*t*-test, $p < 0.05$).

- ◆ Self-reported acts of violent, nonviolent, and general delinquency.
- ◆ Court-recorded acts of violent, nonviolent, and general delinquency.
- ◆ Self-reported drug selling, marijuana use, and alcohol use.

In summary, gang membership was associated with increased participation in various acts of delinquency and substance use, even in comparison with youth who associate with delinquent peers. It would thus appear that gang membership does contribute to delinquency over and above associating with delinquent peers. However, it is also possible that delinquency rates are higher among gang members because they also associate with delinquent peers. Therefore, the observed effect of gang membership may actually derive from the simple fact that gang members have a lot of delinquent friends.

To rule out this possibility, a statistical technique called structural equation modeling was used; this technique tests causal relationships among a variety of variables at the same time. It was used to examine the impact of gang membership on delinquency after controlling for association with delinquent peers. Structural equation modeling provides four kinds of information:

- ◆ The path coefficient, an estimate of the strength of the causal relationship, that can range from -1 to $+1$.
- ◆ R^2 , the amount of a given behavior that is explained by prior variables in the model. R^2 can range from 0 to 1.
- ◆ An acknowledgment that factors other than those included in the model can contribute to the behavior (called the “error” and not usually quantified).
- ◆ A measure of the overall fit of the model that can range from 0 to 1.

Specifically, the effect of gang membership on delinquency at age 15 was examined, controlling for association with delinquent friends at ages 14 and 15 and for delinquency at age 13. If gang membership provides a unique and strong contribution to delinquency above and beyond that made by associating with delinquent peers and previous delinquency, then the path coefficients from gang membership to delinquency should be significant in the causal models presented in figures 4 and 5.

The results revealed that gang membership contributed to delinquency above and beyond associating with delinquent peers and previous delinquent behavior. As shown in figure 4, the paths from gang

membership at age 14 and at age 15 to self-reported general delinquency at age 15 were significant, even when associating with delinquent friends and previous delinquency were included in the model (path coefficients of 0.18 and 0.22, respectively, $p < 0.01$). Similar patterns were found for court-recorded delinquency, as shown in figure 5.

Overall, SSDP respondents who were gang members always had the highest rates of delinquency and substance use. For 9 of the 11 delinquency and substance use measures, rates for gang members were significantly higher than those for youth with delinquent peers. In addition, structural equation modeling revealed that gang membership contributed to delinquency even after the effects of delinquent peers and previous delinquency had been accounted for.¹

