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Karen F. Parker

John M. MacDonald

Wesley G. Jennings

Geoffrey P. Alpert
University of South Carolina - Columbia, geoffa@mailbox.sc.edu

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RACIAL THREAT, URBAN CONDITIONS AND POLICE USE OF FORCE: ASSESSING THE DIRECT AND INDIRECT LINKAGES ACROSS MULTIPLE URBAN AREAS

Karen F. Parker
University of Florida

John M. MacDonald
RAND Corporation

Wesley G. Jennings
University of Florida

Geoffrey P. Alpert
University of South Carolina

Abstract

Traditionally explanations of police use of force have relied on a racial threat perspective. Tests of this perspective, however, typically offer a single indicator of threat (the relative size of the black population) and fail to adequately take into account the complex relationship between racial threat and police use of force. Drawing on racial threat, social disorganization, and police use of force literature, this study hypothesizes that macro-level patterns in police use of force are embedded in the racial and structural composition of cities and the organizational climate of local politics and police departments. The present study examines these relationships using official police use of force data collected in 73 large U.S. cities. Structural equation analyses suggest that structural indicators associated with racial threat and social disorganization/disadvantage impact police use of force indirectly through the influence of police organizational factors. On the other hand, the political climate and the level of social disorganization in urban areas have a direct bearing on the rates of police use of force. The implications of these findings for research and theory on police use of force are discussed.

What factors determine the use of force by police? Structural explanations of police use of coercive control traditionally have focused either on conventional assumptions regarding community violence or racial threat explanations. The conventional assumption suggests that police use force in reaction to the dangers they encounter in communities (Fyfe, 1980; Sherman & Langworthy, 1979). Racial threat explanations, in contrast, suggest that coercive control of citizens by the police is a political instrument used to suppress the potential threat lower classes or minorities pose to the hegemony of the white elite (Chambliss & Seidman, 1980). Although previous research on police use of deadly force suggests that the conventional assumption does play a role in explaining police-on-citizen violence, sociological work has found more support for threat explanations (see Jacobs & O'Brien, 1998; Holmes, 2000). To date, structural-level work on police behavior has focused almost exclusively on political or racial threat explanations and ignored the broader array of structural characteristics and police organizational properties that may account for aggregate explanations of police use of force.

In the present study, we offer an integrated conceptual model of the most common use of force by police—nonlethal force. We merge indicators of structural conditions with police organization-level data in order to identify the context in which police use of force varies. The conceptual model incorporates dimensions of the racial threat perspective while also taking into account the contextual (ecological) structure of cities and nature of police organizations in one coherent theoretical framework. Specifically, we integrate racial threat and urban disadvantage perspectives (Wilson, 1987; Massey, Gross, & Shibuya 1994; Sampson, Raudenbush, & Earls 1997) with literature on police organizations to explain the rates of police use of force. We propose that differences in the aggregate rates of police-on-citizen force can be explained by examining the interconnections between the social, economic, and political characteristics of cities and the style of policing. To begin, we briefly review previous macro-level research on police use of force.

◫ Macro-Level Police Use of Force Research

Police use of force is a topic of great importance and debate among criminologists, which explains the considerable amount of research devoted to it in the literature (see reviews by Geller & Toch, 1995; Adams, 1999; Barlow & Barlow, 2000). Specifically, studies of police use of force have examined how individual, situational, community, and organization-level determinants explain its use (Adams, 1999). Geller and Toch (1995) review the literature and pinpoint many important factors that affect police use of force, particularly situational ones. Since the 1960s, a general theme in much of the literature is that those who

challenge the "authority" of the police are more likely than others to experience police use of force (Reiss, 1971). Not surprisingly, research indicates that African-Americans are overrepresented among excessive force complaints filed against law enforcement agencies (Pate & Fridell, 1993). Complaints filed by African-Americans, however, are less likely to be sustained than complaints filed by Hispanic or white citizens.

Several studies have examined the link between race and policing at the neighborhood level of analysis. Many of these studies found significant neighborhood differences on attitudes toward police and perceived policing style (Schuman & Greenberg, 1972; Alpert & Dunham, 1988; Weitzer, 1999). Moreover, research over the past four decades has overwhelmingly found that minorities, males, juveniles, and citizens from lower socioeconomic status have more negative attitudes toward the police (for review, see Hurst & Frank, 2000).

Building on this literature, a handful of recent studies have found that suspect race and demeanor are strong determinants of an officer's decision to use force (see Garner, Maxwell, & Heraux, 2002; Reisig, McCluskey, Mastrofski, & Terrill, 2004; Terrrill & Mastrofski, 2002; Worden, 1995). For example, Mastofski, Reisig, and McCluskey (2002) found that suspects encountered by the police in neighborhoods with higher levels of concentrated disadvantage had a greater probability of displaying resistance toward the officer(s), and this lack of deference was associated with an increased likelihood of the officer resorting to force. Both Terrill and Reisig (2003) and Terrill (2003) found that officers were more likely to use force in areas characterized by higher levels of disadvantage, regardless of whether or not the suspect offered any resistance or deference to the officer during the police-suspect encounter. This research is consistent with other studies that have found police are more likely to use force when the subjects reside in predominately black neighborhoods (Barlow & Barlow, 2000; Georges-Abeyie, 1991; Smith, 1986; Worden, 1995). While these studies highlight the influence of structural factors on the perceived and actual behavior of the police and police use of force, one notable limitation is that much of the previous research uses a single site or area.

