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Policy, Racial Threat, and Economic Conditions: A Look at Police Use of Deadly Force

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POLICY, RACIAL THREAT, AND ECONOMIC CONDITIONS: A LOOK AT POLICE USE OF DEADLY FORCE

by

JEFFREY S. NOWACKI

B.A. SOCIOLOGY

THESIS

Submitted in Partial Fulfillment of the
Requirements for the Degree of

MASTER OF ARTS
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B.A. Sociology, University of New Mexico, 2005
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ABSTRACT

In general, the literature suggests that police behaviors, such as the use of lethal force, can be controlled by placing limits on police discretion. One way to achieve this is through policy. Officers tend to use lethal force less frequently in cities where restrictive deadly force policies are in place. By the same token, research indicates that lethal force incidents are more prevalent in cities with 1) larger minority populations, and 2) greater levels of economic disadvantage. In this study, I examine how each of these factors (policy, minority population size, and economic disadvantage) affect police use of deadly force independent of each other, and whether police mediates the effect of the other variables. Using data from the Supplementary Homicide Reports from 1980-1984, I use negative binomial regression models to examine how racial threat, economic disadvantage, and restrictive policy affect police use of deadly force, whether policy mediates the effects of these other variables, and finally, whether the effects of policy are conditional on city-level threat and disadvantage. I estimate models for both total population and race-specific models so that I can test whether the effects on police use of lethal force vary between blacks and whites. Results indicate strong direct effects for policy, but not racial threat or economic disadvantage. Further, no mediating or conditional effects were found. These findings suggest that police discretion can play an important role in controlling police behavior, such as the use of deadly force.

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CHAPTER 1: INTRODUCTION

Research on the structural determinants of police use of deadly force focuses on two primary explanations: economic disadvantage and minority group threat (Jacobs and Britt, 1979; Jacobs and O'Brien, 1998; Liska and Yu, 1992). Largely absent from this work is an assessment of the impact of policy on police use of deadly force. This oversight is notable since restrictive deadly force policies have the potential to reduce deadly force incidents by limiting officer discretion regarding the conditions under which they can legitimately employ lethal tactics. Some studies examine these policy effects (Tennenbaum, 1994; Uelman, 1973) and generally find that restrictive deadly force policies are associated with lower rates of lethal force. Moreover, it is much easier to reduce lethal force incidents by making policy changes than by influencing structural correlates, such as economic disadvantage and minority group threat. Given evidence to suggest that policy might reduce police use of lethal force, more research is needed to examine the conditions under which policy can affect police behavior and the degree to which it can mitigate the effect of other structural risk factors, particularly disadvantage and minority group threat, which have also been linked to police use of deadly force.

One event that had a significant impact on police use of deadly force was the 1985 *Tennessee v. Garner* Supreme Court decision. Until 1985, police in many states were able to use lethal force against fleeing suspects in a variety of circumstances. This all changed when Edward Garner, a relatively small man who stood only 5'4" and weighed 100 pounds, was shot by a police officer in the back of the head from less than 30 feet away, and killed instantly. Garner, a prowler, would have probably been sentenced to probation. Garner's father filed a lawsuit and the Supreme Court ruled that

the officer's actions were unconstitutional. Under *Tennessee v. Garner*, the Supreme Court ruled that police officers may only use deadly force against a suspect when that suspect poses a significant threat of death or serious injury to an officer or others.

Research suggesting that the influence of structural factors differentially affects blacks and whites further complicates our understanding of policy effects. Nearly all previous studies of police use of deadly force find that blacks are overrepresented in lethal force incidents (Geller and Scott, 1992). Most likely, this is an artifact of blacks' over-representation in cities where crime rates are the highest, where disadvantage is most prevalent, and where group threat is the strongest. While some of these effects may be racially invariant, with blacks simply exposed to these influences in greater numbers (e.g., high crime rates and disadvantage), simply accounting for exposure does not explain away the effect of racial threat. Instead, the dynamics of growing minority populations may be politically meaningful. That is, as minority groups accumulate size, strength, and resources, the dominant group may feel threatened and respond in various ways, including police use of deadly force. In addition, police patrol and control tactics in disadvantaged areas, also characterized by high crime rates, lead to hostile encounters between blacks and the police that do not as commonly characterize police encounters with whites. Given these structural and interactional differences, the effectiveness of predictors of lethal force, including deadly force policy, might vary for whites and blacks. That nearly all of the reductions in police use of deadly force from 1970-1984 were due to reductions in the number of black fatalities (Sherman and Cohn, 1986), seems consistent with this hypothesis and suggests that it is important to examine the influence of policy and structural conditions separately for blacks and whites.

