

Policing the Police:
Conflict Theory and Police Violence in a Racialized Society

Benjamin L Snyder

A thesis submitted in partial fulfillment of the
requirements for the degree of
Master of Arts

University of Washington

2013

Committee:

Ross Matsueda

Kyle Crowder

Program Authorized to Offer Degree:

Department of Sociology

©Copyright 2013
Benjamin L Snyder

University of Washington

Abstract

Policing the Police:
Conflict Theory and Police Violence in a Racialized Society

Benjamin L Snyder

Chair of the Supervisory Committee:
Professor Ross Matsueda
Department of Sociology

This paper tests models of coercive social control that are theoretically grounded in general group conflict theory and specific minority threat hypotheses. These theories assert that higher levels of minority presence and overall economic inequality will predict higher levels of social control even when other environmental factors (including crime rates) are held constant. The use of pooled time series cross-sectional data allows for the first longitudinal analysis of police homicides as a social control outcome, which produces mixed findings on racial and economic threats. As in previous research, purely economic conflict predictions find little support while racial threat hypotheses are at least partially substantiated. As part of this same analysis, police homicides and police force size are compared based on their empirical and theoretical strengths as social control outcome variables. This ultimately raises important challenges to the continued use of the police homicide variable in future conflict and minority threat research.

TABLE OF CONTENTS

List of Tables-----	iii
Acknowledgements-----	iv
Introduction-----	1
The Continued Relevance of Conflict Theory-----	1
Testing Police Homicides as a Conflict Theory Outcome-----	5
Incorporating Racial Threat-----	7
Racial Threat and Non-Homicide Social Control-----	9
Data, Measures, and Methods-----	10
Sample-----	10
Dependent Variable-----	11
Independent Variables-----	13
Specification of Models-----	16
Results-----	18
Discussion-----	25
References-----	33

LIST OF TABLES

Table 1: Predicted Signs, Means, and Standard Deviations of Variables used in Analysis -----	18
Table 2: Unstandardized Parameter Estimates for Fixed and Random Effects Negative Binomial Models of Police Homicides-----	20
Table 3: Unstandardized Parameter Estimates for Fixed Effects Negative Binomial Models of Police Homicides -----	21
Table 4: Unstandardized Parameter Estimates for Fixed Effects Models of Police Homicides and Police Force Size -----	23

ACKNOWLEDGEMENTS

This research would not have been possible without the resources provided by the Inter-university Consortium for Political and Social Research (ICPSR) and the Center for Studies in Demography and Ecology (CSDE) at the University of Washington. The author also wishes to thank Ross Matsueda, Kyle Crowder, David Jacobs, and Aimee Dechter for their support.

INTRODUCTION

Conflict theory is an important theoretical tradition within the field of sociology. It asserts that particular segments of society benefit disproportionately from established social and economic arrangements, which leads them to employ the state's coercive force in maintaining that inequality. Though this conception of power and disadvantage was originally a purely economic perspective, racial and ethnic identities have become an integral part of conflict theory hypotheses as they are defined and discussed today. This reflects the fact that race, poverty, and crime are inextricably linked within American society, and examining this broader picture of inequality is a crucial step toward fully understanding the repressive ends for which state power may be exerted. This paper will study the relationship between income inequality and the number of homicides committed by law enforcement agents in major American cities between 1980 and 2000, while also taking into account the racialized socioeconomic lines along which threat is often perceived by dominant groups and translated into increased levels of coercive social control.

THE CONTINUED RELEVANCE OF CONFLICT THEORY

The utilization of state power and resources is an issue of great import in any society, and sociologists have developed two major competing perspectives on these sorts of governmental decisions. Consensus theorists believe that state actions are generally the result of broad agreement among members of a society on singular goals (Cohn, Barkan, and Halteman 1991; Sheldon 2001). With respect to police work, this perspective maintains that police are used to combat crime and disorder in accordance with homogenous societal preferences. Police violence

is not seen as a social control outcome determined by the interests of dominant groups, but the proportional response of police to higher civilian violence or other departmental-environmental factors that can make policing more difficult and dangerous (Kane 2003). In contrast, conflict theorists view society as an aggregation of competing and stratified populations, with each group using every available resource to improve and maintain its socioeconomic position (Collins 1975). From this perspective, police violence is seen as a means for privileged societal elites to suppress and control any potentially threatening groups (Chevigny 1995). Though both perspectives focus on external, non-departmental constituencies as the driving force behind police behavior and policies (Nalla, Lynch, and Leiber 1997), conflict theory is an appropriate foundation for this research because it emphasizes an important set of exploitative social dynamics and class motives that are minimized through consensus perspectives.

Despite this larger emphasis on conflict between unequal groups, conflict theorists do not claim that coercion itself is the only force by which societies are held together. Such claims would clearly be false, yet they are frequently trotted out by opponents of conflict theory. In reality, conflict theorists merely assert that observable consensus and moral strictures are by themselves insufficient to generate social order (Goode 1972) and endeavor to investigate the gaps between alternative explanations that often gloss over power differentials and conflicting material interests. If state coercion were the only process by which stratified societies are held together, one would certainly expect more widespread and extreme police violence than currently exists in the United States and other modern democracies. Instead, homicides committed by the police are relatively uncommon events. This fact, however, does not represent a strong challenge to the use of police homicides as an indicator of social control outcomes, as frequency is not

necessarily an accurate representation of the effectiveness of police violence in protecting privileged interests (Jacobs and O'Brien 1998). The belief that certain kinds of domination are legitimate, or perhaps too powerful to be challenged, can in itself be a source of power for the dominant group (Collins 1975; Weber 1978), as it further lowers resistance by subjugated populations. The mere threat of death can be oppressive, even when the threat itself is only occasionally realized.

The role of the police is paramount in this conception of social control, as they possess a permanent monopoly on coercive force and legally sanctioned violence against members of the society itself, as has been extensively discussed in numerous theoretical works (Chevigny 1995; Quinney 1974; Sherman 1980). The exercise of this monopoly is largely regulated by the reciprocal relationship that exists between the police force and society's dominant values. In fact, this relationship is so powerful and entrenched that the credible threat of force is considered by some to be an indispensable component of elite survival in market-oriented societies like the United States (Jacobs and Britt 1979). Whether passively or with purpose, society necessarily shapes police behavior through governmental directives, formal accountability mechanism, and the influence of societal norms (Bayley 1985). Given the implications of conflict theory, this means that the work of police is necessarily divisive along economic and social lines, which are also necessarily racial in many American contexts, and is naturally opposed to the interests of economically or socially disadvantaged populations (Bittner 1975). This suggests that any violence employed by law enforcement must also follow the same principles, and will reflect the will of societal elites when the interests of those groups are threatened.