The majority of city-level studies on police use of force also focus on its most infrequent but serious application—the use of deadly force (see e.g., Jacobs & Britt, 1979; Jacobs & O'Brien, 1998). Unfortunately, many of these studies failed to report basic descriptive information about the organizational characteristics of law enforcement agencies across cities, which limits our knowledge of why use of deadly force rates fluctuate so significantly between police departments (Geller & Scott, 1992). As a result, few studies have been able to examine the concomitant role of police organizational factors and community structural factors on police use of force.

Wilson's early work on police organizations suggested that police work is carried out under the influence of a political culture (Wilson, 1968) and that police aggressiveness occurs more often in departments with legalistic styles

(Wilson & Boland, 1978). The style and organizational structure of the police department affects officer behavior, including using force (Alpert & MacDonald, 2001). Manning (1994) makes this point when he states, "American policing has been and remains highly politicized, especially locally" (p.675).

The authority that police are empowered with by the state and the citizenry lies in their restraint of the use of force (Bittner, 1990). However, this mandated power is not independent of the prevailing political climate but a product of a "negotiated, politically allocated function shared with other agencies" (Manning, 1994, p. 675). The issue becomes further complicated by the virtual absence of a widespread, unifying mandate regarding the acceptable applications of police use of force (Manning, 1977). Police agencies rely on the local political culture that governs a municipality. As a result, the city government is able to exert its influence on the local police agency. The police are organizationally and legally bound to apply sanctions within a politically defined region (Gibbs, 1966), and this region and its accompanying political climate may change with the whims of the time, changes in representation, or in response to police abuses of power. Therefore, it is perceivable that a political climate that supports an aggressive policing style can raise the potential for misapplication of police force.

The literature highlights the importance of taking into account the influence of distinct organizational differences on police use of force within the context of the socioeconomic and political environment of municipalities. One notable example is Klinger's (1997) ecological community-level explanation, which he developed in response to what he considered a minimal amount of research about "the possibility that police action might vary across urban neighborhoods" (Klinger 1997, p. 278). This approach offers a multilevel perspective that integrates the macro-level features of police organizations and local communities with the micro-level behaviors that characterize police-suspect encounters (Klinger, 2004). Klinger argued that police might exercise less vigor (i.e., exercise their legal authority less) in districts where deviance levels are high (Klinger, 1997); these districts also tend to be areas that are disproportionately minority and black (Sampson & Wilson, 1995).

Other studies investigating multicity or community differences in police use of force tend to rely on either the conflict or community violence perspectives and ignore police organizational level factors. While predictors from both perspectives have empirical support (Jacobs & O'Brien, 1998; Liska &Yu, 1992; Sorensen, Marquart, & Brock, 1993), the research suggests more support for the racial threat perspective (Jacobs & O'Brien, 1998; Liska & Yu, 1992). The variable "percent minority," for example, is interpreted as an indicator of racial threat, and research finds that city police departments disproportionately use deadly force against minorities (Jacobs & O'Brien, 1998). These results are therefore interpreted as indicators of the police using deadly force in an effort to maintain official social control. To date, research has yet to examine the relationships between racial threat, socioeconomic and political structures of urban

areas, the formal organizations of the police, and police use of force. The present study fills this gap in the literature by offering a conceptual framework that accounts for this complexity.[1]

❋ Theoretical Arguments

We argue that police use of force is embedded in the racial and structural composition of cities and the organizational climate of local politics and police departments. While individual and situational factors affect police-on-citizen violence (e.g., police crackdowns; see Sherman, 1990), the basic premise of this study is that social and economic characteristics of cities and the relationship of these characteristics with the local political climate and the police organization explain the variation in aggregate rates of police use of force. First, we propose to incorporate racial threat and social disorganization perspectives into the macro-level study of police use of force. We argue that structural conditions associated with racial threat and disorganization/urban disadvantage contribute to the breakdown in informal social control, resulting in higher rates of police use of force.[2] Secondly, we consider the indirect relationship between structural characteristics and use of force via police organizations. That is, we argue the organizational climate of police departments is likely influenced by contextual (ecological) characteristics of cities, impacting the sense of connection between residents and the political system, and resulting in higher rates of police use of force. In an effort to fully delineate this conceptual framework, we briefly review the racial threat literature.

Racial threat theories suggest that as the relative size of the minority group increases, members of the majority group perceive a growing threat to their po-

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[1] In addition to the threat perspective, we also acknowledge the relevance of the conventional assumption or community violence explanation of police use of force. In the initial set of analyses, we tested for the community violence perspective but found no empirical support for the relationship between police rates of force and violent crime rates. Given that the focus of this present study is nonlethal force it is not unreasonable to find that these incidents are not a function of police responding to incidents of lethal threat. After all, most incidents of nonlethal force used by the police are cases in which citizens are noncompliant with officer orders (Adams, 1999).

[2] The threat arguments assumes homogeneity within the black community when dealing with the police while, in truth, much of the literature reveals a great deal of diversity (both positive and negative) in relations between black communities and the police (Weitzer, 2000). While we agree that neighborhood differences in attitudes toward the police may impact how the police and citizens perceive threats, the ability to measure the existence of diversity in relationships between black communities and police is beyond the conceptual scope of this study and our data.

sitions and take steps to reduce the competition (Blalock, 1967). Blalock argues that the response of the majority to the increase in minority size assumes two forms: competition over economic resources and power threats. Recognizing that these two forms of threat are difficult to disentangle, researchers have investigated two conceptually distinct threat-based hypotheses—political threat and economic threat, in accordance with Blalock's work. The political threat hypothesis postulates that as the relative size of the black population increases, the state will increasingly perceive blacks as a threat to whites' political power and intensify social control to maintain the dominant position of whites. On the other hand, the economic threat hypothesis asserts that as blacks compete for jobs, positions, and economic resources, they increasingly become a threat to the economic well-being of whites. As a result, social control efforts can be used to exclude blacks from participating in the economic sphere and thus lessen the economic competition between the racial groups.