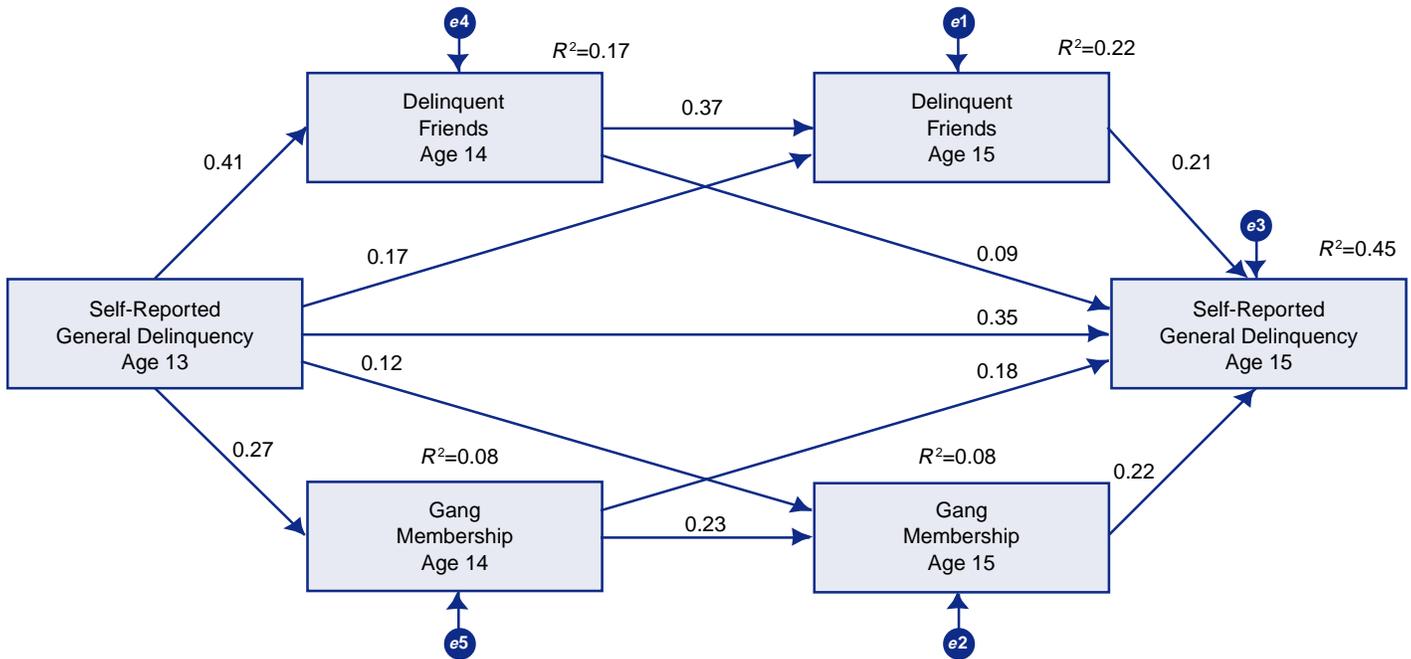
Rochester Youth Development Study

Project Overview

The Rochester Youth Development Study (RYDS) is a longitudinal study of the development of delinquency and drug use, guided by interactional theory (Thornberry, 1987) and social network theory (Krohn, 1986). According to interactional theory, delinquency comes about because of the pattern of interactions between the individual and his or her environment. As bonds to conventional society (e.g., parents and teachers) weaken, social control is reduced and delinquency becomes more likely. For prolonged serious delinquency to emerge, however, association with other delinquent youth and the formation of delinquent beliefs are required. Once these delinquent patterns emerge, they have feedback effects, further eroding the person’s bond to conventional society. These mutually reinforcing effects create trajectories toward increasing levels of involvement in delinquency. Social network theory is a complementary perspective that focuses on the impact of the social groups, or networks, in which the person is involved. All networks control the behavior of their members and channel that behavior toward consistency with group norms. Prosocial networks (e.g., Boy Scouts) increase the likelihood of conforming behavior; antisocial networks (e.g.,

¹ A complete description of these analyses can be found in Battin et al. (1998).

Figure 4: Structural Equation Model: Self-Reported General Delinquency as Outcome Measure (Seattle Social Development Project)



Note: Path coefficients are indicated above the directional arrows. All path coefficients are significant at $p \leq 0.05$, with the exception of those marked by an asterisk. Values for R^2 (explained variance) for each predicted variable are noted above the boxes, as are the errors (e). Goodness of fit (GFI) measures indicate acceptably fitting models (GFI=0.975).

gangs) increase the likelihood of antisocial behavior. The more pervasive the network is in a person's life, the more powerful the effect it has on his or her behavior.

The Rochester study has followed a sample of 1,000 urban adolescents initially selected in 1988, when they were in either the seventh or eighth grade in the Rochester, NY, public schools. They have been followed until the present and are now 22 years of age on average. The sample is 75 percent male and 25 percent female and is composed primarily of minority group members—68 percent African-American, 17 percent Hispanic (mostly Puerto Rican), and 15 percent white. Although the sample overselected youth at elevated risk for serious delinquency, the results presented here are statistically adjusted to represent the entire population of seventh and eighth grade students in the Rochester public schools.

Methods

Each student was interviewed at 6-month intervals over the course of the middle school and high school years. The data analyzed in this Bulletin were taken from interviews covering ages 14 and 15

for the subjects. Age 15 is near the peak age of involvement for both gang membership and delinquency (Loeber and Farrington, 1998).

