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GUN OWNERSHIP AND GANG MEMBERSHIP

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I. INTRODUCTION

The problem of gang-related violence is not a new phenomenon, yet public concern over the rising violence perpetrated by juveniles has led to a renewed interest in the study of juvenile gangs. Whereas gangs used to be predominantly confined to large urban centers such as Los Angeles, Chicago, or New York City, today's gangs appear to be increasingly present in medium and small-sized cities previously believed to be immune to gang activity.¹ The increased visibility of gangs, coupled with the growing fear of juvenile crime, has led researchers and others to conclude that there is an association between gangs and crime. While researchers have been studying gangs since the turn of the century, criminologists are once again placing a greater emphasis on understanding the prevalence and dynamics of gang-related crime. This recent research overwhelmingly concludes that gang members tend to be more violent than those who are not gang members.

Recently, researchers discovered some alarming trends in the gangs they have studied: the gangs of today appear to be more violent in nature than the gangs of the first half of the century.² The activities that gangs participate in appear to be changing; gang members now engage more frequently in serious crimes, drug-related behavior, and firearms use.³ While all these changes are of great concern to policy-

¹ See, e.g., Dan Bryant, *Communitywide Responses Crucial for Dealing with Youth Gangs*, JUVENILE JUSTICE BULLETIN 2 (1989); JOHN M. HAGEDORN, PEOPLE AND FOLKS: GANGS, CRIME AND THE UNDERCLASS IN A RUSTBELT CITY 20-21 (1988); New York State Division For Youth, Reaffirming Prevention, REPORT OF THE TASK FORCE ON JUVENILE GANGS (1990); Irving A. Spergel, *Youth Gangs: Continuity and Change*, in 12 CRIME AND JUSTICE: A REVIEW OF RESEARCH 171, 182 (Michael Tonry & Norval Morris eds., 1990).

² Bryant, *supra* note 1, at 2-3; H.C. COVEY ET AL., JUVENILE GANGS 32 (1992); WALTER B. MILLER, CRIME BY YOUTH GANGS AND GROUPS IN THE UNITED STATES 76 (1982).

³ MILLER, *supra* note 2, at ch. 5-6; Malcolm W. Klein & Cheryl L. Maxson, *Street Gang Violence*, in VIOLENT CRIME AND VIOLENT CRIMINALS 198-226 (Neil Alan Weiner & Marvin E. Wolfgang eds., 1989).

makers and criminal justice professionals, it is the latter of these changes, the increased use of firearms by gang members, that creates perhaps the most disturbing scenario. Cities across the United States have noticed an alarming trend in gang use of firearms and there is some evidence that gang-related homicides have increased over the decades.⁴ Likewise, conflicts between gangs and gang members are becoming increasingly more deadly due to the use of firearms.⁵

Several researchers attribute the increasingly violent nature of gangs to the increased availability of firearms.⁶ Gang members today have access to an extremely sophisticated arsenal of weaponry. However, it is unclear whether the observed increase in the violent activities of juveniles and the apparent increase in gang activity is related to the observed increase in the availability and sophistication of firearms in the juvenile population.

The purpose of this Article is to examine the relationship between gun ownership, gun use, and gang membership. In particular, this research is concerned with the causal order of the relationship between illegal gun ownership and gang membership. If gang membership is related to the ownership of firearms and the causal order between the two can be discerned, criminal justice policymakers across the country will be presented with a unique opportunity for change. The research could help determine whether gangs foster gun activity or whether gun possession leads to gang membership. If the result is that gangs do in fact foster gun activity, such information will be particularly useful in that it will allow us to improve our strategies to reduce the violent and delinquent activities of gangs. Therefore, gang membership and gun ownership also need to be examined in the context of their contributions to violent and serious crime. Understanding the role of firearms in gangs will enhance our under-

⁴ MILLER, *supra* note 2, at 76; Klein and Maxson, *supra* note 3, at 218.

⁵ MILLER, *supra* note 2, at 76; Klein and Maxson, *supra* note 3, at 218.

⁶ ARNOLD P. GOLDSTEIN, DELINQUENT GANGS: A PSYCHOLOGICAL PERSPECTIVE 39 (1991); HAGEDORN, *supra* note 1, at 143-144; Klein & Maxson, *supra* note 3, at 219; MILLER, *supra* note 2, at 41; JOAN W. MOORE, GOING DOWN TO THE BARRIO: HOMEBOYS AND HOMEGIRLS IN CHANGE (1991); JAMES F. SHORT & FRED L. STRODTBECK, GROUP PROCESS AND GANG DELINQUENCY 77 (1965); Carolyn R. Block & Richard Block, *Street Gang Crime in Chicago*, NATIONAL INSTITUTE OF JUSTICE RESEARCH IN BRIEF 7 (1993); Lisa Porche-Burke & Christopher Fulton, *The Impact of Gang Violence: Strategies for Prevention and Intervention*, in SUBSTANCE ABUSE AND GANG VIOLENCE 85, 89 (Richard C. Cervantes ed., 1992); Joseph F. Sheley & James D. Wright, *Gun Acquisition and Possession in Selected Juvenile Samples*, in NATIONAL INSTITUTE OF JUSTICE RESEARCH IN BRIEF 9 (1993); James F. Short, *New Wine in Old Bottles? Change and Continuity in American Gangs*, in GANGS IN AMERICA 223, 227 (C. Ronald Huff ed., 1990); Spergel, *supra* note 1, at 190-191; Jerome S. Stumphauzer et al., *Violence by Street Gangs: East Side Story?* in VIOLENT BEHAVIOR: SOCIAL LEARNING APPROACHES TO PREDICTION, MANAGEMENT, AND TREATMENT 68, 69 (R.B. Stuart ed., 1981).

standing of gang behavior, which may in turn be useful in combating violent criminal activity by gangs.