Studies have linked racial threat (via the relative size of the black population) to police use of deadly force (Chamlin, 1989), the death penalty (Phillips, 1986; Jacobs & Carmichael, 2002), interracial killings (Jacobs & Wood, 1999), other types of social control over blacks outside of the criminal justice system, such as lynching (Corzine, Creech, & Huff-Corzine, 1983; Corzine, Huff-Corzine, & Creech,1988; Tolnay, Beck, & Massey, 1989), as well as fear of crime (Quillian & Pager, 2001). Moreover, researchers have found that the size of the minority population is directly related to heightened use of official social control (see Jackson & Carroll, 1981; Brown & Warner, 1992; Eitle, D'Alessio, & Stolzenberg, 2002). While the research documents the influential effect of minority presence on social control, we consider the following important considerations.

First, recent studies acknowledge that one of the most significant limitations in the racial threat literature is the dependency on the relative size of the black population as the sole measure of racial threat (see Eitle et al., 2002; Stolzenberg, D'Alessio, & Eitle, 2004; Liska, 1987). While there is support for the positive impact of black percentage on police size, expenditures, use of deadly force, and total arrest rate (Liska & Chamlin, 1984; Jackson & Carroll, 1981; Liska, Lawrence, & Benson, 1981), these studies have used one measure of racial threat—black composition. In this study we incorporate two indicators of racial threat—black composition (the relative size of the black population) and racial inequality. Racial inequality has been offered as a valid indicator of racial economic threat in previous studies (Eitle et al., 2002; Olzak, 1990; Jacobs & Wood, 1999; Stolzenberg et al., 2004).

Second, although Blalock (1967) specifically discusses the distinct impact of the perceived economic and political threat posed by minority groups, few studies include both political and economic measures in their empirical work (see Jacobs & Carmichael, 2002; Eitle et al., 2002). By incorporating indicators of police organizational climate and the political mobilization of blacks in city government, we are able to account for potential rival factors as we estimate the relationship between racial threat and police use of force at the macro-level. In

addition, including multiple indicators in our study and testing for simultaneous equations allows us to estimate the potential for both direct and indirect linkages between racial threat indicators, the political climate, and use of police force.

Finally, we take into account the level of social disorganization/urban disadvantage in urban areas in our theoretical model. That is, we advance the literature by testing for potential linkages between urban disadvantage and the use of social control (police use of force) in a way that is consistent with racial threat and race-relations arguments. Scholars have found evidence of high levels of racial residential segregation and concentrated economic disadvantage in urban areas (Massey & Eggers, 1990; Alba, Logan, & Stults, 2000). We argue that segregation and concentrated disadvantage in urban areas may increase anti-black affect and racial threat, subsequently leading to higher rates of police use of force.

◈ Conceptual Model

As stated, our conceptual model takes into account both racial threat and social disorganization/disadvantage perspectives in a macro-level examination of police use of force across multiple urban cities. Figure 1 delineates some of the direct and indirect linkages between racial threat, disorganization/disadvantage and social control.

◈ Figure 1
Conceptual Model of Police Use of Force
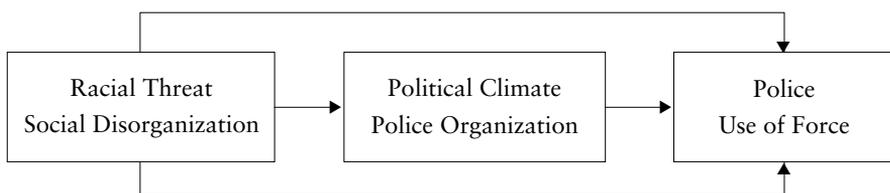
To begin, we argue that racial threat is directly related to police use of force. The racial threat perspective suggests that as the size of the minority population increases, the need for the police to use force and protect the interests of the dominant groups becomes greater (Chambliss & Seidman, 1980). We test this claim by hypothesizing that:

> H1: *As the size of the black population increases, police use of force also increases.*

The second indicator of racial threat, racial inequality, incorporates ratio measures of the degree of racial disparities in unemployment, income levels, and educational attainment in urban cities in an effort to capture economic rivalries between blacks and whites. The ratio of white to black unemployment has been offered as a valid indicator of racial threat in previous research (Olzak, 1990; Jacobs & Wood, 1999). Because large scores on ratio indicators indicate less racial economic threat, and thus less perceived threat, racial inequality should be inversely related to police use of force. We hypothesize that:

H2: *As racial inequality increases, police use of force decreases.*

Turning to the hypothesized relationship between disorganization/urban disadvantage (racial residential segregation, economic deprivation, residential mobility) and police use of force, we expect that indicators consistent with social disorganization/disadvantage will influence the community's abilities to control various types of antisocial behavior (Shaw & McKay, 1942; Wilson, 1987). Low economic status, higher levels of racial/ethnic heterogeneity, and a high degree of residential mobility affect a community's level of social disorganization (Crutchfield, Geerken, & Gove, 1982; Kornhauser, 1978; Bursik, 1988). Sampson and Groves (1989) argue that, "low-socioeconomic-status communities will suffer from a weaker organizational base than higher-status communities" (1989, 780). Therefore, these communities have less ability to engage in the necessary informal social control to inhibit crime and deviance. Poverty and racial isolation are also key conditions leading to an increasingly disengaged social environment—deterioration of housing, schools, family disruption, recreational facilities, and other community organizations (Wacquant & Wilson, 1989). Researchers have documented that these structural disadvantages are stratified across racial and ethnic lines (Massey & Denton, 1993; Massey et al., 1994). In the urban city, blacks have become largely socially isolated from whites and suffer greater levels of disadvantage within these environments (Massey & Eggers, 1990; Sampson & Wilson, 1995).