An analysis strategy similar to that employed with the SSDP data was used to examine the RYDS data. First, the sample was divided into respondents who indicated that they had been a member of a youth gang during the 6 months since the previous interview and those who were not gang members. Second, respondents who were not gang members during this period were divided into quartile groupings based on their responses to the delinquent peer associations scale. Using a 4-point response scale ranging from "none of them" to "most of them," each respondent reported how many of his or her peers were involved in eight delinquent activities. The lowest quartile represents the respondents who had the fewest delinquent peers; the highest quartile represents those who had the most delinquent peers. The division of nonmembers into quartiles allows for a much finer comparison of gang members with nonmembers since the nonmembers in the highest quartile are very heavily involved with

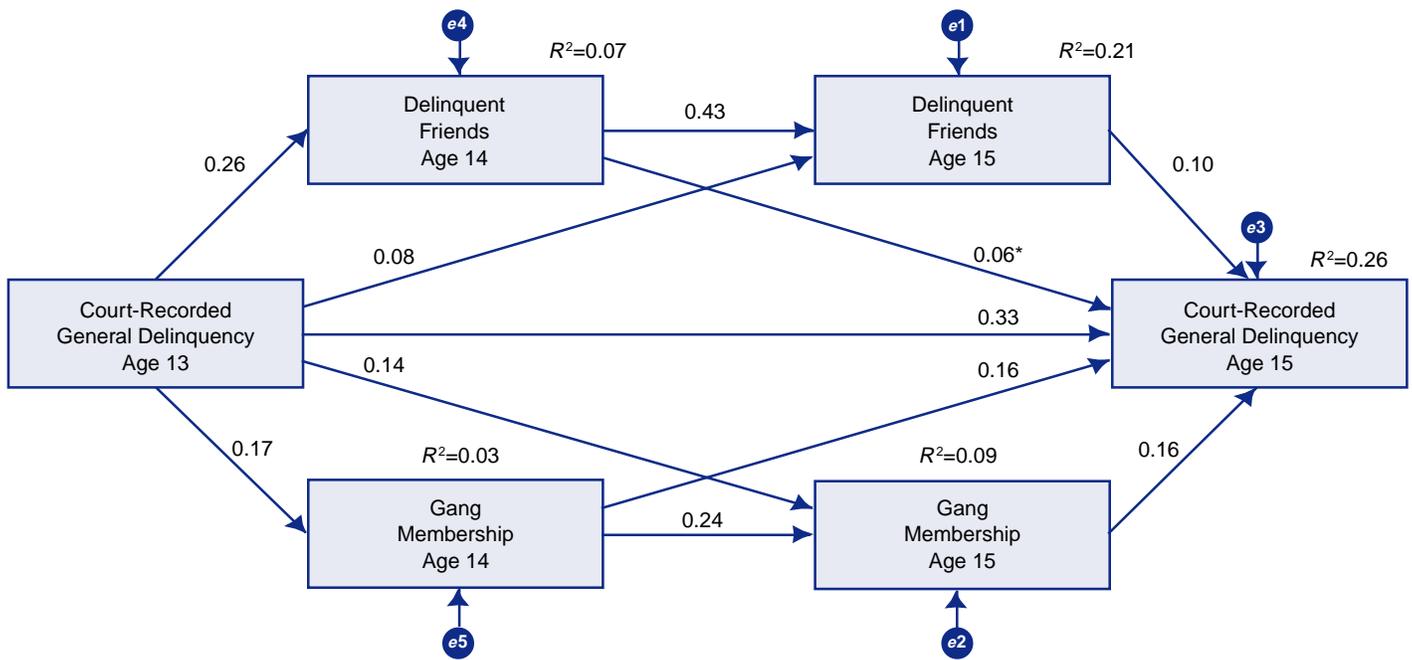
delinquent peers. The groups were compared in terms of the frequency with which they self-reported general delinquency, violent delinquency, drug selling, and drug use (see table 2). Comparisons were made separately for males and for females (see figures 6 and 7).

Results

Figure 6 shows the comparison of male gang members with nonmembers in terms of the frequency of general delinquency, violent delinquency, drug selling, and drug use. Among those who were not gang members, offense rates for all four types of offenses were higher for the respondents who scored higher on the delinquent peer associations scale. More important, however, was the finding that respondents who were gang members always had the highest rates of offending.

The results of the comparison of offense rates of gang members and nonmembers with delinquent peers in Rochester provide a strikingly similar picture to those obtained with the Seattle data. Although associating with delinquent peers is related to offense rates, being a member of a gang facilitates delinquency

Figure 5: Structural Equation Model: Court-Recorded General Delinquency as Outcome Measure (Seattle Social Development Project)



Note: Path coefficients are indicated above the directional arrows. All path coefficients are significant at $p \leq 0.05$, with the exception of those marked by an asterisk. Values for R^2 (explained variance) for each predicted variable are noted above the boxes, as are the errors (e). Goodness of fit (GFI) measures indicate acceptably fitting models (GFI=0.963).

over and above that effect. For violent delinquency among male respondents, for example, there is an increase in the level of offending across the four categories of nonmembers—from 0.2 for those with few delinquent peers to 2.2 for those who have the highest level of association with delinquent peers. However, the mean for gang members (4.9) is more than twice as high. This rate is significantly different from the rate for nonmembers in the highest quartile of delinquent peers. This finding is particularly important because nonmembers in the highest quartile of involvement with delinquent peers associate with delinquent peers as much as gang members do. This pattern is also observed for general delinquency, drug selling, and drug use.