II. GANGS AND DELINQUENT BEHAVIOR

Scholars have placed considerable attention on examining the extent to which gang members engage in delinquent behavior. As early as 1927, Thrasher, in his observational study of 1,313 gangs in Chicago, concluded that gang members were more involved in delinquency than youths who were not involved in gangs.⁷ Subsequent research has confirmed these findings. There has been a high degree of consensus among researchers examining this relationship. Utilizing an array of methodological techniques, researchers have almost unanimously concluded that gang members are far more likely to be delinquent than their non-gang counterparts. This relationship has been confirmed by both observational and self-report studies⁸ and by those examining official data.⁹

While these researchers all agree that gang members are more delinquent than non-gang members, there is some controversy as to the nature of delinquent behavior by gang members. Many of the early studies on gang behavior concluded that gang members were frequently involved in minor forms of delinquency or, as Klein stated, a "garden variety" of delinquent activities.¹⁰ However, this picture of gang-related delinquency appears to be changing. More recently, scholars agree that gang violence is becoming both more frequent and more deadly.¹¹ Specifically, research indicates that gang mem-

⁷ FREDERIC M. THRASHER, *THE GANG* 374-90, 413 (1927).

⁸ CLIFFORD R. SHAW & HENRY D. MCKAY, *JUVENILE DELINQUENCY AND URBAN AREAS* 173 (1969); SHORT & STRODTBECK, *supra* note 6, at 2; Finn-Aage Ebensen & David Huizinga, *Gangs, Drugs and Delinquency in a Survey of Urban Youth*, 31 *CRIMINOLOGY* 565, 573 (1993); Jeffrey Fagan, *The Social Organization of Drug Use and Drug Dealing Among Urban Youth*, 27 *CRIMINOLOGY* 633, 648 (1989) [hereinafter *Social Organization of Drug Use*]; Jeffrey Fagan, *Social Processes of Delinquency and Drug Use Among Urban Gangs*, in *GANGS IN AMERICA*, *supra* note 6, at 83; Jeffrey Fagan et al., *Violent Delinquents and Urban Youths*, 24 *CRIMINOLOGY* 439, 443 (1986); Terrence P. Thornberry et al., *The Role of Juvenile Gangs in Facilitating Delinquent Behavior*, 30 *J. RES. CRIME & DELINQ.* 55 (1993).

⁹ Block & Block, *supra* note 6; Albert K. Cohen, *The Delinquency of Gangs and Spontaneous Groups*, in *DELINQUENCY: SELECTED STUDIES* (J. Thorsten Sellin and Marvin E. Wolfgang eds., 1969); Malcolm W. Klein et al., *The Impact of Police Investigation on Police-Reported Rates of Gang and Non-gang Homicides*, 24 *CRIMINOLOGY* 489, 492-500 (1986); Klein & Maxson, *supra* note 3, at 71.

¹⁰ Malcolm W. Klein, *Offense Specialization and Versatility Among Juveniles*, 24 *BRIT. J. OF CRIMINOLOGY* 185-86 (1984); *see also*, MALCOLM W. KLEIN, *STREET GANGS AND STREET WORKERS* (1971); Walter B. Miller, *The Impact of a "Total-Community" Delinquency Control Project*, 10 *SOC. PROBS.* 168, 181 (1962).

¹¹ COVEY ET AL., *supra* note 2, at 32; HAGEDORN, *supra* note 1, at 143; MILLER, *supra* note 2, at 516; Bryant, *supra* note 1, at 2; Cohen, *supra* note 9; Klein & Maxson, *supra* note 3, at 218-219; Stumphauzer et al., *supra* note 6.

bers are involved in the most serious and violent types of offenses.¹² Given this recent shift in gang behavior, it becomes increasingly important to discover the factors that might be contributing to this shift in delinquency patterns among gang members.

A. GANGS AND WEAPONS

Several researchers have attributed these observed increases in both the frequency and seriousness of gang-related crime to the increased availability of weapons among the juvenile population.¹³ For example, in 1975 Miller found that in a typical gang about half of the members are likely to own a gun.¹⁴ In fact, some of the gang members we interviewed made statements such as "everybody's got them; they have them either on their persons or in their homes" and "in this city (L.A.) a gang is judged by the number and quality of weapons they have; the most heavily armed gang is the most feared; for our gangs, firepower is the name of the game." While it is likely that these statements are somewhat exaggerated, there is little question that most gang members today either own a gun or have access to a large number of weapons. More recently, Hagedorn also discovered that nearly 50% of the gang members interviewed said they possessed more than one firearm and a large majority claimed to have at least one handgun.¹⁵ Similarly, Lizotte, Tesoriero, Thornberry and Krohn found that over half of the juveniles who reported being in a gang also reported owning guns for "protection."¹⁶ Taylor found that 70% of the gang members interviewed reported having a gun in their home, thereby having access to a firearm.¹⁷

While these statistics are extremely troublesome, the picture becomes even more alarming when one considers the weapons themselves. Not only have researchers revealed an increase in the availability of firearms in gangs, but they also point out that weapons

¹² MILLER, *supra* note 2, at 72; Cohen, *supra* note 9, at 80; Fagan, *Social Organization of Drug Use*, *supra* note 8, at 647; C. Jack Friedman et al., *A Profile of Juvenile Street Gang Members*, 10 *ADOLESCENCE* 563 (1975); Klein & Maxson, *supra* note 3, at 221-22; Walter B. Miller, *Gangs, Groups, and Serious Youth Crime*, in *CRITICAL ISSUES IN JUVENILE DELINQUENCY* 115 (David Shichor & Dellos H. Kelly eds., 1980).

¹³ GOLDSTEIN, *supra* note 6, at 35; HAGEDORN, *supra* note 1, at 144; MILLER, *supra* note 2, at 41-42; MOORE, *supra* note 6; SHORT & STRODTBECK, *supra* note 6, at 77; Block & Block, *supra* note 6, at 7; Klein & Maxson, *supra* note 3, at 218-19; Porche-Burke & Fulton, *supra* note 6; Sheley & Wright, *supra* note 6, at 4-5; Short, *supra* note 6; Spergel, *supra* note 1, at 191; Stumphauzer et al., *supra* note 6.

¹⁴ MILLER, *supra* note 2, at 41.

¹⁵ HAGEDORN, *supra* note 1, at 144.