When incorporating these arguments, it becomes evident that cities with higher levels of social disorganization and disadvantage are less able to regulate the behavior of their residents. Residents of low-income minority communities are also more likely to be disconnected from the political establishment. Research by Cohen and Dawson (1993), for example, indicates that in areas with high concentrations of poor minorities, residents are less connected to political institutions and more distrustful of the political system in general than residents of "middle class" areas. In cities with high levels of minority concentration and structural inequality, therefore, there should be a higher prevalence of police use of force because police and community relations are particularly strained and the police represent the main instruments of social control (Weitzer, 1999). Given this, our theoretical expectation is that:

H3: *As social disorganization/disadvantage increases, police use of force also increases.*

Considering the potential for indirect effects is also central to this research—in particular, that the level of police organization mediates the influence of racial threat and social disorganization/disadvantage on police use of force. City governments directly affect the type and style of police work that is conducted (Klinger 1997; Manning 1994). As Wilson (1968) notes, "police work is carried out under the influence of a *political culture*" (p. 233). As a result, the prevailing political culture of a city impacts the organizational structure of the police. Police and community relations are affected by the organizational structure of the police department (Manning 1994; Wilson, 1968). If the political establishment (the mayor and city council) of a city permits police departments to adopt certain styles of policing (e.g., aggressive, zero tolerance, etc.) that give the police a strong degree of autonomy, it is likely that police use of force against citizens will be more common. Therefore, we suggest that the effects of racial threat and urban disadvantages on police use of force are mediated by the political climate and style of policing adopted in cities.

To test this proposition, we examine the influence of political factors (via the race of the city mayor and the organization of the police) on the rates of police force used against citizens. Prior literature suggests that the presence of a black mayor in a city may help alleviate some of the tensions between the political system and the residents, since disadvantaged minority residents may feel a greater sense of connection with the political establishment if a minority political leader is in control of the city government (Saltzstein, 1989). Research indicates that cities with black mayors have more active black political participation and greater levels of trust in local government (Abney & Hutcheson, 1981; Bobo & Gilliam, 1990). The presence of a black mayor is associated with a higher black representation among police officers and adoption of citizen controls (Saltzstein, 1989). Evidence also indicates that a black mayor is associated with fewer police killings of black civilians (Jacobs & O'Brien, 1998). Accordingly, we expect that the presence of black mayors would reduce incidents of police use of force through the creation of a greater sense of trust in the political establishment and police policies that were more responsive to citizen concerns.

H4: *The presence of a black city mayor reduces police use of force.*

Furthermore, when taking into account the role of police organizations, we expect that certain aspects of police organizations will influence the rate of use of force and, more specifically, that these organizational factors will mediate the influence of structural characteristics on use of force rates. Police unions are organized to look out for the interests of their members and provide protection from scrutiny. As collective bargaining units, police unions should have a strong impact on police operations and management decisions (Reiss, 1992). With regard to police use of force, police unions are formally interested in defending officers who are accused of using excessive force and protecting the liability of the police officer (Kelling & Kliesmet, 1995). Police unions may, therefore,

provide a greater degree of autonomy to the police officer and as a result increase the likelihood that officers will use force against citizens, since the officer will know he or she has greater job security. This literature would lead us to expect that police unions will increase the rates of force in cities, particularly urban cities with high levels of structural inequality and racial threat.

On the other hand, law enforcement accreditation is also an important modern day aspect of law enforcement organizations. Accreditation is premised on the notion that professionally developed departmental-level policies and procedures can improve police behavior. Proponents of accreditation suggest that accreditation improves the professionalism and responsibility of police agencies (Fyfe, 1998). Accordingly, this literature would lead us to believe accreditation may reduce police use of force, since police will conduct their work in a more professional manner. However, we must also recognize that accreditation may be impeded by the presence of widespread disadvantage and disorganization in urban areas. Thus, our final set of hypotheses state that:

> H5a: *Police unions will mediate the effects of racial threat and social disorganization on police use of force.*

> H5b: *Police departmental accreditation will mediate the effects of racial threat and social disorganization on police use of force rates.*

❈ Data and Methods

We tested our theoretical perspective by analyzing the influence of city-level structural indicators on departmental use of force data. The unit of analysis is the city, which is consistent with other literature that has examined the effect of structural determinants of police use of force (see Jacobs & O'Brien, 1998). Despite the fact that there are important intra-city structural variations, we believe this unit of analysis is appropriate because police departments operate under city-level political administrations (Sampson & Cohen, 1988). The data for police use of force are based on responses to a national survey of law enforcement agencies conducted by the Police Executive Research Forum (PERF).

The PERF study was originally designed to determine police agencies' reporting systems, policy guidelines, and prevalence and litigation relating to the use of force (Alpert &Kenney, 1997). Thus, it was one of the first attempts to create a national database on police use of force incidents. The original study used a random sample drawn from a national mailing list compiled by the International City Manager's Association that contained 40% of the large municipal and county police agencies (N = 320) and 60% of the small agencies (N = 480). However, the survey results revealed that a significant amount of police agencies do not require formal reports in many instances when various forms of force are employed, and also that the number of incidents, rates of force, and complaints

of force varied substantially among agencies (see discussion of limitations by Pate & Fridell, 1993). Due to these limitations, the current study limits its sample to only those departments that provided complete police use of force reports for the calendar year 1996.

