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Introduction

Communities and families figure prominently in discussions of crime and crime control. While there is broad consensus about the beneficial effects of community on crime there is much less consensus about how weak communities can be strengthened and strong communities preserved (Bursik and Grasmick, 1993; Taylor, 1999; Skogan and Maxfield, 1981; Sampson, Radenbush and Earls, 1997). The role of criminal justice agencies in community building and preservation is a matter of particular controversy (Moore, 1992; Skogan, 1990; Lynch and Sabol, 2000; Taylor, 1999, 2001). Some see the police, courts and correctional agencies as playing a crucial role in this process by removing or controlling persons who disrupt constructive interaction in communities (Wilson and Kelling, 1982; Dunworth and Mills, 1999; Moore, 1992). Others maintain that the police and other criminal justice agencies (especially correctional organizations) undermine the legitimacy of community institutions (Lynch and Sabol, 2000; Rose and Clear, 1998; Travis, et al., 2001).

There is relatively little research that informs these issues directly (Lynch and Sabol, 2000). The vast majority of research on communities and crime has focused on the role of community in controlling crime and not the contribution of criminal justice policy to the building and maintenance of community (Skogan and Maxfield, 1981). Evaluations of community policing have emphasized crime reduction, fear reduction and citizen satisfaction but not community organization per se (Skogan, 1990; Trojanowicz, 1982)[1]. These studies have often included only a few communities. Moreover those few studies that have examined the effects of coercion on communities in a large number of areas over a long period of time have failed to take account of the problems of nested data and simultaneous equation bias that often afflict these data(Rose and Clear, 1998).[2] As a result, their estimates of the effects of coercion on community organization are confounded with the effects of crime on communities.

This report contributes to our understanding of the role of criminal justice policy in building and maintaining communities by directly examining the effects of arrest and incarceration policies on 30 neighborhoods in Baltimore over a ten-year period. By examining relatively large number of communities over a long period of time, we are more likely to detect effects of patterns of coercion on community organization, if there are any. Hierarchical Linear Models (HLM) and two stage least squares are employed to take account of statistical problems resulting from nested data and simultaneous equation bias.

2.0. CRIME, COERCION, AND COMMUNITIES

Researchers have examined extensively the link between communities and crime (e.g., Shaw and McKay, 1942, 1969; Reiss and Tonry, 1986; Bursik and Grasmick, 1993) and the link between coercion and crime (e.g., Blumstein et al, 1978; Cameron, 1988; Levitt, 1996, 1998; Nagin, 1998). Much less has been done to understand the effects of coercion on community. Some recent work has addressed the impact of coercion on communities (e.g., Rose and Clear,

[1] Throughout this discussion the term community organization is used to refer to persistent patterns of interaction among community residents and the positive sentiments toward and attachments to the area that flow from these interactions.

[2] For a discussion of the problems posed by nested data see (Bryk and Raudenbusch, 1993). For a useful approach to handling simultaneous equation bias see (Leavitt, 1995)

1998; Nightingale and Watts, 1996) but this work is largely speculative and focuses exclusively on incarceration policies. Evaluations of community policing shed some light on the effect of police policies on fear and citizens satisfaction but not community organization per se.

2.1. Crime and Communities

A great deal of very good work has been done to demonstrate that communities organization can affect the level of crime in a geographical areas. Human ecologists in the Chicago school demonstrated that major social structural changes such as urbanization and immigration created areas with major cities wherein social control was weak and crime was high (Shaw and McKay, 1942). These macro social forces resulted in certain communities being populated by mobile and heterogeneous populations who could not negotiate an acceptable social order. The result of this "social disorganization" was high crime rates.

Since the early work of the human ecologists, scholars have investigated in a very detailed manner how community institutions contributed to crime control. Ralph Taylor and his colleagues explored the inter-relationship between the physical environment, community attachments, fear of crime, and criminal victimization (Taylor, Gottfredson and Brower, 1984; Covington and Taylor, 1991; Perkins, Brown and Taylor, 1996). Their emphasis was on understanding the process by which communities affected crime and crime affected communities. Skogan and Maxfield (1981) examined how communities responded to the crime problem and specifically how community responses to crime reduced both crime and the fear of crime.

In the early 1990s Bursik and Grasmick (1993) developed a theory for understanding the role of community in the production and control of crime. This theory went beyond those of the earlier human ecologists by not only acknowledging the role of community on crime control but by situating community within a larger system of social control. Bursik and Grasmick (1993) identified three major sources of social control—private controls, parochial controls and state controls. Private controls referred to intimate groups such as the family. Parochial controls referred to other face-to-face groups that were not intimates and specifically community. State control referred to actions taken by state agencies such as the police or schools. In their framework, social control referred not only to crime control but also to all manner of self-determination. They adopted Janowitz's (1975) view that social control was the ability of groups to set and achieve collective goals. So private, parochial and state controls promoted the consensual order required to set and achieve collective goals.

