

**Post-Release Recidivism among Gang and Non-Gang Prisoners in Arizona
From 1985 through 2004**

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By

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Introduction

Research examining the scope and nature of community gang problems has exploded over the past thirty years. This body of work has almost exclusively focused on street gang members through the collection of data obtained from surveys of school youth (Esbensen et al., 1999), interviews with recently booked arrestees (Katz et al., 2005), observations of youth in the field (Klein, 1995; Spergel, 1995), and the examination of official police data such as gang lists (Katz et al., 2000). As a consequence, a deep and rich body of literature has developed toward the understanding of how factors such as community (Curry and Spergel, 1988), peers (Battin-Pearson, Kill, Abbot, Catalano, and Hawkins, 1998), drugs (Katz et al., 2005), family (Decker and Van Winkle, 1996), subculture (Spergel, 1995), and organizational structure (Decker et al., 2008;) are related to gang joining and subsequent offending. Significantly less, however, is understood about the scope and nature of the gang problem within prisons, and how gang membership in prison is associated with recidivism following release. This report examines the prevalence of gang membership in the Arizona prison system over a twenty year period, and compares post-incarceration recidivism between gang members and non-gang members. We begin by reviewing the prior research that has examined the prevalence of gang membership in prison and the relationship between prison gang membership and recidivism. Next we present our methodology and findings, and discuss their policy implications.

Literature Review in Brief

National estimates of inmate gang involvement have varied substantially. For example, in 1993, a national self-report survey of inmates estimated that about 6 percent of adult prisoners were affiliated with a gang (Bureau of Justice Statistics, 1993). On the other hand, Camp and Camp (1985) and Trulson et al. (2006) estimated gang membership in prisons to be less than 5 percent, while Knox (2005) estimated it to be at about 25%, and Lane (1989) estimated it to be higher than 80 percent. Likewise, state level estimates of prison gang membership have been found to vary substantially. For example, through the examination of official records, researchers have determined that about 25 percent of Illinois inmates were gang members (Olson et al., 2004), 16.7 percent of Arizona inmates were gang members (Griffin and Hepburn, 2006) and in Florida it has been estimated that about 5% of inmates are members of a prison gang (Cunningham & Sorensen, 2007).

While estimates of the prevalence of gang membership in prisons have varied significantly—in large part because of varying methodologies and varying definitions of gang membership—a burgeoning body of literature has consistently documented the relationship between prison gang membership and prison misconduct. For example, in Arizona, Griffin and Hepburn reported that prison gang affiliation was significantly related to prison misconduct, even after controlling for individual characteristics and prior criminal record. Likewise, in Florida (Cunningham and Sorensen, 2007), and in Texas (Ralph and Marquart, 1991), researchers reported that even after controlling for such factors as prior incarceration, seriousness of offense, time in prison, and socio-demographic characteristics, prison gang members were significantly more likely to be involved in prison misconduct than non-gang members. Furthermore, these researchers emphasized that while prison gang members comprised a small proportion of prisoners, they were responsible for a disproportionate number of misconduct violations. However, Gaes et al. (2002) examined the issue further and found that the relationship between prison gang membership and misconduct might not be as direct as some

researchers have reported. Specifically, Gaes et al (2002) examined the impact of gang affiliation on prison misconduct among over 80,000 Bureau of Prisons inmates. While the authors reported that gang members were significantly more likely to be involved in violent misconduct, the relationship was restricted to those with comparatively short sentences. Those gang members with longer sentences were reported to be less likely to be involved with violent prison misconduct.

While researchers are beginning to develop an understanding of the relationship between gang membership and prison misconduct, there has been even less research examining the relationship between inmate gang affiliation and the extent and nature of recidivism following release from prison. One of the first to examine the issue was Benda et al. (2001) who examined recidivism among a convenience sample of 414 adolescent serious offenders incarcerated at a juvenile correctional facility in Arkansas. The authors were interested in those factors associated with entry into an adult incarceration facility. During a two year follow up period they determined that about two-thirds of the incarcerated adolescences were later incarcerated in an adult facility. The strongest predictors associated with adult imprisonment were prior incarceration as a juvenile (prior to the study period) and such factors as early onset of delinquency, gang membership, and early alcohol and drug use.