In an attempt to control for this departmental variation, the current sample is also limited to only those departments with a population of 100,000 or more to minimize the differences across reporting jurisdictions and increase the comparability of structural characteristics. The municipal and larger police agencies were found to be more likely to routinely collect complete data on the use of force incidents, which indeed may be related to their frequency of occurrence within these departments (Alpert & Kenney, 1997). The final sample is 73 American cities with a population of 100,000 whose police departments were surveyed.[3] In addition to the PERF survey, we also utilized the 1990 Bureau of Census population statistics (U.S. Bureau of Census, 1994) and data from the International City Managers Association.

Dependent Variable

Since we hypothesize that structural conditions will explain police use of force, we analyze the rate of police use of force incidents. This measure is calculated by dividing the number of incidents of force (in agencies that report all uses of nonlethal force) by the resident population of the agency and standardized by 100,000.[4] Use of force was defined by reporting agencies as any nonlethal force (excluding handcuffing a suspect) in which an officer or his or her supervisor was required to fill out a use of force report. We recognize that using official data on police use of force has its limitations since the data cannot be validated with any other data source. Because of skewness in the distribution of the dependent variable, this measure was converted to natural logarithmic form in the multivariate regression model.

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[3] Because over half of the responding agencies did not collect use of force data, there is an inherent sample selection bias in the present study. Departments that do not require the collection of use of force forms, for example, may have more severe use of force problems than those that do. There were no significant differences in population or basic demographic variables (city size, geographic region, percent black) between the missing and non-missing cities. The agencies that collected these data and provided them to PERF represent a broad geographic sample of agencies from across the nation. Unfortunately, there is no national clearinghouse of use of force data. Despite the limits of the sample used, we think that the importance of this issue warrants the use of these data for the present study.

[4] The data collected by PERF, unfortunately, did not ask police departments to disaggregate their use of force reports by race. As a result, we are not able to provide a direct test of racial threat perspectives on the likelihood that police will use force against minority groups (see Jacobs & O'Brien, 1998).

Independent and Control Variables

The concepts comprising our theoretical model are macro-level indicators that reflect the social and economic characteristics of urban cities. The indicators of our model include black composition, urban disadvantage (segregation and economic deprivation), racial inequality, residential mobility, political climate, and police organization. We employ these measures because of their theoretical relevance to structural explanations of violence in general, and police-on-citizen violence in particular (Liska & Yu, 1992).

To measure the presence of racial threat, we compute "black composition" by dividing the number of black persons by the total population. The racial threat hypothesis suggests that a greater presence of minorities threatens whites (Blalock, 1967) and, as indicated earlier, the relative size of the black population is the most commonly used measure of racial threat in the literature (see Stolzenberg et al., 2004). Our second measure of racial threat, racial inequality, is based on three ratio indicators: the ratio of white to black median family income; the ratio of white to black median years of schooling attained by persons 25 years old and over; and the ratio of black unemployment rates to white unemployment rates (see Jacobs & Britt, 1979; Jacobs & O'Brien, 1998; Messner & Golden, 1992; Parker & McCall, 1999). Using a principal components factor analysis, these measures were combined into a single "racial inequality" index. All three indicators loaded on the same factor at the 0.60 level or above.

In accord with social disorganization and urban disadvantage perspectives (Sampson & Groves, 1989; Wilson, 1987), several measures are employed: racial residential segregation, economic deprivation, and residential mobility. First, residential segregation is measured by the index of dissimilarity that reflects the unevenness in the distribution of two racial groups across census tracts within a city (Jacobs & Wood, 1999; Massey & Denton, 1993; Messner & Golden, 1992; Parker & McCall, 1999; Peterson & Krivo, 1993). Second, economic deprivation is an index that includes the percentage of persons living below the poverty line, the percentage of unemployed persons, and the percentage of children under age 18 not living with both parents. Using factor analysis, these two measures (racial residential segregation and economic deprivation) were combined in an overall composite measure of "urban disadvantage." All measures loaded on the same factor above 0.60. Third, residential mobility was operationalized as 1 minus the proportion of residents who reported they lived in the same residence for the previous five years.

In addition to measures of threat and social disorganization, we incorporate measures of the political climate and the style of police organization in large cities. First, we measure the political climate by the race of the mayor. We use a dummy variable indicating whether the city mayor is black. Second, we include two measures of police organization that have theoretical bearing on police behavior. Two separate dummy variable measures of police organization are included: whether a department has union representation and whether a department is nationally accredited. Finally, we include two control measures—

population size and south. Population size is the size of the resident city population and south is a dummy code where 1 indicates the city is located in the southern region of the United States. The population size measure was converted to natural logarithmic form to reduce the effects of outliers and increase the likelihood of bivariate normality (Fox, 1991).

❖ Results

Sample Description

Table 1 shows the means and standard deviations for all variables. The data indicate that on average there were 97 use of force incidents per 100,000 city residents. The official reported per capita force in these data is higher than that reported in a national self-reported study of police use of force (Bureau of Justice Statistics, 1997) because this official measure contains only large urban cities and can include multiple incidents of force used against the same citizen in a year. Fifteen percent of the cities in our sample had a black mayor. Fifty-three percent of the police departments were nationally accredited and 60% had a police union.