A number of empirical studies conducted in the eighties provided empirical support for the importance of Bursik's parochial controls in reducing crime. DuBow and Emmons (1981) describe communities with a stronger sense of solidarity, more positive social interactions, and where satisfaction with one's community is high, as being be those areas with more effective informal social control. Taylor (1999) explicitly tested the very popular notion that signs of decay in the physical environment contributed to social disorganization in urban neighborhoods (Wilson and Kelling, 1982; Skogan, 1990). He found little support for this notion. Sampson, Radenbush and Earls (1997) focused more narrowly on crime control and specifically on the ability of community to mediate the effects of class on the distribution of crime. They looked at what they called "collective efficacy" which is the willingness of community residents to enforce the norms of the community—to control the behavior of children, to stop or otherwise intervene in criminal

events. Communities that were high on collective efficacy had lower crime rates than those who did not. This was even the case in communities with high concentrations of poverty.

The cumulation of the work on community and crime, then, demonstrates clearly that community affects crime. Organized communities will have lower crime rates than disorganized communities. Much of the reason for these lower crime rates is the robustness of parochial controls operating in these neighborhoods and particularly the willingness of residents to engage in informal social control.

2.2. Coercion and Crime

The role of coercion on crime generally has been extensively examined (e.g., Blumstein et al, 1978; Levitt, 1996; Nagin, 1998). The results of these studies are mixed largely because the tests of deterrence and incapacitation have been conducted on a wide variety of punishments using many different data sources. In reviewing the work done on deterrence Nagin (1998) concludes that the weight of the evidence points to a deterrent or incapacitation effect generally. He cautions that this does not mean that all forms of punishment will have these deterrent effects in every circumstance. It will depend upon the nature of the punishment, the implementation of that punishment, the target behavior and the social context in which it is applied.

Much of the work linking punishment to crime reduction has examined the effects of incarceration, but there have been a number of studies that have addressed the effects of police activity and specifically arrest. Wilson and Boland (1978) found that aggressive traffic enforcement was associated with lower robbery rates in 35 cities. Sampson and Cohen (1988) also found a negative effect of aggressive arrest policies for vice and other minor crimes on robbery in 171 cities.[3] Other studies of specific programs support the argument that aggressive patrol practices including arrest will reduce some forms of crime (Sherman, 1992; Boydstun, 1975).

While the evidence for the effects of aggressive enforcement and incarceration on crime seem persuasive, the process by which coercion reduces crime is less clear. Wilson and Boland (1978) attribute the negative effect of aggressive patrol practices to the deterrent effects of increased surveillance. Sampson and Cohen (1988) acknowledge the role of deterrence but allow for other process such as the re-emergence of informal social control. The deterrent effect of punishment is due to the activation of informal social control, i.e., stigmatization.

Most of the empirical tests of the deterrent or incapacitation effects of coercion on crime have been done at very high levels of geographic aggregation such as the state, county, or city. It is not clear how applicable these results are to the neighborhood level. Given that neighborhoods

[3] There is some reason to be skeptical that the results of these studies can be applied directly to residential neighborhoods. First, crime reductions in the Wilson and Boland and the Sampson and Cohen work were observed for robbery but not for burglary. Robbery is largely a commercial area crime. It occurs in and around "bright light districts", public transportation and other non-residential areas and many of its victims are commercial establishments and not person. These areas are more accessible to police patrol and manipulation than crimes that occur in more residential areas. Second, both studies were conducted at the city level and it is unclear just how applicable these results may be to small and more communal entities like neighborhoods. So, while the is some evidence that aggressive police arrest polices reduce robbery on a city-wide basis, it is not clear that they will have the same effect on other types of crime and at the neighborhood level.

are small areas, the likelihood that crimes may be perpetrated in one neighborhood and the offender live in another is much higher than in a city, county or state. Hence there may indeed be a negative effect of incarceration on crime but not in the neighborhood in which the incarcerated offender lived.

2.3. Coercion and Communities: Policing Policies

Work addressing the inter-relationship of communities and crime has devoted relatively little attention to the effects of state controls on communities. Bursik and Grasmick (1993) discuss the importance of state controls as does Sampson (1995), but they do not investigate these effects empirically. The growing literature on community policing can shed some light on the issue of whether police arrest policies reduce crime at the neighborhood level and whether that reduction occurs because of deterrence or because of the re-emergence of informal social control. Many of these studies have focused more on the effects of police strategies on fear of crime and citizen perceptions of the community and the police than they have on crime reduction per se (Moore 1992; Skogan 1990). Consequently, these studies suggest that intensive police service seems to enhance citizen assessments of their neighborhood. These positive valuations of neighborhood have been to positively correlate with the factors that we have defined as community organization.

These studies were also limited in a number of ways that reduce their ability to inform the question of how police arrest policies influence communities. First, the aspects of community organization that were assessed in these evaluations were very limited to crime control activities and excluded extensive information on the persistent patterns of interaction among community residents that constitutes community organization, i.e., neighboring, participation in voluntary associations in and out of the area, shopping activity and other routine chores, as well as explicit questions on the willingness of residents to engage in informal social control. These patterns of interaction are much more extensive than crime control activities and they serve as the infrastructure that allows cooperation on more specific issues of crime control. Second, the analyses done in these evaluations did not include many factors other than the nature of police services that could have accounted for the changes observed even in the limited aspects of communities that were observed. Third, very few communities were included in these evaluations. This limited the range of community contexts that could be taken into account in assessing the effects of police service on community organization. Fourth, the evaluations took place over a very short period of time that may not have been sufficient to detect the effects on community organization. For all of these reasons, these evaluations that provided very useful information on the success of community policing programs have much less to say about the effects of police policies on community organization.