¹⁶ Alan J. Lizotte et al., *Patterns of Adolescent Firearms Ownership and Use*, 11 *JUST. Q.* 51, 65 (1994).

¹⁷ CARL S. TAYLOR, *DANGEROUS SOCIETY* 130 (1990).

today are far more sophisticated and lethal than the weapons of the past. Whereas weapons like brass knuckles and homemade zip guns dominated gangs in the 1930s through the 1950s, today gangs possess a far more deadly variety of weaponry, including sawed-off or unadulterated rifles and shotguns, along with handguns of all sizes and types (e.g., 22 cal., 38 cal., .357, 45 cal., and 9 mm. among others) and semi-automatic weapons (e.g., AK-47, Uzi, MAC-10, MAC-11).¹⁸ For example, Andrew Hague of the Dade County Attorney's Office states that "Dade County gangs are very heavily armed," adding that it is "not uncommon for police to retrieve very sophisticated weapons, including AK-47's, MAC-10's, derringers, and 9mm.'s."¹⁹

This changing nature of weaponry has influenced the very nature of gang behavior, particularly in terms of gang conflicts. In 1975, Miller stated that "probably the single most significant development affecting gang-member violence during the present period is the extraordinary increase in the availability and use of firearms to effect violent crimes. This development is in all likelihood the major reason behind the increasingly lethal nature of gang violence."²⁰

Researchers have found that gang members are being arrested in increasingly large numbers for violent offenses such as assault with a deadly weapon, shooting incidences, batteries, and homicides.²¹ Los Angeles police and sheriff's data indicate that guns were present in 80 to 82% of all gang-related homicides, which is about 15 to 20% higher than homicides committed by individuals who are not associated with a gang.²² Block and Block found that a gun was the lethal weapon in 94 to 96% of all street gang-motivated homicides in Chicago.²³ These changes in gun ownership among gang members not only result in an increase in gang violence, but also help spread violence to nearby communities. Further, today gang shootings tend to be unplanned and spontaneous events.²⁴ The rumbles of yesteryear have been replaced by activities such as drive-by shootings. Thus, it appears that gang-related violence is taking on a new quality and becoming increasingly lethal in nature. This change appears to be directly attributable

¹⁸ COVEY ET AL., *supra* note 2, at 29; MILLER, *supra* note 2, at 42; Block & Block, *supra* note 6, at 7; Spergel, *supra* note 1, at 190; Del Stover, *A New Breed of Youth Gangs is on the Prowl and a Bigger Threat Than Ever*, 173 AM. SCH. BOARD J. 19, 20-21 (1986).

¹⁹ Bryant, *supra* note 1, at 4.

²⁰ MILLER, *supra* note 2, at 76.

²¹ *Id.* at 41; Irving A. Spergel, *The Violent Gang in Chicago: A Local Community Approach*, 60 SOC. SERVICE REV. 94, 94-95 (1986).

²² Klein & Maxson, *supra* note 3, at 219.

²³ Block & Block, *supra* note 6, at 7.

²⁴ RUTH HOROWITZ, *HONOR AND THE AMERICAN DREAM: CULTURE AND IDENTITY IN A CHICAGO COMMUNITY 80-81* (1983).

to the role of firearms in a gang.

B. GUN OWNERSHIP AND GANG MEMBERSHIP

Prior research has postulated a relationship between gun ownership and gang membership, but the causal order of this relationship is unclear. While it appears that there is certainly an association between gang membership, gun ownership, and delinquent behavior, researchers at this point have little empirical knowledge of the dynamics of this relationship. For example, it is entirely possible that gangs perform a self-selection process by recruiting their members from juvenile populations where firearms are readily available and perhaps utilized prior to gang membership. However, it is equally plausible that juveniles are socialized into the gun culture by virtue of their gang membership and activity. In other words, the nature or the organization of a gang may facilitate the gun ownership of its members. Finally, it is feasible that both of these factors operate simultaneously to enhance the gun ownership of gang members.

The purpose of this Article is to explore the nature of the temporal relationship between gun ownership and gang membership. This Article also considers the impact of a gang on delinquency. Longitudinal data from the Rochester Youth Development Study (RYDS) are utilized to examine the causal nature of these relationships. RYDS is an ongoing longitudinal study of delinquency and drug use among a sample of 987 youths and their primary caretakers in Rochester, New York. Specifically, this Article addresses the following research questions:

- 1) Are gang members more likely than non-gang members to own firearms for sport and/or for "protection"?
- 2) If gang members are more likely to own specific types of firearms, does gun ownership precede gang involvement, does gang membership precede gun involvement, or do both of these operate at the same time?
- 3) If gang members own guns, does it influence their delinquent behavior, especially in terms of serious offenses and gun-related offenses?
- 4) Do relationships between gang membership and gun ownership remain stable when the demographic and social characteristics of the juveniles are held constant?

III. DATA AND METHODS

The data for this study were obtained from the RYDS, a longitudinal panel study examining the causes and correlates of juvenile delin-

quency in a high-risk urban sample. Adolescents and their primary caretakers were interviewed at six month intervals, commencing when subjects were in the seventh or eighth grades.

The total panel consisted of 987 students who attended the seventh and eighth grades of the Rochester public schools during the 1987-88 school year. An important aim of the sampling strategy was to ensure that students at high risk for delinquent behavior were included in the sample. To facilitate this goal, the sample was stratified to overrepresent high-risk youths. Males were oversampled (75% versus 25%) because they are more likely to be involved in serious delinquent behavior. In addition, students who resided in high crime areas were oversampled on the assumption that these youths were at higher risk for delinquent involvement. In order to identify high crime areas, each census tract in Rochester was assigned a resident arrest rate, which reflects the proportion of the tract's adult population arrested in 1986. Subjects were then sampled with probabilities proportionate to the arrest rate in their area of residence. Since the true probability of a juvenile living in a particular tract is known, the sample can be weighted to reflect a true random sample of the population. The multivariate analysis reported below is weighted.²⁵

Since information on both gang membership and gun ownership was not collected until later waves of data collection, the current analysis is based on data collected at Waves 7 through 9. Waves are conducted at six month intervals. The subjects were sixteen and seventeen years of age at Wave 8. Because girls rarely own guns, whether for sport or protection, the present analysis is based on 656 male adolescents who remained in the panel during Waves 7 through 9. Table 1 shows the characteristics of subjects. The retention rate for the entire sample is 89% at Wave 7, 87% at Wave 8 and 88% at Wave 9. With respect to age, sex, race/ethnicity, and census tract, subjects at Wave 7 through 9 are remarkably similar to the subjects at Wave 1 of the panel. Thus, attrition does not appear to have had an effect on the characteristics of our respondents.