Figure 7 examines the same relationships for female respondents. Female involvement in delinquency and drugs was lower than male involvement; as a result, the patterns are somewhat less consistent, especially for nonmembers. The most important comparison, however, is between female gang members and nonmembers in the highest quartile. In all cases, gang members reported significantly

Table 2: Self-Reported Delinquency Indices (Rochester Youth Development Study)

Index	Definition
General delinquency	32-item index of past-year frequency of offenses, ranging from running away from home to assault with a weapon (violent delinquency items are also included in general delinquency)
Violent delinquency	Past-year frequency of assault with a weapon, assault without a weapon, throwing objects at people, robbery, rape
Drug selling	Past-year frequency of selling marijuana and hard drugs
Drug use	Past-year frequency of use of marijuana, inhalants, LSD, cocaine, crack, heroin, phencyclidine (angel dust), tranquilizers, downers, uppers

higher involvement as compared with nonmembers. There is a particularly striking effect for drug selling—among female respondents, only gang members sold drugs.

As with the earlier Seattle analysis, this analysis does not control for the impact of association with delinquent peers. The earlier analysis of the Seattle data controlled for the effect of delinquent peers in

examining the impact of gang membership on violent delinquency. To provide a more rigorous examination of whether gang membership has an effect on offense rates, the RYDS controlled for five additional risk factors that covered the domains of family (poverty level and parental supervision), school, stress, and prior delinquency. These additional variables test the possibility that

rates of violence are high for gang members not because of a gang effect, but because of the accumulation of risk in their backgrounds. That is, it may not be gang membership that brings about the higher rates of violence; it may instead be other risk factors that are related to gang membership and to delinquency. The variables that were held constant here include family poverty level, parental supervision, commitment to school, negative life events, previous involvement in violence, and association with delinquent peers. The risk factors were measured at the interview prior to the year of gang membership. The analysis is limited to males because of the relatively small number of female gang members.

The results in table 3 indicate that even when the variables listed above are held constant, gang membership still exerts a strong impact on the incidence of violent behavior. The standardized coefficient for gang membership is 0.28, approximately the same magnitude of coefficients observed for previous violence (0.27). Indeed, gang membership has the greatest impact on violent behavior of any of the variables included in the equation.²

² More detailed information on these results can be found in Thornberry (1998) and Krohn and Thornberry (in press). In the latter report, more refined measures of highly delinquent peer groups (e.g., using deciles rather than quartiles) generate results a little more muted than those reported here.

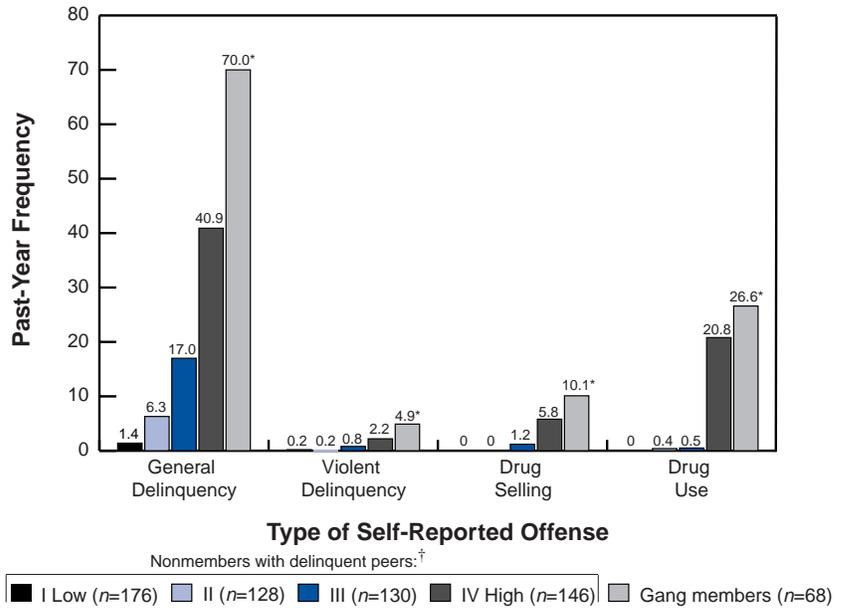
Table 3: Impact of Gang Membership and Various Risk Factors on the Incidence of Self-Reported Violence, Males Only (Rochester Youth Development Study)