Following these same assumptions, high degrees of economic inequality should have a clear impact on the levels of violence that police employ. Greater inequality creates a more volatile society in which the disadvantaged must struggle even harder in order to survive, thus creating greater sense of disorder and fear of victimization among privileged groups as the status quo becomes increasingly precarious. This leads to this paper's primary economic threat hypothesis:

Hypothesis 1

Police commit more homicides of civilians in cities with greater income inequality

Although direct lobbying and petitioning for crackdowns against threatening groups could certainly play a role in directing law enforcement violence, the relationship between societal elites and the state's coercive forces can also take more subtle forms. Conflict theorists hypothesize that the privileged do not even have to directly request that police become more brutal, but simply condone the harm done to "dangerous" groups in the name of public order, thereby removing the restraints that reduce otherwise inevitable police violence (Chevigny 1995; Jacobs and Britt 1979). Research has shown, for example, that when law enforcement agencies do engage in formal review of incidents involving deadly force, they do so primarily "in the interest of controlling the consequences resulting from public pressures on the organization, rather than from an interest in ensuring that force is used legitimately and properly" (Reiss 1980:125). If privileged members of society, or at least those in the social and financial position

to exert noticeable pressure on law enforcement, fear the disorder and potential threats to their dominant status that stems from high economic inequality, it is likely they will choose to exert that pressure.

Testing Police Homicides as a Conflict Theory Outcome

Previous quantitative testing of conflict theory's police violence hypotheses provides some supporting evidence, though the reliability and exact interpretation of results is at issue in many past studies. Work by Kania and Mackey (1977), for example, is often cited as one of the first real studies on police violence in the United States. Using state level data that naturally included information from a wide variety of different societal contexts, the authors found that level of violent crime was the most important predictor of police homicide rates, and therefore endorsed the consensus-oriented view that police violence primarily stems from environmental disorder. The implication in this case was that the police served all interests equally and only responded with force when necessary, essentially repudiating the claims of conflict theory. Unfortunately, Kania and Mackey used number of welfare recipients as a proxy for inequality, despite the fact that states with the fewest citizens on welfare frequently have the highest rates of inequality, and completely excluded race or racial inequality from their model. These omissions render the results unreliable, and highlight the types of issues that plague much of the older body of research on conflict theory.

In response to Kania and Mackey, Jacobs and Britt (1979) applied a multivariate model to the same police homicide dataset and were able to produce the first bit of clear evidence for

economic inequality as a driving force behind police homicides. However, since this work still relied on state-level data that combined urban, suburban, and rural police departments into one generic unit, its conclusions needed to be refined and tested in a more narrow and logically consistent context. Subsequent studies have reduced their scope to large urban areas, which generally represent politically discrete units, but have been consistently limited by inadequate treatment of race (Sherman and Langworthy 1979), questionable and limited dependent variables based on combined data sources (Liska and Yu 1992), or overreliance on potentially flawed government files (Sorensen, Marquart, and Brock 1993). Though these studies have generally been mixed in their conclusions, conflict theory researchers have continued to test inequality itself as predictor of increased police homicides, and found supporting results in what might be considered more extreme societal contexts.

Studies of police violence in Jamaica, Argentina, India, and Brazil, for example, have indicated that extrajudicial killings by the police are tolerated as a necessary form of coercive social control in those countries, despite their status as liberal democratic states (Belur 2010; Chevigny 1990, 1995). Little effort is made to curtail such uses of deadly force by police, since they generally enjoy the approval of elites and the tolerance of the general public. This state of affairs has its roots in the corruption, pervasive fear of crime, and extreme economic inequalities that prevail in parts of those nations, and provides an extreme example of the kinds of state violence that can exist within ostensibly liberal systems when elite and middle class opinions cease to serve as moderating factors.

However, these findings have never been definitively replicated for American cities, and one of the few examples of a direct contemporary test of conflict theory and police homicides (Jacobs and O'Brien 1998) further rejected the traditional conflict theory perspective on inequality and violence. In that article, the authors predicted police homicide rates using a Tobit model to account for the high number of zeroes in their dependent variable¹, and reached conclusions that have broad implications for any future research on classical conflict theory. In contrast to some earlier studies, Jacobs and O'Brien found that total societal inequality, as measured by a gini coefficient, was by itself not a significant predictor of police killings, while racial threat variables did have a significant positive effect. This conclusion highlights the importance of including racial threat measures in any future work on police killings, as it seems race and economic stratification must be disentangled. However, it must be noted that these results were obtained from a cross-sectional analysis of data from the early 1980's. The analysis undertaken in the current study represents a longitudinal test of inequality as a predictor of police homicides in more recent decades.

INCORPORATING RACIAL THREAT

Given the extreme racial cleavages that exist within American society, and the fact that these racial divides often correspond to economic, cultural, and spatial inequalities, it is not surprising that a growing body of sociological research has adapted classical conflict theory to reflect these realities. Though they share a common origin in the theoretical tradition discussed above, racial threat theory can be seen as distinct variations of conflict theory in contemporary

¹ That is, the authors treated the rate of police homicides per 100,000 citizens as a censored variable because it was computed based on infrequent events, thus producing a high number of zeroes.

sociological research. Blalock (1967) and Blauner (1972) were among the first to write extensively on the topic, arguing that the existence of significant racial or ethnic minorities in a community is often perceived as an intrinsic threat by the racial or ethnic majority. This proposition has been empirically substantiated in empirical studies (Liska, Lawrence, and Sanchirico 1982; Quillian and Pager 2001), and has yielded numerous testable implications for conflict-oriented criminologists. The most important of these, which will serve as this study's secondary hypothesis, is as follows:

Hypothesis 2

Police commit more homicides of civilians in cities with higher proportions of non-white residents

Race undeniably plays a role in determining access to resources and power in American society, and since whites have traditionally enjoyed higher levels of economic prosperity, representation in government and other positions of influence, and more positive health, educational, and occupational outcomes, they are often treated as a privileged and dominant group, with blacks or any non-whites considered non-dominant groups for analytical purposes. This designation is especially justified in light of the actual disparities in how police treat white and non-white communities, with non-whites often feeling that the police are harassing, abusive, and biased (Kubrin and Weitzer 2003; Smith 1986)

Racial Threat and Non-Homicide Social Control

It should also be noted here that conflict theory and racial threat have been used to explain a number of other coercive and punishment outcomes that might be relevant to this analysis. These include arrest rate (Liska, Chamlin, and Reed 1985), likelihood of arrest (Stolzenberg, D'Alessio, Eitle 2004), police brutality (Holmes 2000), law enforcement expenditures (Jackson 1989), capital punishment (Jacobs, Carmichael, and Kent 2005), and size of police force itself. In fact, police force size actually seems to have surpassed police homicides as the favorite dependent variable of researchers in the conflict theory tradition, as studies of force size are more recent and numerous than work on killings. Though these works have been somewhat mixed in their conclusions, they on the whole support the notion that minority presence is responsible for some of the positive variation in social control outcomes. In contrast to work on police homicides, a strong vein of longitudinal studies on this topic has developed in the contemporary research arena, where results have continued to support the relationship between racial threat variables and state repression (Greenberg, Kessler, and Loftin 1985; Kane 2003; Kent and Jacobs 2005). Many of these same studies, however, have been unsupportive of classical, purely economic threat predictions.