Table 1 shows that the majority of the subjects in our sample are minorities. The average age of the juveniles in this sample is eighteen. Slightly over 10% of the sample reported being a gang member at sometime over the eighteen month period studied in this analysis and one-fifth of the sample reported owning a gun during this same

²⁵ For a more detailed description of the sampling procedures utilized by the RYDS see, Margaret Farnworth et al., *Technical Report No. 1: Sampling Design and Implementation*, Rochester Youth Development Study (1990); Terence P. Thornberry et al., *The Consequences of Respondent Attrition in Panel Studies: A Simulation Based on the Rochester Youth Development Study*, 9 J. QUANTITATIVE CRIMINOLOGY 127, 133-34 (1993).

time period.

A. MEASUREMENT

The variables used in the analysis are presented in Table 2. Specifically, there are four types of variables utilized in this study: gang membership, gun ownership, delinquent behavior, and several control variables used in the multivariate analysis.

The present study utilizes a self-report measure of the respondents' participation in a street gang or "posse." Respondents who identified themselves as gang members were considered to be members for purposes of this analysis. Yet defining a gang is one of the most challenging tasks facing gang researchers today. Horowitz argues that we lack sufficient knowledge concerning gangs to allow us to form precise definitions, and she also suggests that confining the definition of a gang to specific criteria may foreclose important debate and theory.²⁶ Winfree et al. found that more restrictive measures of defining gang involvement, requiring both initiation rites and some external symbols of membership, were associated with less delinquency than the less restrictive measures of definition, such as self-identification as a gang member.²⁷ Many researchers agree that self-definition is a central aspect of gang membership.²⁸ Furthermore, allowing for self-definition avoids the issue of confounding the definition of gang membership with gang behavior. Therefore, a self-report measure is most appropriate for the purposes of this analysis.

Gun ownership is measured by the adolescent's self-reported ownership of a handgun, pistol, revolver, shotgun, or rifle—not a BB or pellet gun. Two measures of gun ownership were created, gun ownership for protection purposes and gun ownership for sporting purposes. Respondents were considered to own a gun for protection purposes if they reported owning any of the above firearms for protection, whether or not they owned the gun for other purposes such as hunting or sport. Respondents were considered to own a gun for sporting purposes if they reported that they owned their guns solely for the purposes of hunting or target practicing and the like. An average of 9% of the subjects own guns for protection while an average of

²⁶ Ruth Horowitz, *Sociological Perspectives on Gangs: Conflicting Definitions and Concepts*, in *GANGS IN AMERICA*, *supra* note 6, at 37.

²⁷ L. Thomas Winfree et al., *The Definition and Measurement of "Gang Status": Policy Implications for Juvenile Justice*, 43 *JUV. & FAM. CT. J.* 29, 34-36 (1992).

²⁸ M.G. HARRIS, *CHOLAS: LATINO GIRLS AND GANGS* (1988); Fagan, *Social Organization of Drug Use*, *supra* note 8, at 658; Winfree *supra* note 27, at 34-36; Richard G. Zevitz & Susan R. Takata, *Metropolitan Gang Influences and the Emergence of Group Delinquency in a Regional Community*, 20 *J. Crim. Just.* 93, 104 (1992).

6% own guns for sport. Boys who own guns for sport are much more likely to own rifles and shotguns. Those who own for protection tend to own handguns, sawed-off rifles, and shotguns.²⁹ Protection owners are much more likely to be involved in gangs and criminal activity.³⁰

Since past research has found that peers introduce boys to protective gun use,³¹ subjects were asked if they have friends who own guns for "protection" (Peer Gun Ownership). Thirty-six percent (252) reported having friends who do. Similarly, prior research suggests that parents often introduce boys to sport gun use.³² Therefore, parents sport gun ownership is also included in our analysis. Five percent (35) of the parents own guns for sport. Because we are interested in examining socialization effects, a ten item scale measuring the boy's commitment to delinquency values is also included (Cronbach's Alpha = .91).

Race and ethnicity are related to both gang and gun activity. Because of this relationship, dummy variables indicating whether the subject is white or Hispanic are included in the analysis.

The delinquency measures are derived from the RYDS' self-report index. They were adapted from the National Youth Survey³³ and modified by the Denver Youth Survey.³⁴ Respondents were asked if they had, during the past six months, engaged in a series of forty-four delinquent behaviors. If a respondent answered in the affirmative, he was asked how often he did so and also asked to describe the most serious incident. Coders screened the delinquency items in order to ensure that only "actionable" offenses were analyzed. This was done to ensure that trivial offenses (e.g., sibling rivalries) were excluded. Five sub-scales are used in the following analysis: general delinquency, serious delinquency, street crimes, drug sales, and gun-related crime.

The general scale of delinquency consists of twenty-four delinquency items selected to represent a variety of delinquent activities. The range of offenses includes thefts, drug sales, weapons offenses, and vandalism. The serious delinquency scale consists of eight delinquency items, covering such offenses as using a weapon to hurt someone, robbery, forced sex, theft over \$50, and breaking and entering. Thirteen items make up the street crime measure. These offenses

²⁹ Lizotte et al., *supra* note 16, at 67.

³⁰ See *id.* for more detail on this coding scheme.

³¹ *Id.*

³² *Id.*

³³ DELBERT S. ELLIOT ET AL., EXPLAINING DELINQUENCY AND DRUG USE 9-10 (1985).