Using city-level data on deadly force incidents from the Supplementary Homicide Reports (SHR) and Census data from 1980-1984, I investigate the relationships between policy, structural characteristics, and deadly force incidents for blacks and whites. Data from this era represents a unique moment in history, when deadly force policies varied across states. Once the *Tennessee v. Garner* decision was passed in 1985, all of the states with policies inconsistent with the ruling were forced to modify their existing laws. Using data from the five years immediately prior to this ruling, I distinguish between states with policies consistent with the ruling and those with more relaxed policies in the years immediately preceding the ruling. I argue that cities in states with policies consistent with *Tennessee v. Garner* offered less discretion to officers than those in states with more relaxed policies. I then use this distinction to assess whether policies restricting discretion reduce the use of lethal force. I also examine whether such policies mediate the effects of structural factors, such as racial composition and disadvantage on police behavior and whether these circumstances may condition policy effects. Moreover, by conducting separate analyses for white and black populations, I assess whether the impact of policy and structural factors on police use of deadly force varies by race.

Three key questions guide my analysis: 1) Do policies limiting officer discretion affect officer behavior, such as the use of deadly force? 2) Do these policies mediate the effects of other common determinants, such as disadvantage and racial threat? 3) Are policy effects conditional on levels of disadvantage or minority presence? In general, I predict that while policy should affect officer behavior, its effects may be too diffuse or its implementation too reactive to directly affect deadly force incidents. However, such policy should limit the effects of structural variables, such as economic disadvantage and

racial composition, through limiting discretion available to officers. Moreover, policy may impact use of lethal force to varying degrees depending on environmental circumstances. That is, certain sets of circumstances will necessitate the use of deadly force more than others. Finally, I suggest that the impact of policy and structure on police use of lethal force varies by race, such that measures of disadvantage, racial threat, and policy may be stronger predictors of deadly force against blacks than whites. I begin addressing these questions with a general discussion of the effects of administrative policy on police use of deadly force.

CHAPTER 2: LITERATURE REVIEW

Police use of deadly force is discretionary. As such, the implementation of policies restricting its use should generally decrease lethal force incidents. For many years, however, these administrative polices were missing from many police departments. For example, in a survey of 71 Michigan police departments from cities with populations greater than 10,000, Chapman and Crockett (1963) found that over half of these departments had no written policies directing the use of deadly force. President Lyndon B. Johnson's 1967 Commission on Law Enforcement and Administration made it clear that the absence of such policies was something that needed to change (Fyfe, 1988). In response, many states implemented the common-law "fleeing felon" rule, which allowed officers to employ lethal force against suspects fleeing from crime scenes. Many states, however, enforced even more restrictive laws. By 1984, roughly half of the states had policies more stringent than the fleeing felon rule (Fyfe and Walker, 1990). This rule became the focus of the 1985 *Tennessee v. Garner* Supreme court decision[1].

In March of 1985 the Supreme Court issued a challenge to state laws authorizing broad use of lethal force. Ten years earlier, on the night of October 3, 1974, two police officers responded to a call concerning a prowler who gained entrance into a house on a quiet street. Upon arrival, one of the officers walked down the driveway to the house and heard a screen door slam shut and saw a young man dash from the house. This young man was Edward Garner. The officer shouted for Garner to stop, but he kept running toward a chain-link fence. Garner went to climb the fence, and the officer feared that

[1] While *Tennessee v. Garner* represents change in law more than policy, the decision caused individual departments to change their policies. Therefore, the *Garner* decision serves as a reasonable proxy for policy, and will be treated as such from here forward.

once over the fence, he would surely escape. From at least 30 feet away, the officer fired a single shot into the back of Garner's head, killing him instantly. Garner would have been sentenced to probation if he were apprehended. Garner's father filed a lawsuit against the officer, the Memphis Police Department, the city of Memphis, and the mayor. Litigation played out over the next ten years. At first, the case was dismissed, but when it was brought to the Supreme Court, the officer's actions were ruled unconstitutional (Fyfe, 1988; Fyfe and Walker, 1990). The *Tennessee v. Garner* decision is a defense of life policy, which permits the use of deadly force only when the suspect poses a threat to the health of the officer or another innocent party.