Shortly thereafter Trulson et al. (2005) examined recidivism among a cohort of juveniles released from a large southwestern correctional facility. Their sample included 2,436 serious, violent, chronic youth who were followed for five years after their release. Analysis of official data indicated that about 85 percent were rearrested during the follow up period. Males, those with early contact with the criminal justice system, those who had more felony arrests, gang members, and those with mental health problems were significantly more likely to recidivate. The authors concluded that such factors as gang membership exude a strong enough influence on recidivism that increased supervision following release is warranted.

Huebner, Varano, and Bynum (2007) examined the relationship between drug use, gun carrying, and gang membership and recidivism among convicted serious offenders. They used a sample of 322 men aged 17 to 24 who, after serving no more than 18 months, were released from prison between June 1996 and September 2005. Recidivism among the sample was measured by reconviction, specifically, the time in months between release date and a new conviction. Huebner et al. (2007) found that institutional misconduct, race, drug dependence, and gang membership were significant predictors of recidivism. The authors suggested that institutional misconduct may be a meaningful indicator of sustained gang membership post-release, and that taking issues of institutional misconduct into consideration with pre-conviction gang membership could guide reentry plans for treatment and intervention services.

Largely focused on the timing of recidivism, Caudill (2009) collected self-report and official data from a sample of 2,436 incarcerated youth released during 1997 and 1998. Specifically, the study examined whether gang affiliation affected temporal patterns of recidivism, and if so, at what point did gang affiliation most impact recidivism. Gang affiliation was measured using self-reported gang affiliation (n=1,102) as a dichotomous classification (yes/no). Recidivism was defined as the number of days from release date until the individual's first post-release arrest. Caudill (2009) found that gang affiliates were significantly more likely to recidivate, and recidivate significantly sooner, than non-gang affiliates. The effect of gang affiliation on the timing of recidivism was statistically significant, and had the greatest impact on time between release and re-arrest at about four months after release. Caudill suggested the

importance of identifying prison gang members and focusing post-release supervision resources on these individuals in the first several months following their release.

To our knowledge, only two studies to date have examined the relationship between adult inmate prison gang involvement and post release recidivism. The first was conducted by Olson and his colleagues (Olson, Dooley, and Kane, 2004; Olson and Dooley, 2006). Olson and Dooley (2006) analyzed data from two samples: Illinois probationers discharged in November 2000 (n=3,364) and Illinois Department of Corrections (IDOC) releases (2,534) during the same time period. Data analysis revealed that of the parolee sample 75% of the gang members had been arrested within two years of release, compared to 63% of the non-gang parolees. Similarly, within the probationer sample, 67% of gang members had recidivated within two years, compared to 30% of non-gang members. These studies suggest that that prison gang involvement increases the odds of recidivism by a factor of 1.76 to 4.74.

Given uncertainty about the prevalence of prison gang involvement, and initial evidence suggesting that prison gang involvement greatly increases the odds of recidivism, it is important to investigate this issue further. Two pieces of the puzzle need to be better estimated. First, we need better estimates of the extent of the problem. What percent of prison inmates are involved in prison gangs? Second, we need more precise estimates of the effect of prison gang affiliation on recidivism. Armed with these two pieces of information, we will be better equipped to deal with problems associated with former prison gang members as they are released into the community.

Data

Data for this study come from two sources: Arizona Department of Corrections (ADC) and the Arizona Department of Public Safety (AZDPS). ADC provided an electronic database with each prison system entry in the state of Arizona from 1985 through 2007. Demographic data, such as age, gender, race/ethnicity, and citizenship status, as well as the criminal statute violation for which the sentence was imposed were included in the database. AZDPS provided a database that contained criminal history information for the prisoners in the ADC database containing data on the date and description of the criminal violation for each charge for each arrest of prisoners. Individuals in the two databases were matched using their Arizona State Identification Number (ASID). A total of 156,962 unique individuals were matched across the two databases. The sample was limited to include only those who were released with at least 3 years of follow-up data available (through December 2004) which decreased our sample to 106,020 unique offenders who entered prison at least one time during our sampling time frame.

The dataset from the ADC contained several pieces of information about gang membership. Beyond a dichotomous measure of gang involvement, these data contain information on specific gang affiliation. Given these affiliations, we were able to identify two kinds of gang members: 1) members of security threat groups, and 2) other gang members. Security threat groups are specific prison gangs that the ADC has identified as operating within the prisons, meriting special attention in order to ensure safe operation of the prisons. Combining the two datasets from the ADC and the AZDPS affords us the unique opportunity to assess the impact of prison gang involvement and street gang affiliation relative to no gang affiliation on the recidivism of prison releases.