³⁴ David A. Huizinga et al., *Are There Multiple Paths to Delinquency?*, 82 J. CRIM. L. & CRIMINOLOGY 83, 108-09 (1991).

concentrate on serious offenses that are likely to occur in public settings. The drug sales measure consists of two items measuring sales of both marijuana and hard drugs. Three offenses are used to measure gun-related crime: robbery, attacking someone with a gun, and using a gun during a gang fight.

B. RESULTS

1. *The Relationship Between Gang Membership and Gun Ownership*

The research first examines the relationship between gang membership and gun ownership. Specifically, are gang members more likely to own guns than non-gang members? Table 3 examines the relationship between gang membership and gun ownership, as well as other characteristics and behaviors of gun owners.

The results clearly illustrate that gang members are significantly more likely to own guns for protection purposes than non-gang members. For example, at Wave 7, 24% of gang members own guns for protection, while only about 7% of non-gang members do so. Guns owned for sporting purposes are no more likely to be owned by gang members than by non-gang members. These results are consistent across the three waves examined. Furthermore, while not always statistically significant, for gang members both protection and sport ownership seem to increase over time, possibly indicating an increase of gang members' gun ownership with age. There is no visible trend in the rates of gun ownership for non-gang members over time.

Additionally, gang members are also more likely than non-gang members to have peers who own guns for protection; the percentage of gang members having such peers increases over time. By Wave 9, nearly 87% of gang members have friends who own guns for protection. Although lower in magnitude, this trend is similar to the observed increase in protection gun ownership for gang members over the three waves. Both of these findings suggest that the age of the respondent may have an influence on both the respondent's chance of owning a gun for protection and the chance that their peers will own guns. As the juvenile matures, he may be more likely to become involved with firearms. Further, non-gang members are far less likely to have peers who own guns. The percentage of those who have such peers remains steady at its low level over time.

Table 3 also shows that gang members and their friends are more likely to own other types of weapons such as knives or clubs. Furthermore, this weapons ownership increases over time for gang members and their peers. By Wave 9, 60% of the subjects who are gang members have weapons other than firearms for protection and 83% have

peers who own other types of weapons. However, weapon ownership is much lower and decreases for non-gang members and remains stable for their friends.

Finally, gang members are significantly more likely than non-gang members to carry guns. In Wave 7 more than 15% of gang members carry a gun, and this increases, although not significantly so, to more than 26% at Wave 9. This is contrasted by non-gang members, who rarely carry a gun (approximately 4%).

Overall, the results clearly demonstrate that gang membership is significantly related to both protection gun ownership and weapons ownership. Furthermore, there is an association between gang membership and peers with guns for protection; gang members have peers who own guns for protection and are more inclined to carry their weapons outside of the home.

2. Temporal Ordering of the Relationship Between Gang Membership and Gun Ownership

Having established that the relationship between gang membership and gun ownership exists, the second task of this research was to discern its temporal ordering. Do gangs influence the protective gun ownership of members, or do gangs recruit youths already involved in the gun subculture?

The unique advantage of utilizing a longitudinal data set is that it allows one to assess the temporal ordering of these variables; longitudinal data allows a determination as to whether juveniles' sport and protective gun ownership occurs prior to, during, or after their gang participation.

In order to discern the nature of this relationship, three measures of gang membership were utilized and compared to non-gang members. First, future gang members represent subjects who were not in a gang in a preceding wave (7 or 8), but who joined a gang in a subsequent wave (8 or 9). Current gang members were those youths who reported being in a gang during the current wave. Juveniles who were in a gang in a preceding wave but who were not currently in a gang were considered to be past gang members.³⁵ Non-gang members were those youths who never reported being a member of a gang.

³⁵ For those youths who were gang members in more than one wave, prevalence rates were calculated using their most recent wave of gang activity. Youths had two chances to be counted as both past and future gang members. For example, if a youth was in the gang in Wave 7 but had dropped out in Wave 8, he was counted as a past member and prevalence rates were calculated for his Wave 8 gun ownership. Similarly, a youth who was in the gang in Wave 8, but dropped out in Wave 9 was also counted as a past gang member, and his prevalence rates were calculated for his Wave 9 gun ownership.

Table 4 shows prevalence rates for the same variables reported in Table 3, in addition to the five delinquency items measured in each of these four categories of gang membership.

The findings clearly indicate that gang membership enhances gun ownership for protection purposes. While future gang members have somewhat inflated rates of gun ownership for protection purposes over non-gang members (23.1% versus 14.2%), current gang members are clearly more likely to own guns for protection than non-gang members (30.9% versus 14.2%). The rate of protection gun ownership for current gang members is only slightly and not significantly higher than that of future gang members. This may suggest that gangs are likely to recruit members who already own guns for protection. Furthermore, the juveniles' rate of gun ownership for protection purposes drops to a level similar to that of non-gang members after the juvenile has left a gang (13.2% versus 14.2%). This finding suggests that those who are recruited into a gang are not interested in protection gun activity and are likely to drop out of a gang.³⁶ Again, these relationships are observed only for guns owned for protection purposes rather than for sporting purposes. A similar pattern is also observed for weapons other than firearms, which is not statistically significant, and for carrying guns outside the household, which is statistically significant.

Findings concerning peer ownership of guns for protection purposes and weapons other than guns further support the enhancement perspective. The prevalence of peer gun ownership and weapons ownership for both non-gang members and future gang members is similar, 55.1% versus 53.8%. However, once in a gang, the percentage of peers owning both guns for protection and weapons increases significantly to nearly 78%. Furthermore, once the youths drop out of a gang, their peers' ownership rates decline to rates comparable to that of non-gang members, 52.8%.

Similar patterns are observed when examining the delinquent behavior of these juveniles. Future gang members are more likely than non-gang members to have been involved in serious delinquency and street delinquency. For all types of delinquency, once the juvenile joins a gang his involvement in these activities is significantly higher than either non-gang members or future gang members. Yet, when these juveniles leave a gang, the percentage of youths involved in these behaviors drops again to rates that are comparable to those of the non-gang members. The exceptions to this are found in the seri-

³⁶ Additional analysis supports this assumption. The majority of youths who eventually drop out of the gang did not own guns while they were in the gang.

ous and street delinquency scales, where the percentage of youths involved in these types of delinquency decreases after a juvenile leaves a gang but still remains slightly inflated from those who never joined a gang. More importantly, this type of relationship is also observed for gun-related crimes. Again, current gang members are more likely than past, future, or non-gang members to be involved in this type of criminal activity.