Whether restrictive deadly force policies actually serve as effective inhibitors against deadly force incidents remains unclear. On the one hand, it seems reasonable to believe that restrictive policies might serve to limit discretion and potentially clarify the conditions under which police use of deadly force is warranted. Making such a critical decision under pressure-filled situations is difficult for police officers, so removing decision making from officers may reduce use of lethal force.

A limited body of empirical research illustrates that restrictive policies, both before and after the *Tennessee v. Garner* decision, show at least some deterrent effect. For example, Uelman (1973) suggests that departments with restrictive deadly force policies experience fewer lethal force incidents than departments with less stringent policies. Uelman, however, cannot be certain whether this was an artifact of the policy, or if the policy came about as a reaction to other factors that might influence officer restraint, such as community and media pressure.

A study specifically examining the effects the *Tennessee v. Garner* decision on police use of deadly force finds support for the notion that restrictive policy reduces deadly force incidents. To investigate the degree to which the *Garner* decision affects deadly force usage at the state level, Tennenbaum (1994) divides states into two groups: constitutional states, whose laws were consistent with *Tennessee v. Garner* even before the decision, and a second group of unconstitutional states, whose laws were changed following *Tennessee v. Garner*. The results indicate that, overall, police use of deadly force decreased by about 16 percent following the *Tennessee v. Garner* decision. Tennenbaum also finds that *Tennessee v. Garner* affected the use of deadly force in both constitutional and unconstitutional states; however the impact was greater in unconstitutional states, as these states showed a reduction in homicides by police of roughly 24 percent as opposed to only 13 percent in constitutional states.

Despite some empirical support for a deterrent effect, other evidence suggests that restrictive lethal force policies may not substantially affect the volume of deadly force incidents. Restrictive policies may influence institutional attitudes more than actual police behavior. As noted in previous research, neither *Garner,* nor any other state law advises officers on particulars such as firing warning shots into the air or shooting at suspects in moving vehicles (Fyfe, 1988). Moreover, policy implementation is often reactive rather than proactive. That is, many states with restrictive policies may have been reacting to problems with the use of deadly force. These states may have had extraordinarily high rates of lethal force incidents, the media and community members may have raised awareness, and policies may have been implemented to address the problem. Alternatively, states with relaxed policies may not have had issues with police

use of deadly force, and thus no need for restrictive policies. If this is the case, we would not expect those states to experience significant reductions in lethal force post-*Garner*. Finally, the conditions under which lethal force incidents take place may be such that policies have little bearing on their outcomes. For example, Klinger and Brunson (2009) find that officers frequently experience perceptual distortions both prior to and during shooting incidents. These distortions could impact the officer's ability to make decisions regarding lethal force, including adhering to specific policies governing its use.

Other policing research indicates that stringent policies may not be effective in reducing discretion. For example, Dugan (2003) found that even where policy mandates arrest for domestic violence, it does not always happen. Moreover, while discretion might be removed from the decision to arrest, it is simply displaced to another part of the decision-making process. Officers still have discretion when it comes to deciding whether the officer had probable cause to believe that an assault took place (Buel, 1988). Additionally, Wanless (1996) suggests that the circumstances where arrest is mandatory varies across states. In some states, numerous conditions must be met before an arrest can be made, meaning that officers retain considerable discretion. These mandatory arrest policies show that even when policies intend to limit police discretion, considerable discretion is still available, and often that discretion is just moved to another part of the decision-making process. Specifically, policy is often limited by the fact that they are not always adhered to, even where state mandates are in place.

While this limited body of research suggests that policy seems to reduce the use of deadly force, researchers have not explored the degree to which the effects of policy might be conditioned by, or mediate, environmental factors known to lead to police use

of lethal force such as structural disadvantage and racial composition. I now turn to these areas to explore how policy may operate through them.