In sum, we know very little with certainty about the effects of police arrest policies on community organization generally and on collective efficacy specifically.

2.4. Coercion and Communities: Incarceration

There is virtually no theory or empirical work that associates imprisonment directly with building or supporting less coercive institutions of social control and specifically communities. Most of the beneficial effects of imprisonment on less coercive institutions of social control are expected to occur through crime reduction. So, removing criminals from communities or plausibly

threatening incarceration can reduce crime rates in neighborhoods or the fear of crime. This, in turn, would permit the interaction among neighbors that provides the informal controls that promotes community organization and reduces neighborhood crime. These types of causal processes underlie programs like Weed and Seed (Dunworthy and Mills, 1999). These models have been discussed but not tested fully.

There are various routes and processes by which incarceration can adversely affect less coercive institutions of social control. Darity and Myers (1994) and Lynch and Sabol (2002 forthcoming) speculated that incarceration would reduce the marriageability of men and thereby reduce marriage formation. This, in turn, would increase the number of female-headed households in areas with high incarceration and ultimately crime rates because of the absence of supervision for young males in these areas (Sampson, 1987). They speculated that the marriageability of men would be reduced by 1) their removal through incarceration and 2) the "taint" that ever being incarceration has in the job market.

Rose and Clear (1998) describe a much more elaborate set of processes through which incarceration effects less coercive institutions of social control. They expanded Bursik and Grasmick's (1993) General Systems Model (GSM) to take account of the effects of incarceration. The GSM describes how community disorganization leads to crime. The principal exogenous variables in the model are heterogeneity, mobility and socio-economic status. These variables can facilitate or inhibit interaction in communities that allow residents of that community to set and achieve collective goals. Rose and Clear (1998) elaborate this basic model by hypothesizing that incarceration will introduce mobility and heterogeneity into communities and thereby abet the process of disorganization. They also hypothesize that massive use of incarceration in communities will lessen the stigma (and hence the effectiveness) of this type of public control for community residents.

These theories describing how incarceration affects communities have not been tested empirically. Only Rose and Clear have examined the relationship between incarceration rates and crime at the neighborhood level.[4] Their work, however, did not take account of simultaneous equation bias in estimating the effects of incarceration on crime. Moreover, Rose and Clear did not assess the impact of incarceration on community organization *per se*. They were interested in assessing the effects of the geographical concentration of incarceration on perceptions of the legitimacy of the criminal justice system. Community was the context for vicarious experiences with incarceration and not the entity that was being affected by incarceration. Residence in a neighborhood with high incarceration rates meant that your vicarious experience with incarceration or the collateral effects of incarceration would be high. Their work does not address the effects of incarceration on community organization.

2.5. Contributions of this Study

This work builds upon the literatures described in the foregoing sections by directly addressing the question of how aggressive arrest and incarceration policies affect community organization and ultimately the willingness of area residents to engage in informal social control or collective efficacy. Previous studies have assessed the effects of coercion on crime and fear of

[4] Gottfredson and Taylor (1988) included neighborhood-level incarceration rates in their study of recidivism outcomes. The rates were used to predict successful outcomes and not to assess the effects neighborhood crime rates or the social organization of these areas.

crime, but not on community organization or collective efficacy. We will not only test the direct effects of arrest and incarceration policies on informal social control but also the effects of these polices on the social organization of the neighborhood that is believed to be a prerequisite to collective efficacy. We will examine not only the alleged beneficial effects of these policies, e.g. crime reduction, but also the possible negative effects that these polices can have on collective efficacy and the social organization of communities.

3.0. The Data

The data for this study came from four primary sources that are part of a larger study examining crime, coercion and the community. Ralph Taylor collected one data set in his study of Baltimore neighborhoods to examine the relationship between crime and social organization in communities in 1982 and 1994. The data included aggregate community level information on demographics, socioeconomic attributes and crime rates. In addition they interviewed residents within each community about community attachment, cohesiveness, participation, satisfaction, and experiences with crime and self-protection. Resident surveys were conducted on 66 and 30 communities for 1982 and 1994, respectively. The current study uses data collected from the 30 neighborhoods for 1994. The number of surveys per neighborhood ranged from 18-24 with an average of 23 respondents.

The police data describe both the offenses recorded by the police as well arrests made by the police. The data represent incident level offense and arrest data for 1987 and 1992 recorded by the Baltimore Police Department. The offense data were located within the neighborhood where the incident happened and the arrest data were coded into the neighborhood in which the offender lived.

The Maryland Department of Public Safety and Corrections (DPSC) provided the third set of data. These data included all of the admissions to and releases from prison in neighborhoods in Baltimore City and Baltimore County for the years 1982 to 2000. As with the arrest data, these addresses were geo-coded and associated with the appropriate neighborhood in Baltimore City.[5]