However, the most important recent example of quantitative research on conflict theory and the police is likely the work of Stults and Baumer (2007). In response to critics of conflict and racial threat theories, who often question the way in which theoretical assumptions are transposed onto analysis of macro-level variables, the authors included actual measures of white

fear of crime, perceived black economic threat, and perceived black political threat obtained from geo-coded responses on the 1994, 1996, and 1998 General Social Survey. These inclusions made their work uniquely theoretically powerful, as white fear of crime and black economic threat are found to be significant predictors of police force size in the work's final model. This substantiation of the attitudinal mechanisms undergirding the work of conflict and racial threat criminologists was a critical step forward, and should inform future critiques of conflict-oriented research. The paper's other findings, however, represent the most recent, and perhaps strongest, repudiation of income inequality as a predictor of social control outcomes. In line with previous research, increased presence of blacks strongly predicted increased density of police officers in the sampled cross section.

DATA, MEASURES, AND METHODS

Since it originally developed on the basis of observed historical trends, some have noted that conflict theory is particularly well-suited for empirical testing (Collins 1990). This paper takes advantage of that clear testability, and applies quantitative methods to the conflict theory hypotheses presented in the literature review above.

Sample

Due to data availability issues, this study analyzes police homicides in cross-sections that correspond to the decennial census. The three cross-sections are the years 1980, 1990, and 2000, and the unit of analysis is American cities with populations over 100,000 in 1980. The number of

years separating these pooled cross-sections is quite large, which reduces the risk of serial correlation across the various time intervals. The number of cities included in this study is 76, giving a total of 226 city-years across all three time periods. This number is sufficient for generating a comprehensive picture of police violence in urban areas, but is lower than expected due to missing data from municipal police departments that may not keep records of homicides committed by their own officers.

Dependent Variable

As discussed above, homicides by law enforcement have somewhat fallen out of favor as a coercive control outcome in conflict theory research. This is an unfortunate development, given that studies using force size as the dependent variable do not actually evaluate the changes in police behavior that seem so strongly implicated by conflict theory. Though David Jacobs, one of the most prominent and consistent researchers in this theoretical vein, has himself published studies on force size, he and his colleague David Britt have also correctly noted that “if elite control over subordinate groups is to be enhanced, instead of hiring more police it will be less costly to give the existing force a free hand” (Jacobs and Britt 1979:404). Analyzing law enforcement homicides is additionally advantageous because it highlights the micro level of a theory that usually focuses on macro level determinants, emphasizing how stratification and domination on a societal scale have their origins in common, everyday interactions between real individuals (Collins 1975). Increased numbers of police in certain cities does not necessarily imply different interactions between the police and those they are policing, while each homicide committed by the police is a story all its own, with life-altering consequences for all parties

involved. If killings by law enforcement agents are in fact a coercive social control outcome, it seems reasonable to argue that they represent a qualitatively more important outcome than increased size of police force.

In light of this strong theoretical argument for utilizing deadly force over number of police, the dependent variable in this study is number of homicides committed by law enforcement officers, which is treated as a count variable in primary analyses.² This variable was constructed using data from FBI Supplemental Homicide Reports (SHRs), which are part of the organization's broader Uniform Crime Reports (UCR) Program. Because homicides by law enforcement are relatively rare, the dependent variable is aggregated for five year periods subsequent to the cross-sectional measures of each independent variable. This treatment of police homicide data is common in conflict theory research (Jacobs and Britt 1979; Jacobs and O'Brien 1998; Liska and Yu 1992), as excessive zeroes and lack of dependent variable variation can complicate statistical modeling.

Furthermore, it seems logical to assume that changes in structural variables at a certain cross-section would not have an instantaneous effect on social control outcomes. It might well take years for increased inequality to instill greater fear in ascendant populations, and for fear to translate into increased tolerance of law enforcement violence. Since the exact timing for such transformations is not clear, this study assumes that aggregation killings over a five year period (i.e. the cross-section for 1980 includes police homicide data aggregated for the years 1980-

² Some past studies (Jacobs and O'Brien 1998) have predicted rate of police homicides per 100,000 residents as opposed to the raw counts. Though table results for models in this study were calculated using counts, both rate of police homicides per 100,000 residents and a dummy for non-zero police homicides were used to check the robustness of the findings in its reported models.

1984) is sufficient to capture the lagged effect of structural changes on coercive social control outcomes.

Independent Variables

For the purpose of testing this study's primary hypothesis, inequality is measured using a gini coefficient for household incomes in 1980, 1990, and 2000. This coefficient is calculated by comparing the Lorenz curve for income distribution in the sample, which reflects the cumulative percentage of total income present at each income level, with a hypothetical linear description representing perfect income equality. A higher coefficient means greater inequality, since it corresponds to greater disparity between the observed Lorenz curve and a perfectly proportional distribution of incomes. However, since prior research has sometimes used poverty level (Kent and Jacobs 2005) or unemployment (Jacobs and Helms 1997) as the primary explanatory variable in conflict theory analyses, these variables are also included in certain models as alternative measures of economic instability that might threaten dominant groups. Poverty level is measured by the natural log of the percentage of families below the poverty line in each city, while unemployment is the natural log of the unemployment rate in each city. The log transformations were carried out to reduce the influence of possible outliers and heteroscedasticity within these variables.

The explanatory variable implicated in this study's second hypothesis will be measured by the natural log of percentage of black residents in each city. While some previous studies (Jacobs and O'Brien 1998) have found the percent non-white variable to be insignificant as a

measure of minority effect when the percent black variable is included, this outcome may not be reflected in newer data, given the large changes in racial composition reported in the most recent census. Hispanics are now the largest ethnic minority group in major American cities, with the proportion of Hispanics having increased in all of the hundred largest American cities between 2000 and 2010 (Frey 2011). In light of this demographic shift and recent quantitative work, such as fixed effects analysis of neighborhoods in New York City (Kane 2003), which found that percent hispanic was a significant predictor of state control outcomes while percent black was not, this study will conduct a broader test of racial threat theory that includes percent hispanic as a possible threat dimension. Residential segregation of blacks and whites, measured by a dissimilarity index, will also be tested, as one might expect that spatial isolation of white populations would decrease their fear levels and the resulting coercive control outcomes.