The results of this analysis clearly indicate that gang membership increases the prevalence of guns for protection and weapons ownership, and affects peer behaviors and delinquent offending. However, these results also provide some support for the possibility of a selection process. Future gang members are the closest in terms of their prevalence rates to current gang members, frequently having prevalence rates slightly above those of both non-gang members and prior gang members. Once a youth leaves a gang, it appears that he also leaves behind the gun subculture and the delinquent activity. Prevalence rates of past gang members are very much comparable to those of non-gang members. It may be that these youths never really fit into a gang and that they were not interested in the deviant aspects of a gang. In other words, once they discovered that other gang members were involved in gun ownership and other forms of serious delinquency, they made the decision to leave the gang.

3. Multivariate Analysis Determining Causal Order

Having established a relationship between gang membership and protection gun ownership, the final question to be addressed is whether past, present, and future gang membership are significant predictors of gun ownership when other factors are held constant. Including separate independent variables measuring past, present, and future gang membership in equations predicting the type of gun owned helps determine the causal order of the gang-gun relationship. In the equations, the coefficient for past gang membership indicates the impact of gang membership in Wave 7 on gun ownership in Wave 8. One might think of this as the residual effect of gang membership on future gun ownership. The coefficient for future gang membership measures the opposite causal effect; it assesses the impact of gun ownership at Wave 8 on gang membership at Wave 9. In other words, it measures the forces that propel gun owners into gangs. The coefficient for current gang member on gun ownership measures the contemporaneous effect of gang membership on gun ownership. In addition, controlling for other relevant variables allows us to ascertain if the observed relationships between past, present, and future gang membership and gun ownership might in fact be due to other extra-

neous factors. For example, prior research has found a strong relationship between the race of a juvenile and both gang membership and gun ownership.³⁷ It is possible that the high percentage of minorities in gangs may also account for the high percentage of guns in gangs. Additionally, gangs may either attract youths who possess delinquent values or foster the development of those delinquent values once a youth joins a gang; again, youths with delinquent values may be more likely to own guns in the gang setting. The multivariate analysis allows us to examine the relationship between gun ownership and gang membership while controlling for these other factors. Specifically, the race of the juvenile, the delinquent values held by the juvenile, the rate of peer gun ownership for protection, and parental sport gun ownership are examined in relation to the juveniles' probability of owning a gun.³⁸ These variables are thought to reflect both the extent of the juvenile's commitment to a delinquent lifestyle (delinquent values, gang membership) and parental socialization of gun ownership (parent sport ownership).

Since the dependent variable of gun ownership is trichotomous, multinomial logistic regression is used to estimate this equation.³⁹ In this analysis sport gun ownership and protection gun ownership are simultaneously contrasted with no gun ownership. Table 5 reports the logistic regression coefficients, standard errors, and the percentage change in probability of joining a gang, given a one unit increase in each of the independent variables.⁴⁰

The results show that African-Americans, those who have peers who own protection guns, and future and current gang members are the most likely to own a gun for protection purposes. Whites are 7% less likely to own guns for protection than are African-Americans. Additionally, juveniles who have peers who own guns are 31% more likely to own a gun for protection purposes than those without peers who own guns. Moreover, both future and current gang membership positively influence a juvenile's probability of owning a gun for protec-

³⁷ Lizotte et al., *supra* note 16, at 52, 65. For a discussion of the relationship between race and gang membership, see generally Spergel, *supra* note 1.

³⁸ For a description of these variables, see Table 2. For purposes of this analysis, future, past, and current gang membership was calculated using Wave 8 as a reference point. For example, a past gang member is a youth who was a member in Wave 7 but had dropped out by Wave 8. The independent variables for this analysis are also from Wave 8, with the exception of the measured parental gun ownership, which was only included in Wave 7 of the data collection.

³⁹ See DAVID W. HOSMER & STANLEY LEMESHOW, *APPLIED LOGISTIC REGRESSION* (1989) for a discussion on multinomial logistic regression.

⁴⁰ See Trond Petersen, *A Comment on Presenting Results From Logit and Probit Models*, 50 *AM. SOC. REV.* 130 (1985) for a discussion of translating logistic regression coefficients into probabilities.

tion by 27% and 12% respectively. Finally, past gang members are not significantly different from non-gang members.

The variables predicting gun ownership for protection purposes differ somewhat from those predicting gun ownership for sporting purposes. Whites are 28% more likely to own a gun for sport than are African-Americans.⁴¹ Further, while peer gun ownership has an effect on sport gun ownership, the magnitude of its influence is significantly reduced when compared to those who own guns for protection purposes. Juveniles with peers who own guns for protection are 31% more inclined to own a gun for protection than those with peers who do not own guns for protection, while juveniles with peers who own a gun for sport are only 9% more likely to own a gun for protection purposes. Tests for differences between these coefficients show them to be statistically significant. Furthermore, while current gang membership is predictive of sport gun ownership, there are too few cases of future or past gang members owning sport guns to estimate the effects of these variables on sport gun ownership. The only unique predictor of sport gun ownership is parental sport gun ownership, indicating that parents who own guns for sport are probably socializing their children into a culture of sport gun ownership, but not protective gun ownership.

The multivariate analysis presents us with a slightly different picture of the relationship between gang membership and gun ownership. Future gang membership emerges as a strong predictor of protection gun ownership; being a prospective gang member increases a juvenile's chance of protection gun ownership by 27%. That is, protection gun ownership causes future gang membership, suggesting that gangs successfully recruit those who already own guns for protection. Interestingly, these findings suggest that once a juvenile is in a gang, he is equally likely to own both sport and protective guns.⁴² Again, these results suggest an environment that fosters the possession of weapons both for protection and for use in crime.