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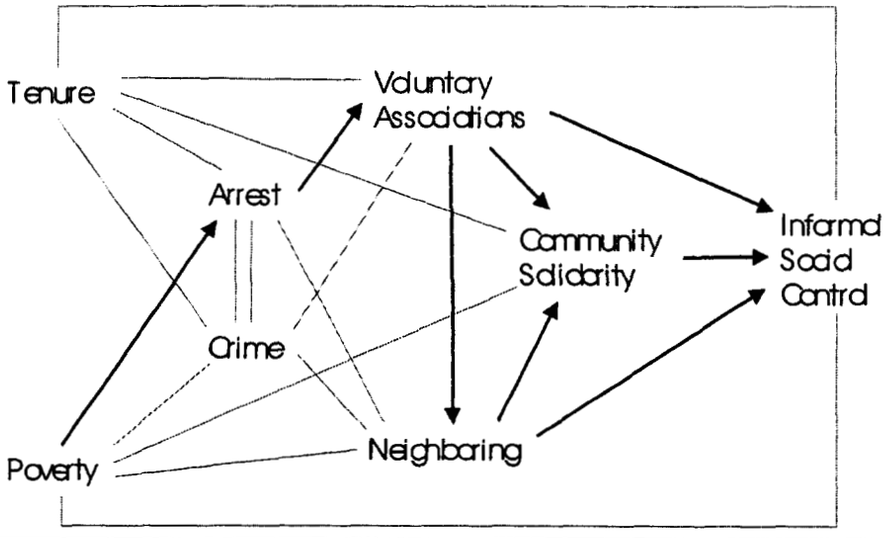
[5] Corrections Department personnel estimated that almost 50 percent of admissions and releases would not have address information on their residence at the time of admission and release. When the data from DPSC was compared to the county-level data on admissions from the National Corrections Reporting Program (NCRP) for the six-year period 1993 to 1998, on average the data from DPSC was 67 percent of the admissions in the NCRP from Baltimore County. This coverage rate ranged from 87 percent in 1993 to 58 percent in 1998. This would suggest that the admissions and release data used here will underestimate incarceration in neighborhoods by about one-third. There is no reason to believe, however, that this underestimate should differ across communities. Consequently, the relative position of neighborhoods with regard to admissions and releases from prison should be unaffected by this under estimation of the volume of incarceration.

4.0. TESTING THE MODEL OF THE EFFECTS OF ARREST ON COMMUNITY ORGANIZATION AND COLLECTIVE EFFICACY

4.1. Reviewing the Model for Arrest

Our model explains the effects of arrest policies on community organization and ultimately an individual's decision to engage in informal social control (Figure 1). This decision is influenced by both the attributes of the neighborhood and the attributes of the individual. At the individual level the willingness of residents to engage in informal social control is driven by the amount of interaction they engage in with their neighbors and the extent to which they have positive attitudes toward the neighborhood and feel as if they belong to the neighborhood. High levels of interaction among neighbors in the daily activity of the area lays the foundation for the more specific mobilization of these networks for activities such as informal social control. Neighbors who interact in the Advisory Neighborhood Council (ANC), for example, will find it easier to cooperate on the local school funding drive. Residents who borrow and lend tools to each other are more equipped to cooperate on other endeavors. The precedent is there and if the prior interaction was mutually beneficial additional interactions are likely to follow. This type of positive interaction will lead to an understanding of and a positive attitude toward neighbors and the neighborhood. This understanding and trust will encourage neighbors to engage in informal social control (Hackler, Ho and Urquhart-Ross, 1974). They will intervene in minor disorders because there is a shared belief about appropriate behavior and the fact that this belief is shared encourages residents to engage in informal social control. Neighbors have the expectation that the norm will be observed. Consequently invoking the norm in this context is likely to bring about compliance because the belief is shared (and both parties know that) or because there are others in the area who will support the enforcement of the norms. Without the foundation of persistent patterns of interaction and solidarity, invoking norms can be unproductive and even dangerous. Residents are much less likely to enforce norms when they are not sure that others in the neighborhood will agree and acquiesce to the norm or to lend support in the request made of others.

Figure 1. Individual's Decision to Engage in Informal Social Control



At the neighborhood level, the stability of the area, the amount of crime and the amount of coercion on the part of criminal justice agencies sets the context for informal social control. Stable neighborhoods offer the continuity necessary for interaction between residents. Stability refers to the low rates of residential mobility as well as constancy in the economic status of the neighborhood population. This permanence encourages and provides the opportunity for interaction among neighborhood residents which results in shared norms for appropriate behavior and a greater willingness to enforce these norms through informal social control. Crime in the neighborhood will inhibit interaction and weaken solidarity. The actual risk of crime or the fear of criminal victimization will reduce the level of interaction among neighbors and thereby reduce levels of solidarity and the willingness to engage in informal social control. Aggressive arrest policies will reduce crime or fear and thereby encourage the interaction among neighbors that builds shared norms of appropriate behavior and solidarity and encourages informal social control.

4.2. Operationalizing the Model

The development of the measures for testing the arrest model were derived from both community level census data and from information reported in the residential survey. Census data for 1980 and 1990 were used to develop the measures for the community level. Police record information and census data were used to operationalize coercion. Measures of neighboring, voluntary associations, solidarity, residential length of stay and informal social control were all developed using the individual level survey data. Questions from the survey were combined into scales for each of variables. The measurement of variables in the model is described in Table 1. Table 2 displays the univariate descriptives for each variable.