Risk Factor	Self-Reported Violence at Year 2 (Logged)*
Gang membership	0.28 [†]
Family poverty level	-0.06 [†]
Parental supervision	-0.04
Commitment to school	-0.02
Negative life events	0.12 [†]
Prior violence	0.27 [†]
Delinquent peers	0.06
$R^2=0.34$	
$n=484$	

*Standardized ordinary least squares regression coefficients.

[†] $p < 0.05$

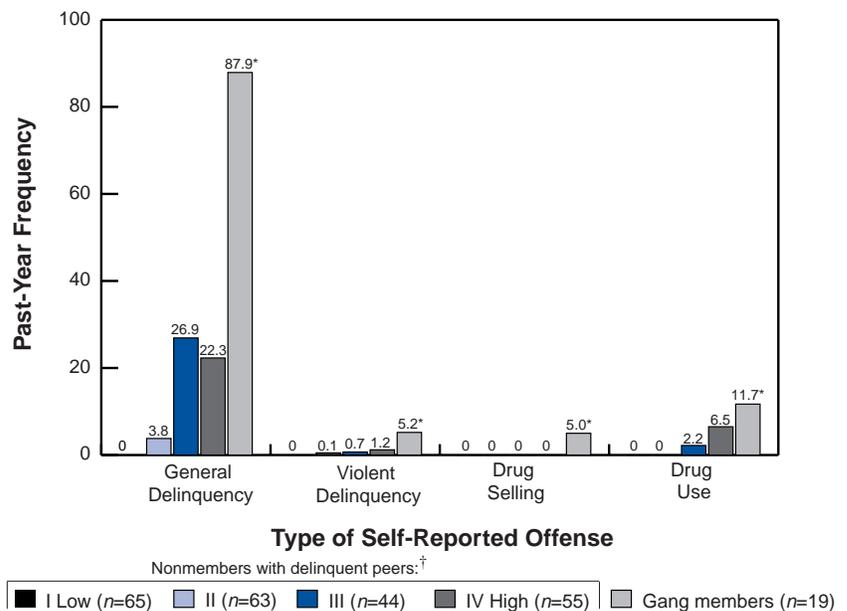
Figure 6: Self-Reported Delinquency Rates at Age 15 for Male Gang Members and Nonmembers With Delinquent Peers (Rochester Youth Development Study)



*An asterisk indicates that the rates for gang members are significantly higher than those for nonmembers in the highest quartile of association with delinquent peers (*t*-tests, $p < 0.05$).

[†]Nonmembers are divided into quartiles of association with delinquent peers.

Figure 7: Self-Reported Delinquency Rates at Age 15 for Female Gang Members and Nonmembers With Delinquent Peers (Rochester Youth Development Study)



*An asterisk indicates that the rates for gang members are significantly higher than those for nonmembers in the highest quartile of association with delinquent peers (*t*-tests, $p < 0.05$).

[†]Nonmembers are divided into quartiles of association with delinquent peers.

Program of Research on the Causes and Correlates of Delinquency

In an effort to learn more about the root causes of juvenile delinquency and other problem behaviors, the Office of Juvenile Justice and Delinquency Prevention (OJJDP) is sponsoring the Program of Research on the Causes and Correlates of Delinquency. Serious delinquency and drug use are major problems in American society. Past research indicates that many variables correlate with delinquency and that many factors tend to increase the risk of later delinquent behavior. Among these risk factors are birth trauma, child abuse and neglect, ineffective parental discipline, family disruptions, conduct disorder and hyperactivity in children, school failure, learning disabilities, negative peer influences, limited employment opportunities, inadequate housing, and residence in high-crime neighborhoods.