❖ Table 1
Descriptive Statistics for Variables

Variable	Mean	SD
Police Use of Force Rate (log)	97.07 (3.96)	121.05 (1.28)
Black Composition	20.92	16.60
Racial Inequality Index	4.55	.95
Urban Disadvantage Index	32.77	11.10
Residential Mobility	57.03	6.42
Political Power (Black Mayor)	.15	.36
Police Accreditation	.53	.50
Union Presence	.60	.49
South	.45	.50
Population Size	304,394.52	441,484.13

Model Estimation

We follow other social ecological literature (Rosenfeld, Mesner, & Baumer, 2001) and estimate structural equation models (SEM) of the relationships between racial threat, social disorganization/disadvantage, and police use of force, controlling for the mediating influence of the police organization. Specifically, we employ the use of SEM so that we can test the conceptual model and simulta-

neously estimate the direct and indirect effects of racial threat and structural indicators of social disorganization on police use of force when accounting for potential mediating influences of political climate and police organizational factors. This recursive model is estimated using the AMOS 4 software program.

Findings

Table 2 presents the results of the simultaneous maximum likelihood regression model of racial threat and social disorganization measures on political climate, police organizational factors, and police use of force. The chi-square test and other statistical tests of model fit, which indicate a good fit of the data to the model, are also reported in Table 2.[5] For a visual display of the relationships, a path diagram is provided in Figure 2, with only the statistically significant results shown.

The model directly addresses the question of whether variations in police use of force are attributed to variations in structural predictors of racial threat and social disorganization. First, we find that our indicators of racial threat do not have a direct impact on police use of force rates. An increase in the relative size of the black population does not directly influence police use of force rates, as predicted with hypothesis 1. Additionally, we expected that higher levels of racial inequality would have an inverse impact on police use of force (hypothesis 2), which was also not supported in this study. Our results do provide some support for the direct influence of social disorganization on use of police force. We find that residential mobility is positively associated with police use of force rates. These results, therefore, provide partial support for the third hypothesis in indicating the direct effect of one structural antecedent of social disorganization on police use of force. In contrast, the urban disadvantage index does not have a statistically significant, direct impact on use of force rates. Overall, we find no support for racial threat and limited support for social disorganization/disadvantage indicators on police force rates when estimating direct effects. These findings would call into question the utilization of these theories when understanding aggregated police (rather than criminal) behavior in urban cities if only direct effects were considered. However, building on an extant literature that documents the importance of political climate and police organizational factors to police use of force (see, for example, Klinger 1997; Manning 1994), we further hypothesize that these indicators will mediate the link between structural characteristics and police use of force rates. We now turn to the results concerning these more complex relationships.

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[5] All variance inflation factors for these independent variables are well below the value of 4.0 (Neter, Wasserman, & Kutner, 1989), indicating that multicollinearity is not a problem with these models.

We find solid evidence that police organizational characteristics mediate the relationships between racial threat, disorganization/disadvantage, and police use of force rates. In terms of racial threat indicators, the black composition in a city (racial threat) is negatively associated with the presence of police unions (B = -.026), which translates into higher rates of police force (B = 75.466). These findings support our hypothesis that unions would increase police use of force through their impact on police culture and protecting individual officer discretion and autonomy. On the other hand, none of the indirect linkages involving racial inequality, police organizations, and use of force were significant in the model.
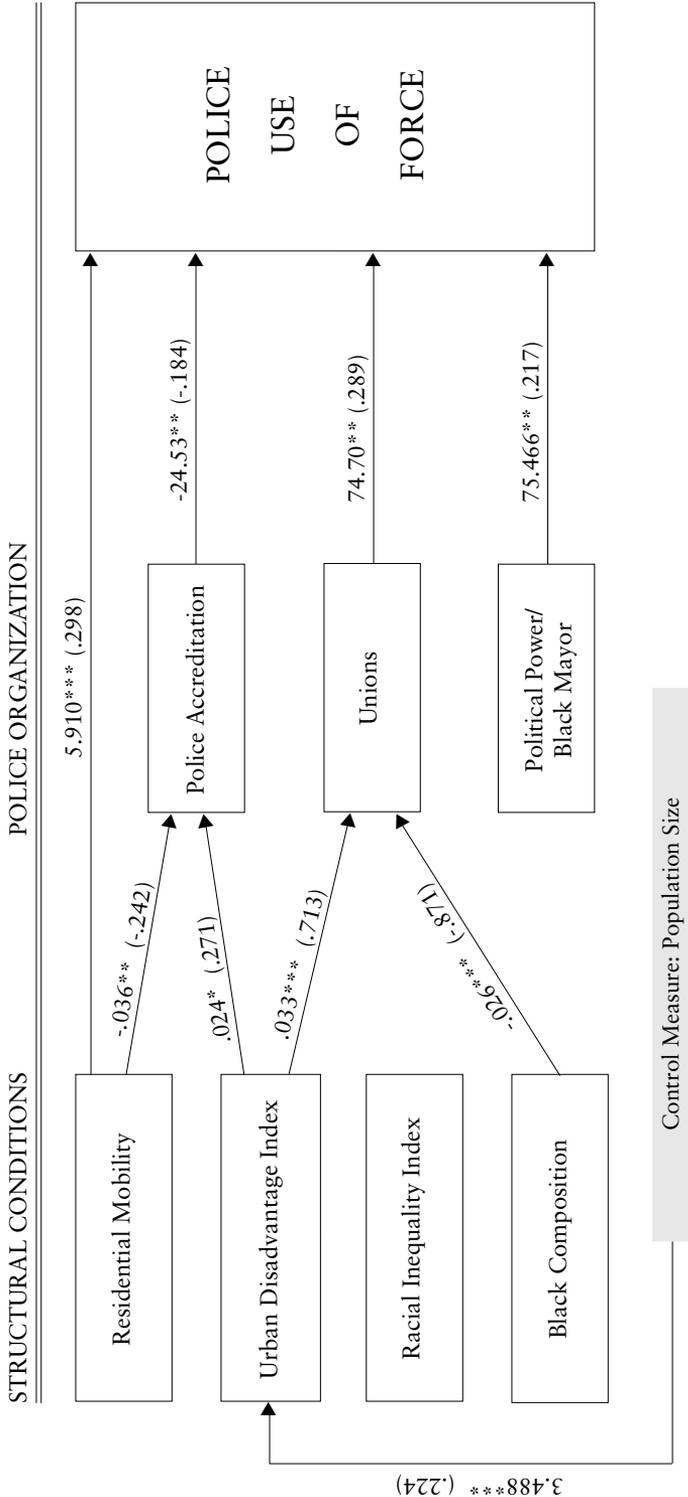
▨ Table 2