Table 1: Measures of Variables in the Model

Variable	Operationalization
Coercion: Arrest	1987 and 1992 arrest data from the Baltimore Police Department was geo-coded using MapMarker.[6] Arrest rates were calculated using population information from 1990 census data. Total arrest, violent arrest, property arrest, public order arrest, drug arrest rates were generated for each of the 30 neighborhoods surveyed in 1994. The percent change in the arrest rate from 1987 for each measure, using the 1987 and 1992 data
Crime Rates	Total annual crime rates were calculated by dividing the total crimes reported to police in a given year by the 1990 census population counts. We use a change rate from 1987 to 1992 to follow the arrest change rates generated.
Community Poverty Scale	A neighborhood poverty change scale was constructed by summing the percent change in vacant homes and the percent change in households below the poverty level
Residential Stability	Residential stability is measured by the average tenure of the survey respondents within each neighborhood.
Informal Social Control (collective efficacy)	Informal social control is defined as the individual's willingness to intervene or react when deviant behavior (i.e., behavior against community norms) occurs. This variable was constructed using four questions asking the individual about potential intervention in neighborhood burglaries and with rowdy teens.
Community Solidarity	Community solidarity was measured by a series of questions about the respondents' attachment to their block and their neighborhood. The responses to the questions were summed to form a community solidarity scale.
Neighboring	A neighboring scale was developed from questions related to interactions among neighbors including behaviors such as visiting, running errands, borrowing tools, working together to improve the block, watching one another's homes, taking in their mail if away for an extended period of time or exchanging household keys. Answers to the questions were summed to form a neighboring scale.
Voluntary Associations	The level of participation in voluntary associations was measured by simply adding the number of organizations (0-9) in which an individual claimed membership. The type of organizations asked about included neighborhood associations, church, PTA, youth group, recreation center, political club, block club, social club or other type of community organization
Individual and Community Controls	Individual controls include gender, race, educational level, children, home ownership, tenure in the area and marital status. Community controls include median household income.

[6] For 1987 and 1992 we matched approximately 90% of the arrest incidents. Reasons for non-matches were primarily administrative. That is, either spelling errors or missing information such as a street number prevented a confident match

Table 2. Summary Statistics

Variable	Min.	Max.	Mean	SD
Community Level Variables				
Crime rate change	-28	139	49.96	31.86
Total arrest rate change	-33.33	169.32	42.48	50.76
Violent arrest rate change	-100.00	225.00	58.57	88.73
Drug arrest rate change	-100.00	540.00	61.38	152.51
Public order arrest rate change	-100.00	500.00	18.20	114.93
% change in poverty scale	-122	1005	117.65	191.29
Median family income	32,100	382,804	144,532	95,040
Average neighborhood tenure	4.71	29.59	18.92	5.41
Individual Level Variables				
Informal social control	0	4	2.01	1.41
Education level	0	1	.81	.39
Community solidarity	4	12	9.08	2.13
Neighboring	0	7	4.49	1.92
Voluntary associations	0	7	.90	1.19
Gender (female)	0	1	.61	.49
Race (African American)	0	1	.33	.47
Children	0	1	.27	.45
Married	0	1	.52	.50
Residential tenure	0	85	18.81	16.26
Homeowner	0	1	.75	.43

4.3. Model Specification

The conceptual model of the effects of arrest on community organization and collective efficacy as presented in Figure 1 is not simple to estimate. First, the model is necessarily complex. Arrest policies can affect collective efficacy and community organizations in a variety of ways, some direct and others indirect through other variables in the model. These direct and indirect effects must be estimated in a system of equations and not simply one equation as is customary in this field. Second, the model is not recursive. Not every variable at one point in the model is a function of variables at prior points in the model. The relationship between crime and coercion is obviously reciprocal—crime affects arrest and arrest affects crime. [7] This reciprocal effect will bias the coefficient describing the effect of coercion on crime. Using an instrumental variable and two stage least squares methods is one way of taking this problem into account, providing that a useful instrument is readily available. Third, the data are nested. The data include information on the individuals living in a neighborhood as well as information on the neighborhoods themselves. Prior research has shown that using OLS regression or the General Linear Model with nested data violates some of the assumptions of these techniques and can

[7]The endogeneity problem can also affect the relationship between coercion and informal social control. It is not clear immediately whether informal social control is affected by arrest or arrest is affected by informal social. This problem is ameliorated somewhat in this model by the fact that informal social control is measured at the individual level and coercion is measured at the community level. It is less likely that collective and individual characteristics will be due to a common cause than it is that two phenomenon measured at same level would be.

underestimate the effects of the neighborhood relative to the individual-level variables (Bryk and Raudenbush, 1998).

In light of these complexities, we will estimate three different types of models. The first was a single equation OLS model testing the direct effects of community level arrest rates on collective efficacy while holding other variables in the model constant. Direct effects of arrest on collective efficacy are posited in the conceptual model. The second set of models employed instrumental variables and two stage least squares procedures to estimate the full model presented in Figure 1. This model would permit estimating the sum of direct and indirect effects that variables in the model have on community organization and collective efficacy. The final set of models was estimated using hierarchical linear models (HLM) to assess whether the OLS models underestimated the effects of neighborhood-level variables on community organization or collective efficacy. For brevity, only the HLM models for arrests and incarceration are discussed here.

4.4. Estimating the Effects of Arrest

Arrest rates have negative effects in the HLM models (table 2). Respondents living in communities with higher arrest rates participate in voluntary associations less than those living in neighborhoods with lower arrest rates. Higher arrest rates are also associated with lower levels of community solidarity. The HLM models show a marginally significant effect of arrests on neighboring. The direct effect of arrest on participation in informal social control is not statistically significant. In general, the HLM models show a negative effect of arrest rates on aspects of community social organization and no effect of arrest rates on participation in informal social control.