Overall, research findings support the conclusion that no single cause accounts for all delinquency and that no single pathway leads to a life of crime. To date, however, research has not clearly identified all the causal pathways that lead to delinquency or the factors that cause different individuals to take different paths. There is general agreement among social scientists and policymakers that longitudinal studies are the best way to gain information on the causes of delinquency. This type of investigation involves repeated contacts with the same individuals so that patterns of development can be studied. The strength of the longitudinal design is that it permits researchers to sort out which factors precede changes in offending, to predict such changes, and to do so independent of other factors. With the aid of repeated measures, it is possible to identify pathways to delinquency, each with unique causal

factors that, like delinquency itself, may change with time. Successfully accomplishing this will provide the information needed to develop truly effective intervention programs.

OJJDP has been in the forefront of supporting basic, long-term research that provides the hard empirical information needed to design effective action programs. The Program of Research on the Causes and Correlates of Delinquency is an example of OJJDP's support for long-term research. The Causes and Correlates program, initiated in 1986, includes three coordinated longitudinal projects: the Denver Youth Survey, directed by Dr. David Huizinga at the University of Colorado; the Pittsburgh Youth Study, directed by Dr. Rolf Loeber at the University of Pittsburgh; and the Rochester Youth Development Study, directed by Dr. Terence P. Thornberry at the University at Albany, State University of New York. This program represents a milestone in criminological research because it constitutes the largest shared-measurement approach ever achieved in delinquency research. From the beginning, the three research teams worked together to ensure that they used similar measurement techniques, thus enhancing generalizability by allowing for analyses that include all three sites.

The Causes and Correlates studies are designed to improve the understanding of serious delinquency, violence, and drug use through the examination of how individual youth develop within the context of family, school, peers, and the community. While each of the three projects has unique features, they share several key elements. All of the projects are longitudinal investigations that involve repeated contacts with the

same juveniles over a substantial portion of their developmental years.

The research teams on the three projects collaborated in creating the most comprehensive, common measurement package ever used in delinquency research. Thus, each of the three sites uses core measures to collect data on a wide range of key variables, including delinquent behavior, drug use, juvenile justice system involvement, community characteristics, family experiences, peer relationships, educational experiences, attitudes and values, and demographic characteristics. This allows for comparison across sites on common measures and the opportunity to reach more valid conclusions regarding cross-site similarities and differences on such factors as the age of onset of violent crime.

In each project, researchers conduct face-to-face interviews with individual juveniles in a private setting to collect self-report information on the nature and frequency of serious violent behavior. The advantage of using self-report data, rather than juvenile justice records of arrests, is that researchers come much closer to measuring actual violent behaviors and ascertaining when a violent career began. Multiple perspectives on each child's development and behavior were obtained through interviews with the child's primary caretaker and, whenever possible, teachers. In addition to interview data, the studies have collected extensive data from official records such as school, police, and juvenile court. This provides comparison data on the relationship between self-reported behavior and that which is officially detected and recorded.

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Summary

Although research has consistently found that gang members are more involved in serious and violent delinquent offenses than nonmembers, the effect of belonging to a gang has not been separated from the effect of simply associating with delinquent peers. Longitudinal data from both the SSDP and the RYDS provide strong and consistent evidence that being a member of a gang increases the rate of involvement in a variety of

deviant behaviors over and above the impact of having delinquent peers. Indeed, gang membership significantly predicts delinquency, even when controlling for other predictors of both delinquency and gang membership.

The consistency and strength of the results of each study are convincing evidence concerning the impact of gang membership on deviant behavior. Even more impressive, however, is the consistency of the results across the two stud-

ies. The SSDP and the RYDS have been conducted in cities that differ in their histories and demographic characteristics. For example, the majority of RYDS respondents were African-American (68 percent), while most SSDP respondents were European-American (46 percent). The studies also used somewhat different measures and included somewhat different variables in the multivariate equations. Yet both studies came to the same fundamental conclusion. The

The three longitudinal studies are prospective in nature; that is, subjects are repeatedly contacted to report on their current and recent violent activities. Deterioration of recall is minimized by avoiding lengthy gaps between interviews. Reporting periods were either 6 or 12 months, and all self-report violence data have been calculated for annual periods. Sample retention has been excellent; as of 1997, at least 84 percent of the subjects had been retained at each of the sites, and the average rate of retention across all interview periods was 90 percent.

Samples were carefully drawn to capture inner-city youth considered at high risk for involvement in delinquency and drug abuse. The samples can be described as probability samples, in which youth at greater risk are oversampled.