Race, Lethal Force, and Policy

Restrictive deadly force policies may have the strongest effect on reducing lethal force incidents against blacks for two reasons: blacks are most frequently the targets of police use of deadly force, and lethal force incidents are most likely to transpire in areas with large black populations. Indeed, Sherman and Cohn (1986) report that most reductions in deadly force are an artifact of reductions in its use against blacks. Blacks are not only more likely than whites to have deadly force applied against them, they are also more likely reside in communities where deadly force is more prevalent – communities with large and growing minority populations, and communities characterized by high levels of economic disadvantage. In general, crime rates in these communities are higher, thus presenting more police-citizen encounters, which may potentially end in deadly force. Moreover, given the high crime rates and composition of these neighborhoods, police may anticipate more of these situations in these communities, and be quicker to rely on deadly force than they would be in another context. Blacks are also more likely to be involved in crimes and retaliation for crimes committed against them (see Kubrin and Weitzer, 2003). Further, blacks are more likely than whites to hold police officers in a negative light (Decker, 1981, Weitzer and Tuch, 2005). These negative perceptions may increase the likelihood of blacks acting hostile toward officers during personal encounters. Hostile behavior toward officers may elevate the likelihood of an encounter turning violent – and potentially, deadly. Because blacks are over-represented in both the sheer volume of deadly force incidents (Fyfe, 1986; Jacobs and

O'Brien, 1998; Lindgren, 1981; Meyer, 1980), and the geographical locations where they are most likely to occur (Liska and Yu, 1992), it seems reasonable that the predictors of deadly force – including policy – may vary by race. Even where community characteristics, such as minority group threat, increase the propensity for officers to employ deadly force, policy might limit or condition those effects.

Research suggests that blacks, much more than whites, are likely to reside in neighborhoods characterized by high levels of crime. These neighborhoods are generally adjacent to other neighborhoods that also feature high crime rates (Morenoff et al., 2001; Pattillo-McCoy, 1999; Sampson et al., 1999). These neighborhoods frequently draw the attention of law enforcement. When blacks are involved in these crimes, as they often are (Hindelang, 1978), police may ultimately need to use deadly force against them, depending on the nature of the crime and encounter with police officers. Moreover, blacks are more likely than whites to engage in retaliatory crimes, including homicide (Kubrin and Weitzer, 2003). These types of crimes draw the attention of law enforcement as well, and can potentially end with police use of deadly force. Finally, given the aggregate levels of crime in these neighborhoods, police may perceive blacks as more dangerous, and thus may be less resistant to use deadly force against them.

Other research shows that blacks are more likely to act hostile toward police officers, which may escalate otherwise non-violent encounters to potentially lethal ones. For example, Weitzer and Tuch (2005) find that attitudes toward police are shaped by race and personal experience. They suggest that in general, whites feel that police treat and whites and non-whites equally, while blacks commonly feel that police officers treat non-whites worse than whites. When blacks anticipate unjust treatment going into an

encounter, they are much more likely to act out with hostility. Moreover, Smith and Hawkins (1973) find that even when attitudes toward police are positive, officers generally anticipate negative perceptions from citizens. This sort of expectation can lead to hostility on both ends, and situations can become deadly when they otherwise may not have. In short, the nature of interactions between blacks and police officers accounts for some of the variation in the use of lethal force across race.

Racial Threat

According to Blalock's (1967) racial threat hypothesis, growing minority populations represent a threat to the dominant group, which responds by tightening social controls against minorities. The elite group associates the growth of minority groups with the accumulation of social status, resources, and power among the minority population. This accumulation comes at the expense of the dominant group, given that there is a finite set of resources. The racial threat hypothesis suggests that when this happens, communities take necessary measures to prevent this from continuing.

One avenue for the elites to tighten social controls against minority groups is through police use of deadly force. In areas where minority group threat is the greatest, police officers are more likely to employ more extreme measures, such as lethal force. Policy, however, may mediate the effect of racial threat. Although some research examines minority percentage and police use of deadly force, none explore whether policy conditions the effects of other predictors. When policies limiting discretion are present, officers may be less likely to act on the perceptions generated by minority threat. Thus, even in situations where racial threat is pronounced, restrictive deadly force policies may reduce the effect of racial threat and the volume of deadly force incidents.

Moreover, policy may moderate the effect of racial threat on police use of deadly force, such that policy effects may be stronger in cities characterized by growing minority populations, cities with black mayors, or cities where racial inequality is pronounced. These circumstances suggest the presence of racial threat.

Research on related outcomes provides limited support for Blalock's racial threat hypothesis. For example, Liska and Yu (1992) find that percent nonwhite is strongly associated with increases in police use of deadly force. Moreover, Smith and Holmes (2003) find that percent black predicts citizen complaints of police behavior irrespective of geographical location. Other research finds that percent black is positively correlated with police department size (Jackson and Carroll, 1981), particularly in the South, and following the civil disorders of the 1960s (Liska, Lawrence, and Benson, 1981).[2] These studies illustrate that where racial threat is highest, police-citizen encounters are most common.