The results from the HLM models confirm and reverse some of the findings obtained from using OLS.[8] The negative effects of arrest rates on aspects of community organization observed in the OLS models are also observed in the HLM models, but the coefficients are more significant statistically with the latter method than they are with the former. Respondents living in communities with higher arrest rates participate in voluntary organizations less than those in neighborhoods with lower arrest rates. Higher arrest rates are also associated with lower levels of community solidarity. The HLM models show a marginally significant negative effect of arrest rates on neighboring. The relationship between arrest rates and neighboring was positive but not statistically significant in the OLS models. The direct effect of arrest on participation in informal social control is not statistically significant in the HLM model, while it was marginally significant in the OLS models. In general, then, the HLM models confirm the negative effects of arrest rates on aspects of community organization and raise some questions about the robustness of the positive effects of arrest rates on participation in informal social control.

[8] The results from the OLS and instrumental variables models are discussed in the full report.

Table 2. System of Simultaneous Equations for the Effects of Arrest on Community Organization and Collective Efficacy Using HLM: Standardized Coefficients

	Dependent Variables			
Predictors	**Voluntary Org.**	**Neighboring**	**Solidarity**	**Informal Social Ctr**
Area Attributes				
Poverty	.000825***	−.00024	.00014	.000029
Tenure	.02 *	.0238	.0425+	.0016
Md. Income	−.000000	.000002**	.00000	−.000000
Crime	.00087	.00675**	.00812**	.0017
Arrest	−.1047 **	−.09753+	−.205**	.04022
Individual Attributes				
Solidarity	—	—	—	.074**
Neighbor	—	—	.4907***	.152***
Vol. Org.	—	.2937***	.3742 ***	−.0242
Gender	.0847	−.0759	.2629 *	−.102
Race	.0499	−.17862***	.4692 +	.064
Education	.3517 ***	1.05***	−.5934**	.3003**
Married	.2129***	.3359**	−.3304**	.06
Kids	.3852***	.263+	−.2242+	−.0547
Intercept	.8849***	4.473***	9.04***	2.01***
R2	.113	.172	.324	.087

5.0. TESTING THE MODEL OF THE EFFECTS OF INCARCERATION ON COMMUNITY ORGANIZATION AND COLLECTIVE EFFICACY

The conceptual model for the effects of incarceration on community organization and collective efficacy is largely the same as that for arrest and need not be repeated at length here. The variables in the model and the manner in which they were measured are largely the same except for the operationalization of the incarceration variable. The model specification is also the same as that presented in the arrest section. First, a direct effects model will be estimated, followed by structural equation models to assess both direct and indirect effects of incarceration and, finally, hierarchical linear models will be estimated. The instrumental variable used in the simultaneous equation models for incarceration is also the same as that used in the arrest model. [9]

5.1. Measuring Incarceration

For purposes of this modeling we chose to use the change in admissions rates between 1987 and 1992 as our measure of incarceration. Admissions rates are an appropriate indicator of the proportion of the at risk population being removed from the community in a given unit of time. The admissions rates were computed as the ratio of the number of persons admitted in a given

[9] Empirically the ratio of drug arrests to total arrests is correlated both with changes in crime rates and changes in incarceration rates. The correlation with changes in the crime rate are very weak however (r=.09) and the correlations with changes in the incarceration rate are relatively strong (r=.482). While the change in the crime rate is not independent of the ratio of drug arrests to total arrests, the relationship between the two variables is weak enough to make this variable an acceptable instrument.

year from a neighborhood over the number of persons between 18 and 34 years of age residing in that neighborhood in 1990. The restricted denominator was used because it is a reasonable approximation of the at-risk population, since most admissions to prison are young. This ratio was multiplied by 1000 and the rate for 1987 was subtracted from the rate for 1992.

5.2. Estimating the Direct Effects of Incarceration on Collective Efficacy

The results for the effects of incarceration are similar to those observed for arrest rates. The negative effects of increases in the incarceration rate on aspects of community organization are more significant (than in the arrest rate models). Increases in incarceration are associated with decreases in voluntary association and less community solidarity. The HLM models also show an insignificant effect of incarceration on participation in informal social control. The HLM results from the HLM models are similar to those observed in the OLS models, in some respects. The negative effects of increases in incarceration on participation in voluntary association are negative in the HLM and more statistically significant than they had been in the OLS models. The same is the case for the effects of incarceration on community solidarity. The opposite occurs in the case of informal social control. In the OLS models, the effect of incarceration was positive and marginally significant. The HLM models show an insignificant effect of incarceration on participation in informal social control. This casts doubt on the OLS results of the positive effect of incarceration on participation in informal social control.