IV. DISCUSSION AND CONCLUSIONS

Overall, the results of this study clearly indicate that gang mem-

⁴¹ This may be the reason for the recent large increase in the homicide rate for African-American teenagers. See Lois A. Fingerhut et al., *Firearm and Nonfirearm Homicides Among Persons 15 Through 19 Years of Age: Differences by Level of Urbanization, United States, 1979 Through 1989*, 267 JAMA 3048, 3051 (1992).

⁴² Supplementary analysis reveals that while gang members who own guns for both protection and sporting purposes are equally likely to be involved in general types of delinquent behavior, the protection gun owners are slightly more likely to be involved in the more serious forms of delinquency.

bers are significantly more likely to own guns than non-gang members. These findings are also consistent for weapons other than guns. Furthermore, gang members are more likely to have peers who own guns for protection and to carry their weapons outside the home.

More importantly, the longitudinal analysis allows us to examine the nature of this relationship. While gangs do appear to influence gun ownership, the nature of that influence is slightly more complex than previous researchers have acknowledged. Those youths who eventually join a gang display slightly inflated rates of both gun ownership and delinquency before they become gang members. There are two possible explanations for this observation. First, it may be that gangs recruit juveniles who already show a propensity for involvement in these delinquent activities. Second, it may be that the youths who are involved in the illegal firearms subculture and delinquent behavior are also the same youths who are likely to be attracted to a gang. In either case, these results provide some support for the notion that a selection process is occurring. The strongest support for the occurrence of a selection process is found in the socialization perspective as discussed by Thornberry et al: those youths who are currently involved in gangs clearly exhibit the highest prevalence rates of both gun ownership and delinquency.⁴³ These findings indicate that a gang milieu fosters illegal activities, including both delinquent behavior and firearms ownership.

Youths who drop out of a gang experience a decrease in their levels of participation in both the gun subculture and in delinquent behaviors. Those youths who dropped out and who did not own firearms were also unlikely to own firearms during their gang membership. Quite possibly, these youths were neither interested in the gun subculture nor in participating in illegal activities; once they realized that these activities were a part of a gang subculture, they left the gang.

These conclusions have several implications. The findings concerning current gang members lend support for the learning perspective. Previous theorists such as Akers, Sutherland and Cressey, and Cloward and Ohlin stress the importance of learning criminal behavior.⁴⁴ Gangs provide youths with both an environment which is conducive to learning criminal values and behaviors and to techniques for engaging in those activities. It is important to note that this is true

⁴³ Thornberry, et al., *supra* note 8, at 58.

⁴⁴ RONALD L. AKERS, *DEVIAN'T BEHAVIOR: A SOCIAL LEARNING APPROACH* 39-60 (1985); EDWIN H. SUTHERLAND & DONALD R. CRESSEY, *CRIMINOLOGY* 220 (1978); RICARD A. CLOWARD & LLOYD E. OHLIN, *DELINQUENCY AND OPPORTUNITY: A THEORY OF DELINQUENT GANGS* 148-49 (1960).

mainly for delinquency; once a juvenile enters a gang, he learns that delinquent activities and gun ownership are an acceptable part of gang membership. These results also offer some support for the idea that gangs may establish their own criteria for attaining status within the group setting, and frequently that status is established by engaging in delinquent activities.⁴⁵

With regards to gun ownership, only minimal support exists for the learning perspective. Gangs appear much more likely to recruit from juveniles who already own guns. This implies that juveniles who already own guns for protection may be joining a gang because they are attracted to the role of weapons in a gang. This view is further supported by the fact that the juveniles who drop out of a gang were not likely to own guns while in a gang.

From a policy perspective, this research suggests that society may be able to target juveniles who are susceptible to gang recruitment and aim our intervention strategies at this narrower population. Since joining a gang is also associated with a marked increase in both gun ownership and participation in illegal activities, and since leaving a gang is related to a decrease in delinquent activities, it becomes increasingly important that society institute policies to remove these juveniles from a gang once they become involved.

Finally, these findings have implications for future research. Further examination of the factors that predict future gang involvement is needed. The findings from this study suggest that gangs may be more likely to recruit certain types of juveniles; for example, those who already own guns for protection purposes. Additionally, there is a need to further develop our understanding of the dynamics and consequences of gang membership. How and why does gang membership encourage the ownership of firearms? These results imply that while gun ownership is closely related to delinquency within a gang, the gun culture may operate in a slightly different way. Protective gun ownership influences the probability that a youth will join a gang, but it also influences his behavior once he is in a gang. Since juveniles appear to leave these behaviors behind once they leave a gang, it becomes increasingly more important to identify strategies that would be successful at drawing youths out of a gang.

⁴⁵ ALBERT K. COHEN, *DELINQUENT BOYS: THE CULTURE OF THE GANG* 65-67 (1955); SHORT & STRODTBECK, *supra* note 6; Walter B. Miller, *Lower-Class Culture as a Generating Milieu of Gang Delinquency*, 14 J. SOC. ISSUES 5 (1958).

Table 1
SAMPLE CHARACTERISTICS (N=656)

Race	
White	19.1%
African-American	62.8%
Hispanic	18.1%
Age	
16	.3%
17	15.5%
18	39.9%
19	36.9%
20	7.3%
$\bar{X} = 18.35$	
Gang	
Never been a gang member	88.7%
Gang member during at least 1 wave	11.3%
Gun ownership	
Never owned	79.4%
Owned during at least 1 wave	20.6%

Table 2
CODING OF VARIABLES

		\bar{X}	S.D.
1. Gun for Protection Purposes	Subject owns gun (handgun, pistol, revolver, shotgun or rifle) for protection	.09	.28
2. Gun for Sport	Subject owns gun for sport-hunting, target practice.	.06	.23
3. White	0=Other 1=White	.19	.39
4. Hispanic	0=Other 1=Hispanic	.18	.39
5. Delinquent Values	Variable measuring student's commitment to delinquent values. Higher score indicates more commitment. Ranges from 1-4.	1.56	.51
6. Parent Gun Ownership	Indicates that parent owns a gun for sport	.05	.22
7. Peer Gun Ownership	Indicates subject has friends who own a gun for protection	.36	.48
8. Future Gang Member	A subject who is not currently in a gang, but joins in the subsequent wave	.02	.15
9. Current Gang Member	A subject who is currently in a gang	.05	.23
10. Past Gang Member	A subject who is not currently in a gang, but who was a member in the preceding wave	.05	.22