In short, racial threat influences the use of deadly force in a number of ways, particularly by mobilizing dominant groups against weaker minority groups who appear to be gaining status, but also by emphasizing the stereotypes associated with minority group members. This type of behavior puts blacks at a greater risk for deadly force incidents. Policies limiting the conditions under which officers can use lethal force may reduce its use. Moreover, such policies might be especially influential where racial threat is more pronounced.

[2] Note that these studies use percent black as a measure of racial threat. While this is common in the literature, this represents an indirect measure of racial threat, because it does not directly address the group-level political dynamics which racial threat theory attempts to explain. Some studies also incorporate other measures, such as the presence of a black mayor, racial income inequality (Jacobs and O'Brien, 1998), and even minority civil participation (Eitle, D'Alessio, and Stolzenberg, 2002). These studies generally find, however, that these measures are no better indicators of racial threat the minority group size (see Stolzenberg, D'Alessio, and Eitle, 2004).

Disadvantage, Lethal Force, and Policy

Various scholars (e.g. Blau and Blau 1982; Krivo and Peterson, 1996) argue that blacks are overrepresented in socioeconomically disadvantaged neighborhoods. By the same token, social disorganization theory posits that communities characterized by racial heterogeneity, economic disadvantage, and residential instability lack the social organization to control crime (Shaw and McKay, 1942; Sampson and Wilson, 1995). Between the overrepresentation of blacks in these communities, and the high rates of crime present within them, blacks in these communities are more likely to be involved in criminal incidents. As such, police presence should be greater in socially disorganized communities (Braga, 2001; Cordner, 2005; Wilson and Kelling, 1982) and the propensity for blacks to encounter police officers is elevated. These encounters between officers and blacks have the potential to end with the use of lethal force.

Police legitimacy in these communities plays a part in the context of officer-citizen encounters. For example, Anderson (1999) argues that within inner-city communities, police legitimacy is limited because citizens do not believe that police officers intend to treat them fairly, or are concerned with their problems. In these communities, citizens tend to take matters into their own hands, and are seldom cooperative with police. Moreover, Kubrin and Weitzer (2003) find that retaliatory homicide is more common in disadvantaged neighborhoods because citizens in these communities are reluctant to cooperate with police officers. Police are so stigmatized in these neighborhoods that citizens fear that if they are seen cooperating with police, they will become targets of future retaliation.

This sort of dynamic sets a mutually reinforcing chain of events into action. Police are seen as illegitimate, which limits them to fewer options for policing these socially disorganized neighborhoods. When an encounter escalates to a level where lethal force is necessary, the police lose even more legitimacy in the neighborhood, which makes future encounters even more antagonistic, further elevating the likelihood of encounters ending in deadly force. Kane (2002; 2005) finds that when police legitimacy is limited, as it often may be in structurally disadvantaged neighborhoods, extreme forms of police behavior are more likely – which may include more frequent use of deadly force. In general, when citizens lack belief in the police, the likelihood that they will defer to the authority of the state is severely diminished. Tyler (1990:21-22) argues that whether citizens wish to comply with authority is paramount to police legitimacy:

> If rewards and punishments alone produced sufficient compliance for society to function effectively, the authorities would find their task simple and straightforward. They would need only to control societal resources and could focus their attention on how best to deploy them. Such a deterrence-based strategy for securing public compliance is very appealing to political and legal authorities. Social control requires very little effort to communicate with the public or be responsive to it; it focuses on the rewards and punishments associated with obeying and disobeying the law, and allows the authorities to control their own agenda. In contrast, a normative focus on compliance emphasizes the voluntary aspects of compliance, placing a considerable power over the effectiveness of authorities in the hands of those they lead. Of course, in both models people are ultimately the key to successful leadership: it is they who decide whether or not to comply.

Restrictive deadly force policies may help limit the effect of community-level disadvantage on deadly force incidents. If restrictive policies dictate that the use of lethal force is not a viable option except in the most extreme circumstances, officers may use their resources to find alternatives. Even if crime rates are higher in these communities, if the use of deadly force is not seen as an option, except when the lives of the officer or

other citizens are in danger, rates of deadly force should decline. In short, the effect of restrictive deadly force policy may be stronger in cities characterized by greater levels of structural disadvantage.