Our measure of recidivism in this report is re-incarceration.¹ Recidivism in this study was measured and examined in two ways: (1) community supervision revocation, which is a return to prison due to failure in community supervision; and (2) convicted and sentenced for the commission of a new crime, which is the return to prison due to conviction for a new crime. In addition, we combined these two measures of recidivism to examine rates of any return to prison.

Analysis

We first describe the prevalence of prison gang and other gang affiliation in these data. Figure 1 shows the percent of new prison admissions classified as prison and street gang members from 1985 to 2004. The percent of prison gang members remains remarkably stable throughout the first 15 years of this time period, remaining at 3 percent for all but one of these years, when it was 4 percent. However, beginning in 2001, the percent of new prison admissions classified as prison gang members begins to decline. Only one percent of 2004 admissions were classified as prison gang members. Street gang affiliation patterns appear to follow a pattern completely distinct from prison gang affiliation. Unlike the relative stability of prison gang affiliation rates from 1985 to 2000, street gang affiliation rates nearly tripled, from 4 percent in 1985 to 11 percent in 1999. After this point, however, they display a remarkable instability, fluctuating as much as 5 percentage points from year to year, particularly in the last few years. Further research is needed to determine the cause of these fluctuations (i.e., change in imprisonment practices, change in data generation process, etc). If prisoner records are revised during their prison stays, for example, this could explain the tailing off of prison gang affiliation in the latter years. Likewise, anomalies in the percentages of admissions classified as street gang members likely do not reflect conditions on the street, but more likely have to do with the process by which these data are generated. As these data are revised, we may see these trends level out.

We also examined the characteristics of those offenders classified as street and prison gang members. Should these groups differ significantly with respect to their recidivism rates, part of the story may lie in pre-existing differences evident at admission. Table 1 presents descriptive statistics for non-gang members, street gang members, and prison gang members for the entire sample. It is clear from these descriptives and both prison gang and street gang members differ quite a bit from non-gang prisoners. Nearly all prison gang members are male (98.2%) compared to 88% of non-gang members. Prison gang members also tend to be younger—7.3 years on average—than non-gang members, and they are over twice as likely to be Hispanic. In addition, prison gang members have 83% longer prison sentences than non-gang members (33 months vs. 18 months), accompanied by a higher prevalence of property and violent offenses. Interestingly, however, prison gang members and non-gang members differ very little in terms of criminal histories.

In most respects, prisoners classified as street gang members more closely resemble prisoners classified as prison gang members than non-gang members. They tend to be younger than non-gang members. They're more likely to be male, Hispanic, and are more likely to have a property or violent offense for the current conviction compared to non-gang members. However, in terms of sentence length, they are much closer to non-gang members. Non-gang members

¹ It is important to note that data discrepancies prohibited the utilization of re-arrest as a measure of recidivism.

average 18 month sentences, street gang member's 22 month sentences, while prison gang members average 33 month sentences.

Without adjusting for the pre-existing differences, Table 1 shows the differences in recidivism rates between non-gang members, street gang members and prison gang members. We find large differences in recidivism rates between these groups, again without taking into account pre-existing differences between these groups that may explain these patterns. Prison gang members are 2.3 times as likely, and street gang members are twice as likely, to return to prison for a new criminal charge compared to non-gang members. Likewise, prison gang members are 1.5 times as likely, and street gang members are 1.9 times as likely to return to prison due to community supervision revocation, compared to non-gang members. Overall, street gang members are the most likely to return to prison, with an 83.2% 5-year recidivism rate, compared to 77.4% for prison gang members and 42.8% for non-gang members. In terms of odds ratios, compared to non-gang members, street gang members have 6.6 times, and prison gang members 4.6 times higher odds of recidivism.

In order to adjust these differences in recidivism rates for known pre-existing differences, we ran a series of logistic regression models controlling for gender, age, race/ethnicity, conviction type, arrest history, and most proximate arrest. It is still possible that unobserved factors could account for differences in recidivism uncovered by these models, but these bring us closer to an estimate of the impact of prison- and street-gang affiliation on recidivism independent of other differences. Table 2 shows the results of these models. Because of the very large sample size, nearly all estimates are statistically significant, so we primary focus on the magnitude of our estimates. The most notable result is that large differences in recidivism rates persist. Street gang members continue to have 5.4 times higher, and prison gangs 4.7 times higher odds of recidivism than non-gang members, even after controlling for numerous demographic, arrest history and current conviction characteristics. Surprisingly, therefore, the characteristics that we controlled for did very little to reduce the magnitude in recidivism differences between street and prison gang members and non-gang members. In fact, for prison gang members, the magnitude of the difference slightly increased (from 4.6 to 4.7 higher odds).