Three of the variables included in this study's models serve as theoretical controls for the two primary hypotheses while also testing the validity of functionalist explanations of police violence described earlier. Though these views of law enforcement largely ignore the reality of power dynamics in capitalist society, it is certainly the case that some killings by police are in response to difficult or violent policing contexts. Therefore, city-level variables for log violent crime rate are included in the paper's models to account for the natural increased demand for police control that has been shown to arise from high crime environments (Garland 2000). Other environmental variables that might influence police violence include divorce rate and the natural log of crowding³ in the urban area, which indicate increasingly levels of social strain and disorder. These fractious community contexts not only lead to increased criminality (Sampson

³ For the purposes of this study, crowding will be measured by percent of residential dwelling units in each city that have greater than one person per room. These data were obtained from the United States Census Bureau.

1987), but potentially contribute to increased desperation and danger in individual-level encounters with the police. Individuals living in already stressful environments may be pushed over the edge by the additional stresses of interacting with law enforcement, and resistant or violent behavior by suspects may trigger reactive police violence. All three of these variables, along with total population, which controls for the naturally higher number of civilian/police encounters in more populous areas, are predicted to have a positive effect on police homicides, though they indicate no coercive social control relationships. Median family income is also included as a control in some models, representing the notion that overall city-level economic conditions, rather than the relative relationships within the city, determine needed levels of state repression.

Police density is a variable that can be seen two different ways in the context of conflict theory research. On one hand, it might be expected to predict higher levels of law enforcement violence since a higher concentration of police implies a higher number of total interactions between police and civilians (a certain percentage of which eventually lead to violence if the police are acting as agents of coercive control). Conversely, a more significant police presence might actually serve as a form of social control in itself, thus minimizing the need for actual violence by officers. For the purposes of this study, police presence will be assumed to act as an intrinsic form of social control, thus negating the need for violence by police. Another variable commonly used by conflict criminologists, a dummy variable representing the presence of appointed city manager type governmental structure, is also open to interpretation. Different studies have framed it as either a positive or negative predictor of social control outcomes. Since a recent longitudinal conflict theory study of police force size found city manager to be a

significant negative predictor (Kent and Jacobs 2005), I will test that paper's theoretical assertion that unelected city managers are insulated from elite demands for police crackdown, thus resulting in lower levels of police violence.

Specification of Models

In contrast to previous research on law enforcement homicides, the current study utilizes a pooled time series cross-sectional data structure that allows for unprecedented longitudinal analysis. This approach has distinct advantages over cross-sectional research, as it allows for the simultaneous modeling of temporal and inter-group relationships that can increase the reliability of causal inferences. Several models were considered based on possible transformations of the police homicide variable into a rate or a dummy variable, but the models presented in this study will primarily be random and fixed effects negative binomial models fitting police homicide counts.

Negative binomial was selected because the count nature of the original data immediately suggested a Poisson model, and the highly overdispersed values (variance several times the unconditional mean) immediately implied the need for the dispersion factor introduced in negative binomial regression. Interpreting the models is relatively straightforward, as the right hand side of the equation is a linear combination of predictors and the estimated parameters are simply the logged expected counts of the dependent variable. Incorporating the panel nature of the data requires adjudication between fixed and random effects negative binomial models as discussed by Hausman, Hall, and Griliches (1985). The possible existence of unobserved

heterogeneity, a type of unobserved variable that remains fixed for certain units of analysis over time, is primarily at issue here and must be considered carefully.

In a random effects model, city-specific effects are treated as randomly distributed across city-years in a manner not correlated with the model's regressors. If persistent city-specific effects do exist, however, serial correlation is likely to become an issue. A city with some degree of intrinsic variation from the average effects predicted by the model, for example, may produce consistent residuals of a certain sign that are the result of unobserved heterogeneity, not the effects of independent variables. Since random effects models do not allow for this kind of correlation between time-variant regressors and location-specific error, the random effects parameter estimates in such a case would be biased. Such a finding would be unfortunate in some respects, as random effects models allow researchers to examine within and between group effects over time in addition to producing more efficient estimates than their fixed effects counterparts. By functionally introducing dummy variables for each analysis group, a tactic meant to control for possibly correlation between the regressors and the model's error term, fixed effects models can essentially control for unobserved heterogeneity. The cost of this approach, however, is inflated standard errors due lost degrees of freedom. This leads to wider confidence intervals and coefficient estimates with a greater sampling variability. The current analysis will present both fixed and random effects models and then use the Hausman specification test to determine the validity of random effects orthogonality assumptions.

RESULTS

Table 1 presents a summary of the predicted effects, standard deviations, and means for all variables used in this paper's analysis. When looking at each individual cross section, one sees that the dependent variable has relatively similar values in all three waves, with means of 11.78, 13.24 and 10.63 in 1980, 1990, and 2000 respectively. There is, however, a major difference in the variation of police homicide levels between the years tested, from 21.56 (1980) and 22.69 (1990) down to 12.50 (2000). This may be driven in part by an increase in the number of cities with zero police homicides, which went from 10.53% (1980) and 11.84% (1990) up to 18.42% (2000).

TABLE 1

Predicted Signs, Means, and Standard Deviations of Variables used in Analysis (N=228)

Variable	Direction	Mean	SD
Homicides by Police		11.87	19.4
Inequality (Gini)	+	0.53	0.15
Ln Violent Crime Rate	+	6.86	0.57
Police per 100k	-	5.37	0.35
City Manager	-	0.46	0.49
Population	+	5.71	9.65
% Divorced	+	10.81	2.16
Ln Crowding	+	1.7	0.63
Ln % Black	+	1.31	1.14
Segregation	-	59.85	14.97
Median Family Income	-	427.66	84.8
Ln Unemployment	+	1.77	0.43
Ln % Poverty	+	2.48	0.41
% Hispanic	+	13.53	15.2

Since all previous conflict theory studies using police homicides as an outcome variable have been cross-sectional, unreported negative binomial regression models were run on the

current data at each available cross section and compared with past results. Population and divorce rate are the only two variables that significantly predict police homicide in all three cross-sections, and act in their expected positive directions. Inequality is not a significant effect in any of the three independent waves, while percent black goes from significantly positive in 1980 to an insignificant negative coefficient in 2000. Though not necessarily indicative of a significant trend in the effect of percent black over time, since we cannot be sure how the dependent variable has changed over time, this is something to keep in mind when interpreting this paper's longitudinal models.. Violent crime, police density, and crowding all display significant effects in 1990 or 2000 and were insignificant in 1980. Though these results are somewhat mixed, they are generally in line with prior cross-sectional findings in this area, which have usually found some support for both racial threat and functionalist views of police violence.