CHAPTER 3: CURRENT STUDY

The empirical research reviewed above suggests that police use of deadly force is discretionary. As such, policies restricting the use of deadly force may reduce the frequency of its occurrence by placing limits on police discretion. I draw on this research to investigate the effects of policy, racial threat, and disadvantage on police use of deadly force. I extend previous research by examining the effect of the *Tennessee v. Garner* decision at the city, rather than state-level. Moreover, I account for mechanisms other than policy, such as economic and structural characteristics, that may contribute to deadly force incidents. Restrictive policies may limit the effects of other predictors of deadly force incidents, such as racial threat and structural disadvantage. Moreover, restrictive policies may condition the effects of racial threat and structural disadvantage. I also investigate whether these effects differ between blacks and whites. Drawing on the research reviewed earlier, I posit the following hypotheses:

Hypothesis 1: Net of control variables, cities with more racial threat should have more deadly force incidents. Large and growing minority populations encourage elites to tighten social controls against minorities in order to maintain their position of power (Blalock, 1967).

Hypothesis 2: Net of control variables, cities with higher levels of economic disadvantage should have more deadly force incidents. Cities characterized by greater levels of disadvantage generally feature more crime (Krivo and Peterson, 1996; Shaw and McKay, 1942), and thus more deadly force incidents.

Hypothesis 3: Net of control variables, cities in states with restrictive deadly force policies should have fewer deadly force incidents than those with more relaxed policies.

Research suggests that policy, specifically the *Tennessee v. Garner* decision, reduces the volume of deadly force incidents (Tennenbaum, 1994).

Hypothesis 4: Restrictive deadly force policies should mediate the effect of racial threat on police use of deadly force. Restrictive policies should limit officers' ability to act on stereotypes and perceptions of threat.

Hypothesis 5: Restrictive deadly force policies should mediate the effect of structural disadvantage on police use of deadly force. This should operate through forcing police officers to develop other methods for dealing with hostile citizen encounters.

Hypothesis 6: Restrictive deadly force policies should have a stronger effect in cities where racial threat is high. Under these policies, police officers are unable to act out on stereotypes and perceptions of threat.

Hypothesis 7: Restrictive deadly force policies should have a stronger effect in cities where structural disadvantage is high. Under these policies, officers must find alternatives other than lethal force to deal with hostile citizen encounters.

Hypothesis 8: Restrictive deadly force policy should reduce deadly force for blacks more than whites. Blacks are far more often than whites the targets of lethal force (Geller and Karales, 1981; Meyer, 1980), minority-group threat increases their risk for being involved in deadly force incidents (Blalock, 1967), and blacks are more likely than whites to reside in disadvantaged, high-crime communities (Krivo and Peterson, 1996; Shaw and McKay, 1942). Policies such as the *Tennessee v. Garner* decision intend to limit police discretion. If police are biased against blacks, either implicitly or explicitly, reductions in discretion should be advantageous for blacks. In short, policies which limit

police discretion should reduce the use of lethal force across the board, but especially for blacks.

Data and Measures

This study draws on data from the Supplementary Homicide Reports (SHR) from 1980-1984 and the 1980 Census. I use data for all U.S. cities with populations greater than 100,000 as of 1980. Prior research generally uses cities of this size (see Jacobs and O'Brien, 1998). In general, these cities tend to have higher rates of violent crime, thus deadly force incidents are more likely to occur in them. The final sample consists of 171 cities. The city is a small enough unit to be conceptually meaningful, but also yields enough deadly force incidents for quantitative analysis.

The dependent variable in this study is the number of incidents in which suspects were killed by police officers using deadly force. I operationalize deadly force as the raw number of killings by police officers within each city from 1980-1984. I use raw numbers because deadly force incidents, even at the city-level, are rare events, which are likely to conform to a Poisson distribution. Constructing a rate with such low figures would result in very little variation. I collected separate values for the total population, and for white and black populations to allow for race-disaggregate analysis.[3] I used data from 1980-1984 for two reasons. First, it is necessary to have enough incidents to conduct a meaningful analysis, and five years of data allows me to do that. Second, 1984 represents a unique moment in time because it is the final year before the *Tennessee v. Garner* decision, so using this year as a cutoff most accurately shows which cities were

[3] Given the data available for this project, I was unable to explore the ethnicities of targets of deadly force incidents. This may confound the simple black-white distinction.

already consistent with the decision. That is, 1984 was the last time that deadly force policies showed substantial variation across cities.