- ◆ Denver's sample includes 1,527 youth (806 boys and 721 girls) who were 7, 9, 11, 13, and 15 years old when data collection commenced in 1988. This sample represents the general population of youth residing in 20,000 households in high-risk neighborhoods in Denver.
- ◆ Pittsburgh's sample consists of 1,517 boys who ranged in age from 7 to 13 years and attended grades 1, 4, and 7 when data collection began in 1987. This sample represents the general population of boys attending Pittsburgh's public schools.
- ◆ Rochester's sample of 1,000 youth (729 boys and 271 girls) was drawn from students attending grades 7 and 8. This sample represents the entire range of seventh and eighth grade students attending Rochester's public schools.

The Causes and Correlates program has contributed to an understanding of a variety of topics related to juvenile violence and delinquency, including developing and testing causal models for chronic violent offending; examining interrelationships among gang involvement, drug selling, and gun ownership/use; changes over time in delinquency and drug use; and neighborhood, individual, and social risk factors for serious juvenile offenders. Major findings from the three projects to date include the following:

- ◆ Delinquency, drug use, and other problem behaviors begin at earlier ages than previously thought. For many children, these behaviors are evident before the teenage years. The co-occurrence of problem behaviors is also quite common. Serious delinquents are likely to be involved in drug use, precocious sexual activity, school failure, juvenile gangs, gun ownership, and other related behaviors.
- ◆ There has been a shift in the demographic characteristics of adolescent violent offenders. Older males, children (as young as 10 years old), and females reported greater involvement in serious violence than would have been expected from previous research.
- ◆ The development of disruptive and delinquent behavior in boys generally takes place in an orderly, progressive fashion, with less serious problem behaviors preceding more serious problems. Three distinct developmental pathways were identified: authority conflict (e.g., defiance and running away), covert actions (e.g., lying and stealing), and overt actions (e.g., aggression

and violent behavior). Individuals may proceed along single or multiple developmental pathways toward serious antisocial behavior.

- ◆ Childhood maltreatment is associated with an increased risk of at least 25 percent for engaging in a host of adolescent problem behaviors: serious and violent delinquency, drug use, poor performance in school, mental illness, and teenage pregnancy. Furthermore, a history of maltreatment nearly doubles the risk that teenagers will experience multiple problems during adolescence.

Each project has disseminated the results of its research through a broad range of publications, reports, and presentations.

In 1997, OJJDP initiated the Youth Development Series, a series of Bulletins created to present findings from the Program of Research on the Causes and Correlates of Delinquency. To date, four Bulletins have been released: *Epidemiology of Serious Violence, In the Wake of Childhood Maltreatment, Developmental Pathways in Boys' Disruptive and Delinquent Behavior, and Gang Members and Delinquent Behavior.*

For more information on OJJDP's Causes and Correlates studies or to obtain copies of the Youth Development Series Bulletins or other Youth Gang Series Bulletins, contact the Juvenile Justice Clearinghouse by telephone at 800-638-8736; by mail at P.O. Box 6000, Rockville, MD 20849-6000; by e-mail at askncjrs@ncjrs.org; or by viewing OJJDP's home page.

fact that both studies generated results that led to the same interpretation reinforces the conclusion that the observed effect of gang membership on involvement in delinquency is not unique to one city or to one ethnic group.

Implications for Theory and Practice

- ◆ **There are national implications from the two studies.** The consis-

tency of results and conclusions obtained in the two studies, which were conducted in two diverse communities, suggests that similar dynamics are likely to be operating in other areas. Given the recent spread of gangs to more and more cities across America (Thornberry, 1998), these findings underscore the importance of developing effective gang prevention and suppression programs.

- ◆ **Gang membership has an independent contributing role in the etiology of delinquency over and above other risk and protective factors.** These findings point to the tremendous importance of street gangs to understanding the dynamics of delinquency, especially serious and violent delinquency. They also indicate that it may not be enough to intervene only with regard to risk factors in the family, school, and similar areas. Specific attention must be given

to understanding the dynamics of gangs that produce these effects and then in developing appropriate intervention programs.