The patterns we observed in the descriptive statistics maintained in our logistic regression results when looking at different types of recidivism as well. Street gang members are more likely to recidivate due to community supervision revocation whereas prison gang members are more likely to recidivate due to new criminal charges. Both groups are more much more likely to recidivate than non-gang members.

Discussion

Compared to previous work in this area, there are several features of our analysis of interest, and several areas that merit further inquiry. First, with respect to the prior literature on the prevalence of gang membership in prisons, ours is on the lower end of the spectrum. Just 1 to 4 percent of each admissions cohort was identified as prison gang members, and another 4 to 13 percent were identified as street gang members. Because of the nature our merged dataset, we were able to uncover several pre-existing differences between gang members and non-gang members that could potentially lead to post-release differences in recidivism. Without adjusting for these differences, we found that both prison and street gang members were much more likely to recidivate, with 83.2 percent of street gang members and 77.4 percent of prison gang members back in prison within 3 years, compared to 42.8 percent of non-gang members. Prison gang

members were more likely to recidivate due to new offenses, whereas street gang members were more likely to recidivate due to community supervision revocation. Surprisingly, the magnitude of these recidivism differences was largely unaffected even after adjusting for sex, race/ethnicity, age, arrest history and current conviction characteristics. Compared to Olsen and colleagues' work on prison gangs in the Illinois Department of Corrections, we found much larger effects of gang membership on recidivism. Some of this difference could be due to different definitions of recidivism as they used re-arrest, while we used re-commitment.

Future work on this issue using these data needs to advance in several ways. First, we need a better understanding of the process by which prisoners are identified as street or gang members in order to understand how the large fluctuations in street and gang membership rates came about in the early 2000s. Second, we need to further understand other pre-existing characteristics that could explain the substantial differences in recidivism between gang member inmates and non-gang member inmates. If even a fraction of these recidivism differences are due to gang affiliation, then this is certainly a portion of the prison population that merits heightened attention.

Figure 1: Yearly Admissions – Percentage of new admissions who are gang members by year