Table 3. System of Simultaneous Equations for the Effects of Incarceration on Community Organization and Collective Efficacy Using HLM: Standardized Coefficients

	Dependent Variables			
Predictors	**Voluntary Org**	**Neighboring**	**Solidarity**	**Informal Social Ctr**
Area Attributes				
Poverty	.000555**	−.00049	−.000387	.000396 *
Tenure	.0263**	.0297	.0548*	−.000736
Income	−.000002*	−.000001	−.000002	−.00000
Crime	−.00087	.0067**	.0081**	.001738
Prison	−.0514**	−.0478+	−.1006**	.019736
Individual Attributes				
Solidarity	—	—	—	.0741**
Neighbor	—	—	.4907***	.1516***
Vol. Org.	—	.2934***	.3742***	−.0242
Gender	.084	−.0759	.2629*	−.1026
Race	.049	−.7862***	.4692+	.06472
Education	.354***	.189***	−.5934**	.3003 **
Married	.212**	.062+	−.3304**	.0603
Kids	.38***	.2632 *	−.2242+	−.0547
Intercept	.884***	4.47***	9.04***	2.014***
R2	.113	.172	.329	.087

6.0. CONCLUSIONS AND IMPLICATIONS

There has been a great deal of rhetoric about the importance of communities in crime control. A substantial body of research has accumulated that contributes to our understanding of exactly how communities can and do achieve and maintain low crime rates. This report is one of a very few empirical studies of the effects of coercion, that is, arrest and incarceration policies on communities. As such it was intended to inform the basic assumptions of crime control strategies designed to bolster communities and, thereby, reduce crime. It addressed the basic question of whether or not increasing coercion increased participation in communities and specifically participation in informal social control. The answers provided are necessarily narrow and tentative. More work must be done to replicate and elaborate the work done here. Understanding the role of coercion on communities is too important to rest upon one or two isolated investigations.

Does increasing arrests or incarceration in a neighbored increase participation in the community and specifically participation in informal social control?

The answer is a qualified no. Arrest and incarceration rates in neighborhoods have a small positive effect on participation in informal social control by residents in simple models. When adjustments are made for technical peculiarities in the data, however, these effects become insignificant.

Increases in arrest rates are not associated with decreases in neighborhood crime rates. This is inconsistent with theories underlying programs such as Weed and Seed, in which coercion is expected to affect communities through crime reduction. Increases in arrest and incarceration may affect participation through other processes, such as decreases in fear of crime, decreases in the perceived risk of victimization, or other factors not related to the actual level of crime in an area.

Both arrest and incarceration have negative effects on other aspects of participation in communities, however. Increases in arrest or incarceration are associated with lower levels of participation in voluntary organization and lower levels of attachment to communities. This type of participation in communities is viewed as essential for maintaining organized and viable communities. Voluntary associations serve as a means of facilitating and broadening interaction among residents that is crucial for mobilizing communities. It strengthens and complements more incidental interaction such as neighboring and fosters solidarity. If interaction provides the means to community mobilization, then solidarity provides the motivation. Positive attachments to an area will encourage neighborhood residents to participate in the setting and achieving of collective goals such as obtaining better schools or better service from the police.

What are the implications of these findings?

These findings provide some support for both sides of the community and coercion debate. They provide some evidence that aggressive arrest and incarceration policies in neighborhoods may encourage participation in informal social control, although the process by which this occurs is not completely understood. These findings also support the contention that aggressive arrest and incarceration policies can have adverse effects on the social organization of neighborhoods.

The analyses presented here can be used to inform the consideration of general strategies for using coercion to bolster neighborhoods. They cannot be used to prescribe or proscribe specific programs. These results indicate that in considering the effect of coercion on communities, the

negative effects should also be considered, in addition to the positive effects. This is important largely because the debate about coercion and community has disproportionately emphasized the positive effects of coercion on communities through reductions in violent crimes. These findings suggest that the process is more complex. Before more programs can be prescribed, more work must be done to understand specifically how coercion has its positive and negative effects on communities before programs can be prescribed.

What more do we need to know?

It is important to know that the results obtained here are reliable and can be generalized. The relationships among coercion, community organization and informal social control in this analysis are not particularly strong. More analyses of these data should be done to test the resilience of the findings. They may change with different measures of the concepts and different specifications of the models. Given the importance of the use of coercion in the lives of citizens and communities, this kind of care seems warranted. Replicating this work in other neighborhoods would also increase our confidence in these results. This work was done in Baltimore and it is important to know that what is observed in Baltimore is applicable elsewhere. These replications should, if at all possible, provide for larger samples within the neighborhoods and a larger number of neighborhoods.

Once we are confident in the results observed in this study , the processes by which coercion affects communities should be defined in greater detail. First of all, the definition of coercion should be refined. Arrest rates are simply one aspect of police policy in a community. Aggressive patrol activity that does not result arrest can also be an effective form of coercion. Different types of patrol strategies such as foot patrol as opposed to using police car can also make a difference. The same is true for the definition of coercion in correctional policies. Admissions and releases from correctional institutions is one aspect of correctional policy that can influence communities, but probation and parole policies can affect the level of coercion in a community. A parole office that employs a very stringent drug testing and parole revocation policy may be more coercive than a court that simply incarcerating residents.

Second, the various models describing the link between coercion and community presented here should be modified in light of these findings. Specifically, if coercion does not seem to be related to beneficial outcomes for communities through crime reduction, then other processes must be identified that link coercion to these outcomes. The community policing literature would suggest that coercion can encourage interaction within the community directly through fear reduction or perceived reductions in risk rather than through actual reductions in crime. It is important that the theory behind various control programs and strategies be specified as clearly as possible so that these strategies can be assessed both logically and empirically.