Table 1 shows descriptive statistics for deadly force incidents. The mean count of lethal force incidents for the total population is 8.61, ranging from zero to 146 incidents. For whites, the mean count is 3.92, ranging from zero to 79 incidents. For blacks, the mean was 4.70 incidents, ranging from zero to 89 incidents. Despite the fact that the mean white population is nearly three times that of blacks, the mean number of incidents for blacks is actually greater than that for whites.

Independent Variables

In order to assess the influence of policies on lethal force incidents, I code cities as having either relaxed or restrictive deadly force policies. Using data from Fyfe and Walker (1990), I classify cities with policies consistent with the *Tennessee v. Garner* ruling as having restrictive policies, while those cities not consistent with the ruling have relaxed policies.[4] Cities with relaxed policies indicate fewer restrictions on the conditions under which officers can use deadly force. Cities with restrictive policies are coded as "1," while cities with relaxed policies are coded as "0."[5] This variable, then, serves as a proxy for discretion, where officers in cities with relaxed policies are allowed more discretion with respect to deadly force decisions. Table 1 shows that approximately 60 percent of cities in the sample had restrictive policies at the time of the *Garner* decision.

[4] Policies in this study are at the state, rather than city level. This represents an imperfect measure, as some cities may have had more restrictive policies than mandated by the state.
[5] The information for this variable is taken from Fyfe and Walker (1990).

Table 1. Descriptive Statistics for Dependent and Independent Variables

	Mean	SD	Min	Max
Dependent Variables				
Total Deadly Force Incidents	8.61	19.18	0	146
Black Deadly Force Incidents	4.70	11.29	0	89
White Deadly Force Incidents	3.92	9.05	0	79
Independent Variables				
Policy	.60	.49	0	1
Disadvantage				
Joblessness	.41	.07	.06	.61
Percentage Under Poverty Line	11.03	4.74	1.6	29.9
Percent Female-Headed Households	12.41	4.03	4	28.7
Percent Professional and Managerial Positions	14.01	.04	5.86	28.05
ICE Index	-.57	.14	-1.32	-.01
Racial Threat				
Percent Black	19.22	16.66	.10	70.80
Black Mayor	.06	.24	0	1
Racial Inequality	1.48	.23	.85	2.17
Control Variables				
Percent Young Males (!5-24)	13.01	2.34	3.52	23.62
Percent Married Males	56.67	6.27	34.10	71.50
South	.36	.48	0	1
Total Murder Arrest Rate	20.88	19.61	.97	107.48
Black Murder Arrest Rate	31.32	27.68	1.35	161.03
White Murder Arrest Rate	7.13	6.54	.46	35.85

I use three measures of racial threat: *Percent Black, Presence of a Black Mayor,* and *Racial Inequality*. The racial threat hypothesis (Blalock, 1967) posits that large minority populations pose a political threat to dominant groups. According to Blalock's hypothesis, cities with larger black populations should experience more deadly force incidents. Multiple studies use black population size as a proxy for racial threat (Bontrager, Bales, and Chiricos, 2005; Eitle, D'Alessio, and Stolzenberg, 2002; Green, Strolovitch, and Wong, 1998; Kane, 2003; Stolezenberg, D'Alessio, and Eitle, 2004).[6] *Percent Black*[7] comes from the 1980 Census, *Presence of a Black Mayor* is a dummy

[6] Eitle, D'Alessio, and Stolzenberg (2002) use the ratio of blacks to whites who voted as an alternative measure. Their thinking was that voting requires a non-trivial level of civic participation, and thus may serve as a more precise measure of political threat. They found, however, that this measure was strongly correlated with black population size (.94), and therefore the alternative measure offers only small gains in predictive power over the traditional black population size measure.

[7] I tested for curvilinearity in the percent black variable, however, the quadratic term did not reach statistical significance in any of the models. It seems that where a relationship between percent black and police use of deadly force exists, it is linear.

variable coded as "1" if the city had a black mayor as of 1980. Previous research suggests that the presence of a black mayor reduces lethal force incidents against blacks (see Jacobs and O'Brien, 1998). Black mayors generally rely on votes from blacks, thus in these cities, blacks may hold considerable political power – at least enough to put a black mayor in office. *Racial Inequality* is measured as median white income divided by median black income. This measure represents the difference in resources available to blacks and whites. When the resources available to blacks approach those available to whites, higher level of threats may be present.