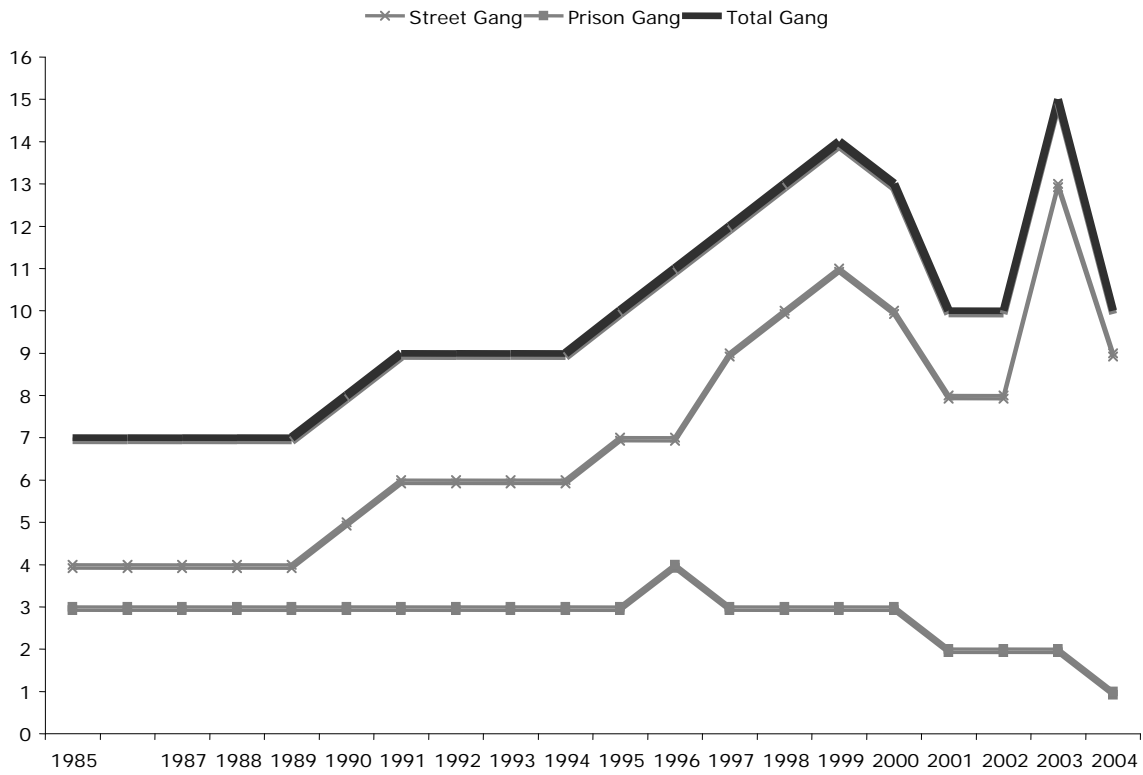


Table 1: Profile of the 1985-2004 releases

	Non Gang Members N=95,036	Street Gang Members N=7,845	Prison Gang Members N=3,139
Gender			
Male	88.0%	93.2%	98.2%
Female	12.0%	6.8%	1.8%
Age	31.42 (9.40)	23.11 (5.77)	24.14 (6.31)
Race			
White	50.2%	30.6%	20.6%
Black	11.2%	17.7%	4.4%
Hispanic	31.1%	56.7%	68.4%
Arrest History			
# Prior Arrests	5.17 (5.22)	5.33 (4.92)	5.09 (5.22)
# Prior Felony Arrests	2.83 (2.21)	2.97 (2.15)	3.10 (2.45)
# Prior Charges	11.24 (10.86)	12.41 (11.34)	12.41 (11.34)
Most Proximate Arrest			
# Charges	2.87 (2.97)	3.09 (2.96)	3.09 (2.97)
Current Conviction			
Sentence Length (months)	18.03 (23.23)	21.68 (23.71)	33.03 (33.50)
Property Offense	28.8%	43.2%	41.5%
Violent Offense	16.7%	27.9%	30.1%
Sex Offense	3.7%	1.3%	1.6%
Drug Offense	25.9%	22.2%	25.3%
Any return to prison	42.8%	83.2%	77.4%
Community supervision	28.0%	53.3%	42.9%
revocation	14.8%	29.9%	34.5%
New criminal charge			

Table 2. Predicting Recidivism Using Logistic Regression

	Any Prison Return	Community Supervision Revocation	New Criminal Charge
Gang Status (no gang is reference)			
Street Gangs	1.68	.93	.65
Prison Gangs	1.54	.70	.95
Male	.233	.01 ns	.41
Race/Ethnicity (all others are reference)			
Black	-.27	-.30	-.003 ns
Hispanic			
Age	-.04	-.02	-.03
Arrest History			
# Prior Arrests	.08	.05	.02
# Prior Felony Arrests	.06	.004 ns	.09
# Prior Charges	-.004	.001 ns	-.01
Most Proximate Arrest			
# Charges	-.007	-.006	-.01 ns
Current Conviction			
Sentence Length (months)	-.008	-.004	-.006
Property Offense	.32	.26	.12
Violent Offense	-.04	-.07	.04 ns
Sex Offense	.012 ns	-.20	.19
Drug Offense	.016 ns	.07	-.07
-2 LL	131416.13	123619.77	90931.02
Model χ^2 (15)	15133.84	6523.77	3998.43
Cox & Snell	.13	.06	.04
Nagelkerke	.18	.08	.06

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Appendix A: Data Dictionary

<i>Arrest History</i>	<i>All arrests prior to prison entry, excluding the most proximate</i>
Prior arrests	Total number of arrests before prison entry
Prior felony arrests	Total number of arrests with at least one felony charge
Prior charges	Total number of charges across all arrests
<i>Most Recent Arrest</i>	<i>Prior arrest most proximate to prison entry</i>
Number of charges	Total number of charges
<i>Conviction</i>	<i>Information based on current incarceration:</i>
Sentence length	Months incarcerated
Property Offense	Convicted of theft, property crime, burglary
Violent Offense	Convicted of homicide, assault, kidnapping
Sex Offense	Convicted of rape, sexual assault, molestation
Drug Offense	Convicted of any type of drug offense
<i>Recidivism</i>	
Any return to prison	Any re-incarceration in the Arizona State Prison system within three years of release
Community supervision revocation	Re-incarceration due to community supervision failure
New criminal charge	Re-incarceration due to the commission and conviction of a new crime after release