- ◆ **Preventing youth from joining gangs holds promise for preventing and reducing crime and substance use.** Because gangs have such a major effect on delinquent behavior, prevention efforts aimed at reducing delinquency and substance use should seek to prevent and reduce gang involvement.
- ◆ **Determining why youth join and leave gangs may provide information for prevention programs.** Because gang members are so much more involved in delinquency and substance use than nonmembers, understanding why they join and leave gangs may have great practical value. Such an understanding may lead to programs to keep some youth out of gangs in the first place or to shorten periods of active membership for those who do join. If successful, these programs should have an impact on reducing the level of juvenile delinquency and drug involvement.

References

Bandura, A. 1977. Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review* 84(2):191–215.

Battin, S.R., Hill, K.G., Abbott, R.D., Catalano, R.F., and Hawkins, J.D. 1998. The contribution of gang membership to delinquency beyond delinquent peers. *Criminology* 36(1):93–115.

Catalano, R.F., and Hawkins, J.D. 1996. The Social Development Model: A theory of antisocial behavior. In *Delinquency and Crime: Current Theories*, edited by J. David Hawkins. Cambridge, MA: Cambridge University Press.

Cressey, D.R. 1953. *Other People's Money*. New York, NY: The Free Press.

Hirschi, T. 1969. *Causes of Delinquency*. Berkeley, CA: University of California Press.

Klein, M.W. 1995. *The American Street Gang: Its Nature, Prevalence, and Control*. New York, NY: Oxford University Press.

Krohn, M.D. 1986. The web of conformity: A network approach to the explanation of delinquent behavior. *Social Problems* 33(6):581–593.

Krohn, M.D., and Thornberry, T.P., eds. In press. Gangs and other law violating groups. In *Gang Membership and Delinquency: Street Gangs in Developmental Perspective*. Report.

Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.

Loeber, R., and Farrington, D.P., eds. 1998. *Serious and Violent Juvenile Offenders: Risk Factors and Successful Interventions*. Thousand Oaks, CA: Sage Publications, Inc.

Matsueda, R.L. 1988. The current state of differential association theory. *Crime & Delinquency* 34(3):277–306.

Moore, J. 1991. *Going Down to the Barrio: Homeboys and Homegirls in Change*. Philadelphia, PA: Temple University Press.

Thornberry, T.P. 1987. Toward an interactional theory of delinquency. *Criminology* 25(4):863–891.

Thornberry, T.P. 1998. Membership in youth gangs and involvement in serious

and violent offending. In *Serious & Violent Juvenile Offenders: Risk Factors and Successful Interventions*, edited by R. Loeber and D.P. Farrington. Thousand Oaks, CA: Sage Publications, Inc.

The Office of Juvenile Justice and Delinquency Prevention is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance, the Bureau of Justice Statistics, the National Institute of Justice, and the Office for Victims of Crime.

Points of view or opinions expressed in this document are those of the authors and do not necessarily represent the official position or policies of OJJDP or the U.S. Department of Justice.

Acknowledgments

The authors would like to express their appreciation to colleagues on the Seattle Social Development Project and the Rochester Youth Development Study. We are very grateful to the dedicated staff who collected and processed the data and to the participants for their willingness to be interviewed repeatedly for this study. Without their assistance, the research could not have been conducted.

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Research for the Seattle Social Development Project and the Rochester Youth Development Study was supported by OJJDP under grants 95–JD–FX–0017 and 96–MU–FX–0014, respectively. The Seattle Social Development Project was also supported by grants from the National Institute on Drug Abuse and the Robert Wood Johnson Foundation.

OJJDP's National Youth Gang Center

As part of its comprehensive, coordinated response to America's gang problem, OJJDP funds the National Youth Gang Center (NYGC). NYGC assists State and local jurisdictions in the collection, analysis, and exchange of information on gang-related demographics, legislation, literature, research, and promising program strategies. It also coordinates activities of the OJJDP Gang Consortium—a group of Federal agencies, gang program representatives, and service providers that works to coordinate gang information and programs. For more information contact:

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Information newly available on the Web site includes gang-related legislation by subject and by State and the Youth Gang Consortium Survey of Gang Problems.

Related Readings

In addition to the Youth Gang Bulletin series, other gang-related publications, sponsored by OJJDP and other Office of Justice Programs agencies, are available from the Juvenile Justice Clearinghouse (JJC). These publications include:

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1995 National Youth Gang Survey (Program Summary). NCJ 164728.

Addressing Community Gang Problems: A Model for Problem Solving (Monograph). NCJ 156059.

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