Maximum Likelihood Unstandardized Regression Estimates (and Standard Errors) for the Simultaneous Equation Model of Threat, Structural Conditions, Police Organization and Police Use of Force (N = 73).

| Variable | Police Organization | | | Police Use of Force |
	Accred.	Union	Political Power	
Racial Threat Indicators				
Black Composition	-.016 (.011)	-.026*** (.005)	.004 (.004)	.817 (1.490)
Racial Inequality	-.133 (.133)	.055 (.061)	.030 (.049)	21.515 (15.526)
Disorganization/Disadvantage Indicators				
Residential Mobility	-.036** (.016)	-.007 (.007)	.008 (.006)	5.910*** (1.965)
Urban Disadvantage	.024* (.015)	.033*** (.007)	.008 (.005)	.970 (2.072)
Police Organization and Political Climate Indicators				
Police Accreditation	——	——	——	-24.530** (14.201)
Union Presence	——	——	——	74.701*** (31.067)
Political Power (Black Mayor)	——	——	——	75.466** (36.997)
Population Size	——	——	——	-24.735 (18.554)

Model X^2 = 15.390, p = .165, TLI = .988, CFI = .997, RMSEA = .074

* $p < .10$ ** $p < .05$ *** $p < .01$;   —— denotes relationship not estimated.

◈ Figure 2
Structural Equation Model of the Relationship between Threat, Structural Conditions, Police Organization and Police Use of Force (N = 73) (Standardized Coefficients in Parentheses)

STRUCTURAL CONDITIONS   POLICE ORGANIZATION

Residential Mobility

Urban Disadvantage Index

Racial Inequality Index

Black Composition

-.036** (-.242)
.024* (.271)
.033*** (.713)
-.026*** (-.871)

Police Accreditation

Unions

Political Power/ Black Mayor

5.910*** (.298)
-24.53** (-.184)
74.70** (.289)
75.466** (.217)

POLICE USE OF FORCE

3.488*** (.224)

Control Measure: Population Size

* p < .10   ** p < .05   *** p < .01

While these findings are inconsistent with other literature on police use of deadly force (Jacobs & O'Brien, 1998) and indicate that the more frequently used non-lethal force is not directly or indirectly affected by economic divisions between blacks and whites (i.e., racial inequality), the null effect of this indicator on the use of social control is consistent with recent studies (Eitle et al., 2002; Stolzenberg et al., 2004). Overall, some support is found for our hypothesis concerning the indirect effect of racial threat on police use of force when mediated by police organizations. Importantly, police unions are more relevant to the racial threat indicators than accreditation.

Compared to racial threat, stronger support is found for the influence of social disorganization/disadvantage indicators on police use of force when police organizations are accounted for. Residential mobility is significantly associated with police department accreditation (B = -.036), which reduces the rates of police use of force (B = -24.53). The model also indicates that national accreditation has a significant negative effect on police use of force rates, holding other variables constant. We find also that higher levels of urban disadvantage have a positive impact on the presence of police unions (B = .033), which translates into higher rates of police use of force (B = 74.70). On the other hand, while the level of urban disadvantage also increases the likelihood of police accreditation (B = .024), police use of force is significantly reduced in urban cities as a result (B = -24.53). Thus, consistent with our predictions, the level of police organization appears to mediate the effects of racial threat (black composition) and social disorganization (residential mobility, urban disadvantage index) on police use of force rates.

The level of racial threat and social disorganization/disadvantage is not related to whether the mayor of the city is black (political power). Rather, political power among black mayors has a direct, positive effect on police use of force. We proposed that the presence of black mayors would reduce incidents of police use of force through reducing racial tensions and creating a greater sense of trust in the political establishment, as well as contributing to police policies that were more responsive to citizen concerns. The results, on the other hand, may indicate that the presence of a black mayor in cities may increase tensions between the police and the community because the police may feel that the city administrator does not support its policies for maintaining coercive social control. A good example of the tension between a black mayor and the police department is the city of Los Angeles, where Mayor Tom Bradley was consistently at odds with the police department, but was unable to effectively curb the aggressive style of policing minorities that the police had been engaging in for years.

The findings from the model support our claims that relationships between racial threat and police use of force are more complex than those previously examined in the literature. Aggregate rates of police use of force do not appear to be directly affected by racial threat; rather, one must also take into account the level of structural disadvantage, police organization, and the political

climate of cities. The results indicate that police use of force is greatest in cities with the greatest amount of residential mobility and where police unions and black mayors are present. These findings also suggest that police use of force is embedded within the structural, police organizational, and political dynamics of a city. In other words, police use of force can be explained on an aggregate level by structural factors related to the urban ecology, police organization, and political climates of cities. The influence of racial threat on police use of force is mediated by police organizations (specifically, the presence of police unions).