Random effects parameter estimates reflect the changes in variable levels both between and within cities over time, providing an extra dimension of analysis that makes them preferable to the purely within-city estimates of fixed effects. Unfortunately, specifying a random effects model that properly deals with unobserved heterogeneity can often be challenging. Following previous researchers, the author tested numerous potential random effects models of police homicides against their fixed effects counterparts using the Hausman specification test. The Hausman tests the null hypothesis that the dummy variables introduced for each city under fixed effects have coefficients that are jointly equal to zero. If this null hypothesis is rejected, it indicates that the dummy variables used in fixed effects are capturing some otherwise unobserved heterogeneity and random effects coefficients will be biased. Ultimately, all random effects models specified by the author rejected the Hausman test null hypothesis, meaning that

some city-specific heterogeneity remained in every attempted regression. The exact degree of bias in these models cannot be determined through the Hausman test, however, and some of the coefficients obtained through random effects regression may still be instructive to the paper's analysis.

TABLE 2

Unstandardized Parameter Estimates for Fixed and Random Effects Negative Binomial Models of Police Homicides (N=228)

	Model 1 (RE)		Model 2 (FE)	
	coef	se	coef	se
Inequality (Gini)	-0.887**	0.318	-0.175	0.364
% Black	0.288*	0.115	0.477*	0.234
Segregation	0.004	0.006	-0.008	0.007
City Manager	-0.276	0.179	-0.362	0.402
Population	0.034***	0.009	0.003	0.015
% Divorced	0.032	0.034	-0.017	0.053
Crowding	0.389**	0.129	0.281	0.180
Median Income	0.002	0.001	0.001	0.001
Violent Crime Rate	0.533***	0.135	0.021	0.166
Police per 100k	-0.642*	0.275	-1.243**	0.387
Intercept	0.316	1.874	8.606***	2.385

P ≤ .001 - ***; .01 - **; .05 - *

Table 2 represents two competing panel data analyses of police homicides, a random effects model (1) and a fixed effects model (2). The random effects model produces several significant coefficients while the fixed effects model indicates only two significant effects. These two coefficients, representing the positive effect of percent black and the negative effect of police force size on police homicides, are the only predictors that remained robust across both sets of error assumptions. Though we cannot reject the idea that the random effects coefficients

are biased to some extent by unobserved city-level heterogeneity, they nevertheless may highlight some of the shortcomings of the fixed effects dummy variable approach. Population, for example, is a highly significant predictor of increased police homicides under random effects, but has no effect in the fixed effects model. This change is not just a result of higher standard error, as the point estimate for population in the fixed effects model (model 2) is radically lower. Since the variation in population between cities is far greater than the population variation within cities over time, these results may be indicating that population is a positive predictor of police homicide that cannot be captured under the restrictive assumptions of fixed effects modeling. Violent crime rate, inequality, and crowding all display similar trends, which suggests that these city characteristics may also vary far more between cities than within cities over time.

TABLE 3

Unstandardized Parameter Estimates for Fixed Effects Negative Binomial Models of Police Homicides (N=228)

	Model 3		Model 4		Model 5	
	coef	se	coef	se	coef	se
Inequality (Gini)	-0.388	0.349	-0.253	0.381	-0.153	0.320
% Black	0.240	0.211	0.283	0.215	0.484*	0.226
Segregation	-0.008	0.007	-0.007	0.007	-0.008	0.007
City Manager	-0.173	0.361	-0.137	0.363	-0.358	0.401
Population	-0.013	0.013	-0.017	0.013	0.002	0.014
% Divorced	-0.043	0.051	-0.052	0.053	-0.019	0.049
Crowding	0.310	0.184	0.289	0.185	0.277	0.177
Median Income	0.000	0.001	0.000	0.001	0.001	0.001
Violent Crime Rate	-----	-----	-0.130	0.147	-----	-----
Police per 100k	-----	-----	-----	-----	-1.236**	0.383
Intercept	2.338**	0.758	3.399*	1.426	8.748***	2.100

P ≤ .001 - ***; .01 - **; .05 - *

If this is the case, then we must be especially careful in interpreting additional fixed effects models of these variables, as the risk of Type-II error is especially elevated. Though it controls for the biasing effects of unobserved heterogeneity, the fixed effects approach can also yield small and insignificant coefficients that do not necessarily tell a complete story. However, since a Hausman specification test of all three models in Table 3 indicates that the random effects orthogonality assumptions were not met, all models are reported as fixed effects models with unbiased parameter estimates.

Models 3 through 5 are fixed effects models representing different conceptions of the police homicide outcome variable.⁴ The baseline model, model 3, follows previous researchers in assuming that racial threat variables like percent black, economic threat variables like inequality, and social disorder variables like crowding and divorce rate can all be treated as exogenous effects. Though some have questioned the validity of these assumptions (Greenberg, Kessler, and Loftin 1985), they seem to have become an integral part of the empirical literature on conflict hypotheses. My models are contingent upon many of these same assumptions about causality, and all interpretations of results should bear that in mind. Unfortunately, none of the variables included in model 3 are significant predictors of police homicides. This is a somewhat surprising finding in light of previous conflict theory research, though one must take into account the possibility of Type-II error described above. Though increased crime levels are an important consensus theory explanation of police violence, conflict theorists often lump that variable into

⁴ Collinearity does not appear to be a serious concern in these analyses. VIFs were calculated for all variables used in this study's models, and in no instance did the value exceed 10, a level that researchers have generally adopted as the standard for problematic collinearity. Though their VIFs were not prohibitively high, the most closely related independent variables appeared to be percent poverty and median family income. To avoid the potential of even slight biased results, these variables were never included in the same regression models. Three potential outliers, New York City, Chicago, and Houston, were identified on the basis of their leverage scores, but their removal did not substantively change any of the regression results.

models with other environmental disorder variables that are hypothesized to increase levels of violence. Such a relationship would constitute a concerning endogeneity problem, and this causal linkage is seldom respected in conflict theory research. Rather than lumping violent crime rate into the basic model, the author added that variable in model 4 to observe its supposed effect on disorder variables like divorce rate and crowding. Though the estimates for those variables in model 4 were again statistically insignificant, it does seem that the effect of crowding was weakened somewhat by the inclusion of violent crime rate. However, once again none of the independent variables included in the model account for significant changes in the number of police homicides.