Third, we should explore the possibility that arrest and incarceration policies that are practiced in a given neighborhood may have positive effects elsewhere. The incorporation of spatial econometric techniques into criminology provide examples of how to use this set of tools to investigate these geographically-based effects on neighboring areas.

Finally, more thought must be given to the desired outcome of applying coercion to communities so that we may be able to think of these policy decisions in a cost/benefit terms. In this analysis, we emphasized community organization and informal social control as important community outcomes. These outcomes were chosen because they have been shown to affect the quality of life and the personal safety of community residents (Sampson, Raudenbush, and Earls

1997). Other neighborhood-level outcomes could be chosen. For example, minimizing the negative and maximizing the positive social structural conditions of the neighborhood could be the desired outcome of coercion. Maintaining high property values in the area or minimizing the number of vacant houses, for example, could be considered more important than community organization or informal social control. The social organization of the community and the physical and social structural aspects of community are related, but not perfectly. In a given time period, coercion policies may have very different effects on these two classes of outcomes. If we are to discuss in cost/benefit terms the use of aggressive arrest and incarceration to bolster communities, then we must be clearer about what the desired benefits are in terms of neighborhoods. It is also important to give weights to the desired benefits. In this analysis, coercion had a positive effect on informal social control but negative effects on other aspects of community organization. If we are to make a choice between these competing benefits then some consideration must be given to the relative importance of these benefits.

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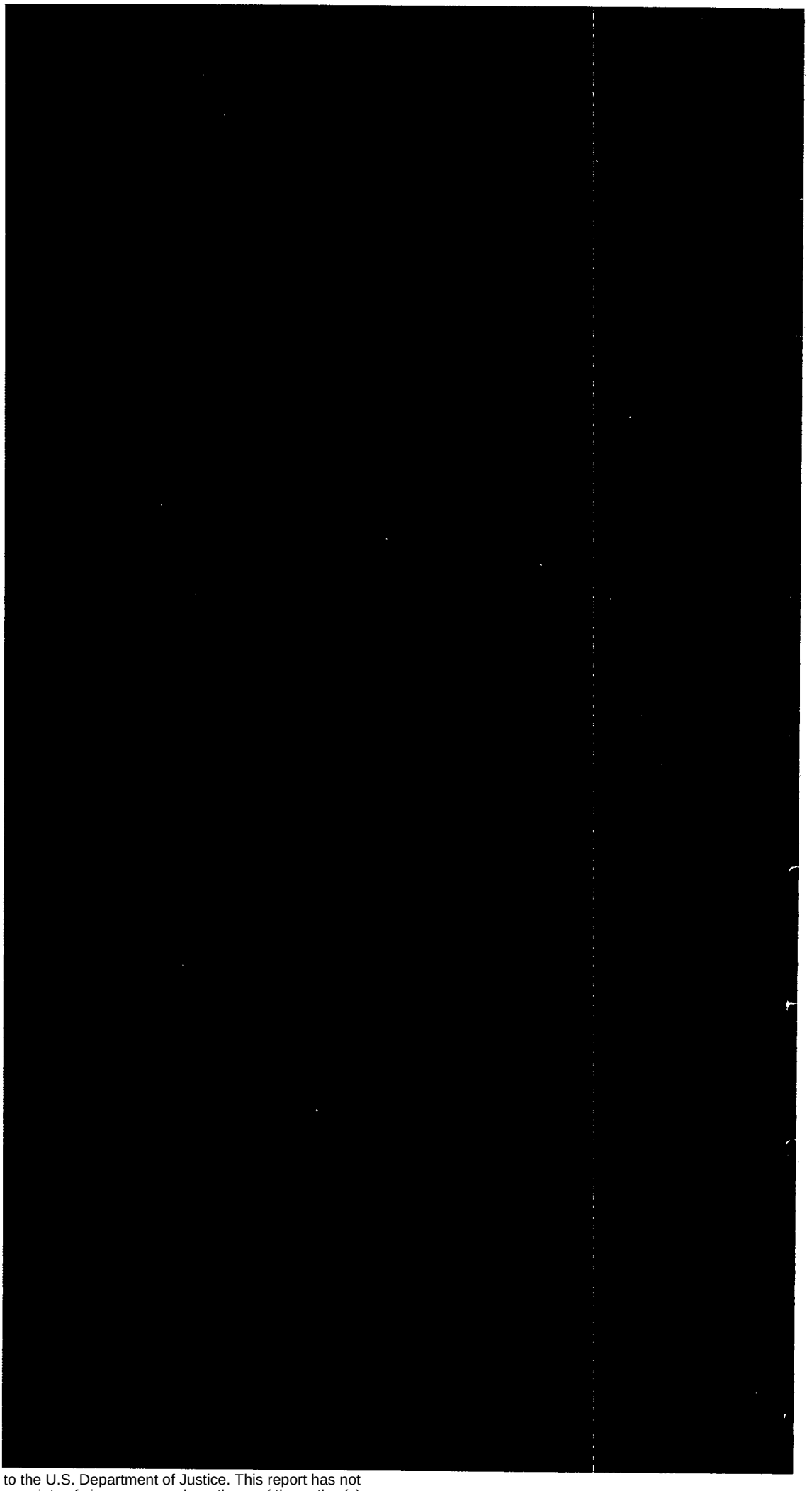

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