Our findings indicate that the presence of police unions has a positive impact on police use of force rates. Although literature directly addressing the structure, function, and role of police unions has been virtually nonexistent since the work of Juris and Feuille (1974), a relatively recent survey conducted by Kelling and Kliesmet (1995) of 18 police unions provides some insight into the views and positions of police unions across states toward police use of force.[6] The unions ranged in size from 21 to 2,500 members. Twelve of the unions were designated as bargaining units and the remaining 6 were from states that did not formally recognize police unions (i.e., also including what are commonly referred to as "right-to-work" states). Twelve of the 18 police unions felt that they had no role in determining use of force policy development; all but one, however, sensed they should at least have some role. The overwhelming consensus among the unions was that use of force guidelines and policies are necessary and important, but that they should only result in the union's involvement once a complaint is handed down. However, it is obviously in the best interest of the union for its officers to follow the correct procedures regarding use of force in order to save the union from the high costs of legal representation and defense.

Drawing from this research, it is likely that the police departments in the cities that have union representation will have higher rates of force because the unions ensure legal representation to their members without providing much oversight or input into how they (the police) are to exercise their discretion. However, one cautionary note is in order. There may be an inherent bias in this study's sample toward those cities with less union representation having higher use of force rates because the frequency of use of force tends to be higher in larger agencies (Alpert & Kenney, 1997).

Findings from this study suggest the importance of national accreditation in reducing the rates of force in urban cities. These findings are consistent with research that suggests organizational factors are important determinants of police officer behavior (Wilson, 1968; Smith, 1986). In this context, it appears

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[6] As of the early 1990s, nearly 75% of all police officers in the United States held active union memberships (Walker, 1992).

that nationally accredited agencies may have fewer problems with the misuse of force because their hiring and training requirements produce more professional police officers who use verbal tactics or other methods that avoid the use of force against citizens. Accreditation has its origins in 1979 with an effort to develop a minimal set of national standards for policing. As of 1995, as many as 368 agencies had been accredited and several hundred more were in pursuit of accreditation (Dantzker, 1997). Some large agencies have opted not to become accredited, however, because of the lengthy accreditation process (which usually takes three years) and because of the cost.[7]

Discussion and Conclusion

The findings from this study provide a preliminary basis for understanding the macro-level relationships between police and urban residents in American cities that account for aggregate patterns in police officers' use of force. The results lend support to social ecological explanations of aggregate patterns of police use of force. Both the racial threat and social disorganization/disadvantage perspective were found to be significant predictors on police use of force. Specifically, the economic changes in cities that increase the out-migration of residents from large cities (Wilson, 1987) create the conditions under which police are more likely to use coercive social control against civilians. It is not unreasonable to suggest that the manifestations of police use of force are strained community relations whereby the police are viewed as an occupying army. These findings appear to be partially consistent with earlier research indicating that police are significantly more likely to use or threaten to use force in predominantly poor neighborhoods (Smith, 1986).

Official measures of police-on-citizen force, however, cannot be explained solely in terms of economic deprivation. Rather, there appear to be deeper issues related to structural disadvantages and the strained relationship that these environmental factors produce with the police that explains the frequency of force used by the police. The empirical evidence from this research does not suggest that police use of force is completely contingent on social ecological factors. From these data it appears that the police organizational factors also influence the likelihood of police use of force. Police departments that are nationally accredited have significantly lower rates of force. These findings suggest that municipal governments can influence the behavior of their police by requiring standards in hiring and training that cultivate a more professional police force.

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[7] Accreditation is estimated to cost about $16,000 for a department of 1,000 members and an additional $16,000 every three years for reaccreditation (Bartollas & Hahn, 1999).

There are several substantial limitations to the data used in this study that prevent one from asserting a clear theoretical understanding of police use of force. First, these data are limited by the fact that they represent only official measures of police use of force. As a result, many departments in our sample may underreport the actual incidence of force used against citizens. Second, these data do not allow us to disaggregate force according to the race of the officer and suspect. Therefore, we cannot ascertain the extent to which force is actually applied to lower-class minorities as our conceptual model implies. The literature on police use of force, however, would imply that a disproportionate share of these use of force reports do involve poor minority suspects. Third, the official indicators of the race of the city mayor, the presence of police unions, and law enforcement accreditation do not actually measure the political culture of the city governments or police departments. Instead, these factors represent proxy indicators that are presumed to have theoretical bearing on the political culture of the city and police organization.

Despite the limitations of the official data used in the present study, the results suggest that one cannot focus solely on issues of racial threat in explaining macro-level patterns of police use of force. Conflict may be inevitable in the authority-based relationships (Turk, 1969) that exist in racially segregated cities where a chasm of misunderstanding and social distance exists between the city government and residents. The findings from this study do provide some hope for curtailing the rate of conflict between the police and citizens through focusing on changing the culture of the police organization.

In terms of social policy, it is important for social scientists to keep in mind that political institutions can play a key role in developing trust (Levi & Stoker, 2000). This is especially important in racially stratified cities where residents often have lost a sense of mutual obligation and trust, informal social controls have been decimated, and the government is all that is left to maintain social stability. The police as frontline bureaucrats are key players in the maintenance of political connection with citizens in disenfranchised communities. Controlling the rate of force used against citizens is an important component for establishing trust between the community and the government. Research evidence suggests that the more trusting citizens are of government, the less likely they are to violate laws (Tyler, 1990). Minimizing police use of force is, therefore, important for maintaining the legitimacy of government and social control.

Future research should attempt to collect more comprehensive use of force data at a national level that details the race of the officer and citizen as well as the type of training on policies for each police agency. These data also could be linked to public opinion data on the sense of connection to the police and political establishment. The improved data would allow the test of a more comprehensive model of police use of force, in which the impact of minority status could be explicitly delineated within the context of structural characteristics of the community and police department.

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