TABLE 4

Unstandardized Parameter Estimates for Fixed Effects Models of Police Homicides and Police Force Size (N=228)

	Model 6		Model 7	
	coef	se	coef	se
Inequality (Gini)	-0.253	0.380	0.050	0.079
% Black	0.283	0.210	0.194*	0.094
Segregation	-0.007	0.007	-0.001	0.002
City Manager	-0.137	0.363	-0.221*	0.101
Population	-0.017	0.013	0.040***	0.011
% Divorced	-0.052	0.052	0.040***	0.011
Crowding	0.289	0.171	0.082*	0.041
Violent Crime Rate	-0.130	0.146	0.016	0.030
Intercept	3.403*	1.348	4.842***	0.280

P ≤ .001 - ***; .01 - **; .05 - *

Since violent crime does not appear to predict higher levels of police violence, as predicted by consensus-oriented researchers, model 5 tests the notion other manifestations of

coercive social control are preempting the rises in police violence predicted by conflict theorists. When police force size is introduced to the basic model, it proves to be a powerful negative predictor of police homicides, while percent black becomes a significant positive coefficient. When these effects are x-standardized and exponentiated, we see that a standard deviation increase in percent black predicts 0.116 additional police homicides within the cities in our sample, while a standard deviation increase in police force size predicts a 0.377 fewer police homicides. Economic threat and environmental disorder variables had no significant effects.⁵

In light of the extremely weak results for models 3 and 4, it seems only natural to question whether this lack of predictive power may stem from issues with the dependent variable being used. As discussed above, this paper's longitudinal analysis of police homicides is a first for conflict theorists, who have generally moved toward police force size as their social control outcome of choice. Table 4 represents a novel side by side comparison of fixed effects models predicting police homicides (model 6) and police force size (model 7) using identical independent variables. The results are clear, and may suggest a possible issue with either lack of variation or lack of reliability in the police homicide dependent. While model 6 yields no significant coefficients, model 7 shows significant positive effects for percent black, population, divorce rate, and crowding, along with a significant negative effect for the city manager dummy variable. These results are not only more interesting on a substantive basis, but suggest, along

⁵ The results from model 5 were tested for robustness using different transformations of the police homicide variable, and results were mostly confirmatory. Probit models of non-zero police homicide levels displayed similar trends, while basic linear panel data models of police killing rates showed a similar effect for police force size but an insignificant coefficient for percent black. This would normally be quite concerning, but it seems that the net change in significance between the rate model and model 5 is rather low, but happened to cause the relatively weak effect of percent black in model 5 to slip beyond the somewhat arbitrary $P \leq 0.05$ threshold.

with model 5, that police homicides may not be a primary social control outcome of interest for conflict theory researchers.⁶

DISCUSSION

This paper's analysis represents the first longitudinal study of law enforcement homicides as a social control outcome, and thus constitutes an important step toward better understanding of the role of coercive violence in maintaining stratified societies. In general, the results rejected classical conflict theory hypotheses and provided some support for the racial threat perspective. The gini coefficient for measuring income inequality was not a significant positive predictor of law enforcement violence in any of this study's models. In fact, it negatively predicted police homicides in random effects model 1, and had a negative but insignificant point estimate in models 3-6. Though the random effects estimates presented in Table 1 were shown to be biased by a Hausman test, such results nevertheless indicate a serious challenge to traditional conflict theory hypotheses regarding police homicide. It may be the case that increased inequality in urban areas simply disheartens and disempowers the underprivileged, causing them to shrink back politically and actually reducing the status anxiety experienced by societal elites. Perhaps increased inequality signals to powerful interests that their dominance is actually even more

⁶ Unreported additional analyses tested some alternative measures of economic threat suggested in the conflict theory literature. When inserted into model 5 in place of the gini measure of economic instability, neither Log unemployment rate nor percent families in poverty had any significant effect. When percent hispanic was included as a potential racial threat variable in place of percent black, its effect on police homicides proved very weak. Additional models using percent black and percent hispanic in the same regression were run using different variations of dependents, but percent black remained a significant positive effect while percent hispanic remained unimportant for predicting police homicides. Several potential interaction effects were also tested, with negligible results. A percent black and violent crime interaction was found insignificant, along with a percent black and inequality interaction. The one significant interaction discovered, percent black and segregation, operated in the opposite of its expected direction. It seems that percent black predicts even higher levels of police violence when blacks are more highly segregated.

assured and self-reinforcing. The alternative measures of potentially threatening economic instability suggested in previous literature, poverty and unemployment rate, were also tested but also failed to account for increased police violence. This paper's primary conflict theory hypothesis, that higher levels of income inequality predict greater police violence, was definitely rejected.

Findings for this paper's second hypothesis, that cities with proportionally larger minority populations would experience more police homicides net of environmental factors, were largely confirmatory with respect to percent black. It seems that presence of hispanics does not correspond to the same types of law enforcement outcomes, as percent hispanic was not even significantly correlated with police homicides on a bivariate level, nor was it a significant predictor when it was tested in a fixed effects model (see footnote 6). It may be the case that Hispanics are simply perceived differently (i.e. in a less threatening way) in American cities since they lack the long history of direct enslavement and violence that may undergird black/white race relations.

Negative binomial models of the panel data indicated a significant positive relationship between percent black and law enforcement killings under both random and fixed effects assumptions (models 1 and 2), in addition to demonstrating a positive relationship between black presence and police force size (model 7). These findings represent strong evidence in favor of the racial threat perspective. Cross-sectional analyses of minority presence and police violence were slightly mixed their results, with a highly significant positive coefficient in 1980 become non-significant in 1990 and actually turning into a negative point estimate in 2000. This finding is

especially interesting given that two of the environmental disorder variables, crowding and violent crime, are significant positive coefficients only in later years. A series of random effects models unreported in this paper investigated this issue further, and found that the highly significant positive bivariate effect of percent black on police homicides completely disappeared when violent crime rate and crowding were added to the model. One possible interpretation of this is that race, though still a significant division along which threat may be perceived, is diminishing in influence as police increasingly orient themselves in the direction long hypothesized by consensus theories of state power.

This study's analyses provided mixed conclusions with respect to environmental disorder variables, with higher violent crime rates, population, and crowding levels all predicting consistent increases in law enforcement homicides in random effects model 1. All three of these effects disappeared, however, under fixed effects assumptions, suggesting that far more variation exists between cities than within cities over time on these variables. Increased standard errors, as opposed to far lower point estimates, may be causing the decreased significance under random effects. This is certainly an instance where removing city-correlated error through additional variables in the random effects model would be preferable to controlling for all city-correlated variation through fixed effects, but no such model was discovered. The random effects results from model 1 do at least suggest more research is necessary on these issues, and it should be noted that, as in previous research, the significance of these environmental disorder variables did not prevent a significant effect of percent black in the same models. This finding indicates that difficult policing contexts may certainly account for some increases in police violence, but the

racial threat posed by high levels of black presence still predicts higher violence no matter the environment.

In addition to testing this study's primary hypotheses, some models presented in this paper also suggest that increased police force size may represent a form of coercive social control that is causally prior to increased police violence. Though it has a positive bivariate correlation with police homicides when city-years are pooled and is again positively correlated with police homicides in the 2000 cross-section, longitudinal analysis ultimately demonstrated a significant negative relationship both within and across American urban areas (models 1, 2 and 5). This result not only highlights the potential weaknesses of cross-sectional analysis when compared to models based on panel data, but seems to suggest a previously unhypothesized relationship between increased force size and lower police homicide rates. One must remember that the measure of police violence used in this study was a lagged aggregate of homicides over a five year period, meaning that over time force size significantly predicts lower lagged homicide outcomes. The theoretical and practical implications of this finding for future conflict theory research can hardly be ignored. In fact, it confirms the hypotheses of force size conflict theorists, who have long claimed that increasing force size supersedes elevated violence as a coercive control strategy and actually minimizes the need for more violent repression. It now appears that such claims are supported by long term trends, despite the fact that previous cross-sectional conflict theory research (Jacobs and O'Brien 1998) had never revealed such an effect⁷.