DELINQUENCY SCALES

General Delinquency

- * Carried Weapon
- * Used weapon with idea of seriously hurting someone
- * Hit someone with idea of hurting them
- * Threw objects at people
- * Used weapon to get money or things
- * Physically hurt someone to get them to have sex
- * Damaged property
- * Set fire
- * Avoided paying
- * Stole < \$5
- * Stole \$5-\$50
- * Stole \$50-\$100
- * Stole > \$100
- * Shoplifted
- * Snatched purse
- * Stole something from car
- * Bought/sold stolen goods
- * Went for a joyride
- * Stole a car
- * Forged a check
- * Used a credit card without permission
- * Cheated someone by selling them something worthless
- * Sold marijuana
- * Sold other drugs

Serious Delinquency

- * Broke into building
- * Stole \$50-\$100
- * Stole > \$100
- * Stole a car
- * Used weapon with idea of hurting someone
- * Involved in gang fight
- * Used weapon to get money or things
- * Physically hurt someone to get them to have sex

Street Delinquency

- * Stole \$50-\$100
- * Stole > \$100
- * Stole a car
- * Broke into building
- * Used weapon with idea of hurting someone
- * Used weapon to get money or things
- * Physically hurt someone to get them to have sex

- * Involved in gang fight
 - * Snatched purse
 - * Stolen something from a car
 - * Sold marijuana
 - * Sold hard drugs
 - * Knowingly bought, sold, or held stolen goods or tried to do any of these things
- Drug Sales
- * Sold marijuana
 - * Sold other drugs
- Gun Related Crime
- * Used a gun to make someone give you money or things
 - * Attacked someone with a gun
 - * Used a gun while in a gang fight

Table 3
RELATIONSHIP BETWEEN GANG MEMBERSHIP AND GUN/WEAPON
BEHAVIOR FOR MALES

	Wave 7	Wave 8	Wave 9
Own Gun for Protection			
Gang Member	24.4% ^a	30.6% ^a	36.7% ^a
Non-Gang Member	7.4%	7.7%	7.7%
Own Gun for Sport			
Gang Member	0.0% ^{bc}	11.1%	13.3%
Non-Gang Member	5.4%	5.7%	5.3%
Other Weapon for Protection			
Gang Member	40.0% ^{ac}	47.2% ^a	60.0% ^a
Non-Gang Member	24.4% ^{cd}	23.7%	18.4%
Peer Gun			
Gang Member	64.4% ^{ac}	77.8% ^a	86.7% ^a
Non-Gang Member	34.3%	34.2%	35.7%
Other Peer Weapon			
Gang Member	75.6% ^a	80.6% ^a	83.3% ^a
Non-Gang Member	37.6%	36.8%	37.2%
Carry Gun			
Gang Member	15.6% ^a	22.2% ^a	26.7% ^a
Non-Gang Member	4.1%	3.8%	4.3%

Significance tests: $P < .10$

a=Gang vs. Non-gang

b=Wave 7 with Wave 8

c=Wave 7 with Wave 9

d=Wave 8 with Wave 9

Wave 7 - Gang Members N=45

 Non-Gang N=607

Wave 8 - Gang Members N=36

 Non-Gang N=600

Wave 9 - Gang Members N=30

 Non-Gang N=608

Table 4
RELATIONSHIP BETWEEN GANG MEMBERSHIP AND GUN/WEAPON
BEHAVIOR AND DELINQUENT BEHAVIOR FOR MALES

	Non-Gang Members (N=548)	Future Gang Members (N=39)	Current Gang Members (N=81)	Past Gang Members (N=32)
Protection Gun ^{a,c}	14.2%	23.1%	30.9%	13.2%
Sport Gun	8.4	12.8	9.9	7.5
Weapon Protect.	39.4	46.2	46.9	39.6
Peer Gun ^{a,b,c}	55.1	53.8	77.8	52.8
Peer Weapon ^{a,b,d,e}	58.8	51.3	79.0	52.8
Serious Delinq. ^{a,b,d,e,f}	30.5	51.3	74.1	45.3
General Delinq. ^{a,b,c}	56.8	64.1	90.1	66.0
Street Delinq. ^{a,b,d,e,f}	35.4	53.8	80.2	52.8
Drug Sales ^{a,b,c}	10.2	7.7	34.6	17.0
Gun Delinquency ^{a,b,e}	3.1	2.6	13.6	0.0
Carry Gun ^{a,c}	8.6	12.8	21.0	5.7

Significance Tests: $P < .10$

a=Current with Past

b=Current with Future

c=Past with Future

d=Non-gang with Future

e=Non-gang with Current

f=Non-gang with Past

Table 5
MULTINOMIAL LOGISTIC REGRESSION PREDICTING GUN OWNERSHIP FOR
MALES (N=631)^a

	Parameter Estimates Protection Gun	Parameter Estimates Sport Gun	t value ^b
White	-1.76* .93 (-.07)	2.09** .46 (.28)	-5.25
Hispanic	-.44 .49 (-.03)	-1.20 1.29 (-.04)	
Delinquent Values	.25 .36 (.02)	.24 .44 (.01)	
Parent Sport Gun Ownership	-.22 1.19 (-.02)	1.68** .47 (.20)	-2.10
Peer Gun Ownership	1.89** .45 (.31)	.98** .43 (.09)	2.07
Future Gang Member	1.75** .77 (.27)	XX ^c	
Current Gang Member	.99** .52 (.12)	1.25** .64 (.12)	
Past Gang Member	.16 .72 (.01)	XX ^c	

* P<.10

** P<.05

^a Parameter estimates are provided with standard errors underneath. Probabilities are in parentheses.

^b Tests for significance of difference between subsample coefficients.

^c Parameters could not be estimated due to a lack of cases.