⁷ In unreported analyses conducted by the author, economic inequality (gini) predicted increased police officers per 100,000 in random effects panel models, but this effect disappeared when percent black was added to the model. Percent black itself was a highly significant positive coefficient, suggesting that the supposed effect of gini in previous models had actually been an effect of racial threat. This clear finding is in line with previous research, in contrast to the somewhat confusing coefficients for gini in models 4-6 and suggests that analysis of police force size may provide clearer indications of the coercive force outcomes of interest to conflict criminologists.

Furthermore, the contrast between the extremely weak fixed effects coefficients predicting police homicides in model 6 and the numerous large coefficients for police force size in model 7 should be instructive to future researchers. The same regressors produce drastically different estimates for these two different dependent variables, with police force size allowing for a greater number of effects with greater magnitude and significance.

In light of these findings, one must begin to question whether the lack of expected significant coefficients in regressions using police homicides implicates the theory or the data behind this paper's analysis. Not only does police force size predict lower levels of police homicide both within cities and between cities over time, suggesting that increased force size precedes increased violence as an effective form of coercive social control, but it produces substantively more interesting results when used as a dependent variable in conflict and racial threat empirical tests. One possible explanation for this may be the simpler and more directly political causal mechanism behind increases in police force size. Whereas conflict theorists posit a complex series of cultural and psychological dynamics as the link between elite fear and increased police killings, increasing force size seems a simpler and more direct way for state actors to mollify elite fears of crime and disorder. The more nuanced and highly theoretical connection between economic or racial threats and increased police killings may be harder to capture with the variables normally used in conflict analyses.

This indictment of the theory behind police homicides as an ideal measure of social control is only amplified by the many issues regarding data reliability and reporting error with respect to American law enforcement killings. Though they are certainly the most reliable source

of police homicides data available in the United States, the accuracy of the FBI Supplemental Homicide Reports used to construct this paper's dependent variable might be one source of potential bias in statistical analysis of law enforcement homicide outcomes. Though homicide is generally considered one of the easiest types of crime to measure and track statistically, since its severe nature makes it unlikely that it will go unreported or be successfully covered up, it is difficult to obtain accurate information on the total number of people killed by police around the United States. The rigorous maintenance of official homicide records is generally limited to killings not committed by public servants, and the deficiencies of the few systems that attempt such enumeration with respect to law enforcement agencies have long been criticized by researchers (Sherman and Langworthy 1979). In fact, there are only two such systems: the National Vital Statistics System (NVSS) maintained by the National Center for Health Statistics, which compiles death certificate data obtained from medical examiners or coroners, and the FBI's SHR, which gathers incident reports on "justifiable homicides"⁸ from participating police departments themselves.

Though researchers have sometimes tried to draw conclusions about the accuracy of these reports based solely on the observed disparities between the two, a growing body of recent literature indicates that both systems underreport the number of civilians killed by police (Loftin et al. 2003; Van Court and Trent 2004). Loftin and his colleagues provide a particularly useful discussion of the methodological issues behind this phenomenon, and conclude that "at present, reliable estimates of the number of justifiable homicides committed by police officers in the United States do not exist" (Loftin et al. 2003:1121). The NVSS systematically underreports

⁸ This is the technical classification for all killings by law enforcement agents, regardless of circumstances. To some, the term itself implies an unaccountable and self-justifying perspective within law enforcement when it comes to killings committed by their own.

police homicides because medical certifiers often fail to note police involvement on death certificates, thereby falsely classifying many cases as civilian homicides. The SHR is dependent on self-reporting by police departments that partake in the FBI's Uniform Crime Reporting Program, not all of which file the SHR every month or even at all. Some departments specifically exclude information on killings committed by law enforcement agents from their SHRs.

These disconnects are particularly troubling in light of the fact that the SHR reported 29% more police homicides than the NVSS on a national level from 1976 to 1998, but twenty nine states, a solid majority, had higher total reported police homicides by the NVSS than SHR . It should also be noted here that the higher national average of SHR reports is driven by massively greater reporting of police homicides in highly populated states. If police department underreporting on the SHR is even greater than the bureaucratic underreporting of the NVSS across the country, as it clearly is in the majority of states, then even the highest levels of police homicides in states where the SHR reports more than the NVSS are likely underestimates. Additional support for this theory comes from the Crime Control Institute in Washington D.C. (Sherman et al.1986), which compared SHR reported police homicides with survey data collected by the researchers in American metropolitan areas. Most of the years studied indicated at least some underreporting by law enforcement agencies, though questions remain about the implications of those findings for the reliability of the SHR. It is possible that some sort of imputation based on the quantity and nature of excluded reports could provide a more accurate picture of police homicides, but that issue will require further investigation. Wadsworth and Roberts (2008) may provide a good starting point for this task, as they provide an excellent overview of imputation techniques for offender and situational characteristics that may be

unreported in some SHRs. They refer to the exclusion of unreported criminal incidents as the “dark figure of crime,” but do not specifically address the dark figure of police homicide.

Though the research presented in this paper did demonstrate the validity of racial threat predictions about law enforcement violence, it also raised a number of important questions about conflict-oriented research on that specific dependent variable. Having already fallen out of favor and largely been replaced by police force size, the police homicide variable has now been definitively shown to follow force size as a social control outcome, in addition to facing a series of disheartening data reliability issues. Though it must be remembered that the current analysis did support racial threat as a predictor of increased state violence, a result that may give hope to future researchers who have access to better police data, continued steps toward better understanding state coercion and stratified societies may have to rely on a different set of outcomes.

REFERENCES

- Bayley, David H. 1985. *Patterns of Policing : A Comparative International Analysis*. New Brunswick, NJ: Rutgers University Press.
- Belur, Jyoti. 2010. "Why Do The Police Use Deadly Force?: Explaining Police Encounters in Mumbai." *British Journal of Criminology* 50:320-341.
- Bittner, Egon. 1975. *The Functions of the Police in Modern Society*. New York, NY: Jason Aronson Publishers.
- Blauner, Robert. 1972. *Racial Oppression in America*. New York, NY: Harper and Row.
- Blalock, Hubert M. 1967. *Toward a Theory of Minority Group Relations*. New York, NY: Capricorn Books.
- Chevigny, Paul G. 1990. "Police deadly force as social control: Jamaica, Argentina, and Brazil." *Criminal Law Forum* 1:389-425.
- , 1995. *Edge of the Knife: Police Violence in Americas*. New York, NY: New Press.
- Cohn, Steven, Steven E Barkan, and William A Halteman. 1991. "Punitive Attitudes Toward Criminals: Racial Consensus or Racial Conflict ?" *Social Problems* 38(2):287-296.
- Collins, Randall. 1975. *Conflict Sociology*. New York, NY: Academic Press.
- , 1990. "Conflict Theory and the Advance of Macro-Historical Sociology." Pp. 68-87 in *Frontiers of Social Theory: The New Synthesis*, edited by George Ritzer. New York, NY: Columbia University Press.
- Frey, William F. 2011. *Melting Pot Cities and Suburbs: Racial and Ethnic Change in Metro America in the 2000s*. Washington, D.C.: The Brookings Institution.
- Garland, David. 2000. "The Culture of High Crime Societies." *British Journal of Criminology* 49:347-375.

- Goode, William J. 1972. "Presidential Address: The Place of Force in Modern Society." *American Sociological Review* 37:507-19.
- Greenberg, David, Ronald Kessler, and Colin Loftin. 1985. "Social Inequality and Crime Control." *Journal of Criminal Law and Criminology* 76:684-704.
- Hausman, Jerry., Bronwyn Hall, and Ziv Griliches. 1984. "Econometric Models for Count Data with an Application to the Patents-R&D Relationship." *Econometrica* 52:909-938.
- Holmes, Malcolm D. 2000. "Minority Threat and Police Brutality: Determinants of Civil Rights Criminal Complaints in US Municipalities." *Criminology* 38:343-368.
- Jackson, Pamela I. 1989. *Minority Group Threat, Crime, and Policing*. New York: Praeger.
- Jacobs, David. 1979. "Inequality and Police Strength: Conflict Theory and Coercive Control in Metropolitan Areas." *American Sociological Review* 44:913-925.
- Jacobs, David, and David Britt. 1979. "Inequality and Police Use of Deadly Force: An Empirical Assessment of a Conflict Hypothesis." *Social Problems* 26:403-412.
- Jacobs, David, Jason T. Carmichael and Stephanie L. Kent. 2005. "Vigilantism, Current Racial Threat, and Death Sentences." *American Sociological Review* 70:656-677.
- Jacobs, David, and Robert M. O'Brien. 1998. "The Determinants of Deadly Force: A Structural Analysis of Police Violence." *American Journal of Sociology* 103:837-862.
- Jacobs, David, and Ronald E. Helms. 1997. "Testing Coercive Explanations for Order: The Determinants of Law Enforcement Strength over Time." *Social Forces* 75:1361.
- Kane, Robert J. 2003. "Social Control in the Metropolis: A Community-Level Examination of the Minority Group-Threat Hypothesis." *Justice Quarterly* 20(2):265-295.
- Kania, Richard, and Wade Mackey. 1977. "Police Violence as a Function of Community Characteristics." *Criminology* 15:27-48.

- Kent, Stephanie L, and David Jacobs. 2005. "Minority Threat & Police Strength From 1980-2000: A Fixed-Effects Analysis of Large U.S. Cities." *Criminology* 43:731-760.
- Kubrin, Charis E., and Ronald Weitzer. 2003. "Retaliatory Homicide: Concentrated Disadvantage and Neighborhood Culture." *Social Problems* 50:157-180.
- Liska, Allen E., and Jiang Yu. 1992. "Specifying and Testing the Threat Hypothesis." Pp. 53–68 in *Social Threat and Social Control*, edited by Allen Liska. Albany, NY: State University of New York Press.
- Liska, Allen E., Joseph Lawrence and Andrew Sanchirico. 1982. "Fear of Crime as a Social Fact." *Social Forces* 603: 760-770.
- Liska, Allen E., Michell Chamlin, and Mark Reed. 1985. "Testing the Economic Production and Conflict Models of Crime Control." *Social Forces* 64:119-38.
- Loftin, Colin, Brian Wiersema, David McDowall, and Adam Dobrin. 2003. "Underreporting of Justifiable Homicides Committed by Police Officers in the United States, 1976-1998." *American Journal of Public Health* 93:1117-1121.
- Nalla, Mahesh, Michael Lynch, and Michael Leiber. 1997. "Determinants of Police Growth in Phoenix, 1950-1988." *Justice Quarterly* 14:115-143.
- Quillian, Lincoln and Devah Pager. 2001. "Black Neighbors, Higher Crime? The Role of Racial Stereotypes." *American Journal of Sociology* 107:717–767.
- Quinney, Richard. 1974. *Critique of Legal Order: Crime Control in Capitalist Society*. Boston, MA: Little, Brown and Company.
- Reiss, Albert J. 1980. "Controlling Police Use of Deadly Force." *The Annals of the American Academy of Political and Social Science* 452:122-134.
- Sampson, Robert J. 1987. "Urban Black Violence." *American Journal of Sociology* 93: 348–82.
- Shelden, Randall. 2001. *Controlling the Dangerous Classes*. Boston, MA: Allyn and Bacon.
- Sherman, Lawrence W. 1980. "Perspectives on Police and Violence." *The Annals of the American Academy of Political and Social Science* 452:1-12.

- Sherman, Lawrence W., and Robert H. Langworthy. 1979. "Measuring Homicide by Police Officers." *The Journal of Criminal Law and Criminology* 70:546-560.
- Sherman, Lawrence W., Ellen G. Cohn, Patrick R. Gartin, Edwin E. Hamilton, and Dennis P. Rogan. 1986. *Citizens Killed by Big City Police, 1970–1984*. Washington, DC: Crime Control Institute.
- Sorensen, Jonathan R., James W. Marquart, and Deon E. Brock. 1993. "Factors Related to Killings of Felons by Police Officers: A Test of the Community Violence and Conflict Hypotheses." *Justice Quarterly* 10:417-440.
- Smith, Douglas. 1986. "The Neighborhood Context of Police Behavior." *Crime and Justice* 8:313–41.
- Stolzenberg, Lisa, Stewart J. D'Alessio, and David Eitle. 2004. "A Multilevel Test of Racial Threat Theory." *Criminology* 42:673–698.
- Stults, Brian J., and Eric P. Baumer. 2007. "Racial Context and Police Force Size: Evaluating the Empirical Validity of the Minority Threat Perspective." *American Journal of Sociology* 113:507–546.
- Van Court, Jason and Roger B. Trent. 2004. "Why Didn't We Get Them All?: Analyzing Unlinked Records in California's Linked Homicide File" *Homicide Studies* 8: 311-321.
- Wadsworth, Tim, and John M. Roberts. 2008. "When Missing Data Are Not Missing: A New Approach to Evaluating Supplemental Homicide Report Imputation Strategies." *Criminology* 46:841-870.
- Weber, Max. 1978. *Economy and Society*, edited by Guenther Roth and Claus Wittich; translated by Ephraim Fischhoff et al. Berkeley, CA: University of California Press.