Another key independent variable is disadvantage. I use four measures of disadvantage from the 1980 Census: 1) percentage of families living beneath the poverty line, 2) a measure of "joblessness" measured by the sum of the number of people unemployed and the number of people not in the labor force, divided by the population aged 16 years and older[8], 3) the percentage of female-headed households, and 4) a measure of the lack of available role models, measured by the number of people employed in professional and managerial positions, divided by the population aged 16 years and older, subtracted from one. Following Krivo and Peterson (1996), these measures were combined to create an index of disadvantage in order to avoid collinearity, using principal components factor analysis. The factor loadings are .92, .80, .85 and .78 respectively (eigenvalue = 2.82).

[8] Numerous studies use the joblessness measure over unemployment (Krivo and Peterson, 1996; 2004; McNulty, 2001; Peterson et al., 2000), because it also accounts for discouraged workers (also see Wilson, 1987; 1996).

Control Variables

I use a series of control variables to better understand the processes through which policy and minority population size predict deadly force: *Percent of Males Aged 15-24, Percent of Married Males, South, and Murder Arrest Rate.* Previous research shows that young males are responsible for a disproportionate amount of crime, thus I include the *Percent of Males Aged 15-24*. *Percent Married Males* taps into levels of social control. Research suggests that married males are less likely to engage in crime and delinquency than their unmarried counterparts for a variety of reasons (Sampson and Laub, 1993; Warr, 1998). I include the variable for Southern location to control for the possibility of a Southern Culture of Violence, where officers in the South may be less reluctant to turn to lethal force than those in other locations. Finally, *Murder Arrest Rate*[9], which is measured as the number of arrests[10] per 100,000, captures overall levels of crime and violence. This is a race-specific measure of the murder arrest rate, such that I use the total murder arrest rate for the models involving the full sample, the white murder arrest rate for models involving the whites-only sample, and the black murder arrest rate for the models involving the blacks-only sample.[11] Officers in cities characterized by high murder arrest rates are likely to use lethal force more frequently. *Percent of Males Aged 15-24, Percent Married Male, and South* come from the 1980 Census, while *Murder Arrest Rate* comes from the Uniform Crime Reporting Program Data from 1980-1984.

[9] Murder arrest rate is chosen over violent or property crime rates because murder is frequently regarded as the most serious of crimes, and the clearance rate tends to be higher than that for other crimes.
[10] There are, however, disadvantages associated with using arrest rates to measure murder. For example, although clearances for murder tend to be higher than those for other crimes, in 1980, the clearance rate was only around 70%, and those rates vary by city. Using arrests is not a perfect measure of the prevalence of murder, however, it generally illustrates the relative degree of violence across cities.
[11] Murder arrest rate, irrespective of race, is the three-year average from 1980-1982. Other combinations were used, but the results were practically identical no matter which combination appeared in the models.

Analytic Strategy

Deadly force incidents represent discrete events and as such, ordinary least squares (OLS) estimation is inappropriate for analysis, because OLS regression assumes that the dependent variable is continuous. Moreover, count variables generally feature non-symmetric distributions, which violate the OLS assumption that error terms approximately follow a normal distribution. For these reasons, I employ negative binomial regression to test Hypotheses 1-7. Negative binomial regression is chosen over a Poisson model because the latter requires the mean and variance of the number of occurrence to be equal (Kennedy, 2003). Negative binomial allows for overdispersion, while maintaining the same general structure as Poisson models. The overdispersion parameter is significant in all models, therefore I report negative binomial results. Each hypothesis is tested three times: once for the full sample, once for the black-only sample, and once for the white-only sample. Moreover, each model includes the log of the at-risk (race-specific) population as an exposure variable with a fixed coefficient of one. This treats the model as a per capita rate, rather than a count (Osgood, 2000).

Hypothesis 8 is tested using Paternoster et. al's (1998) statistical test for the equality of regression coefficients.[12] The authors suggest that their formula is superior to others because it removes negative bias from the estimated standard error of the difference in coefficients. I use this formula to compare the coefficients for racial threat, economic disadvantage and deadly force policy variables between blacks and whites.

[12] The formula for Paternoster et. al (1998)'s test for equality of regression coefficients is

$$Z = \frac{b_1 - b_2}{\sqrt{SEb_1^2 + SEb_2^2}}$$

CHAPTER 4: RESULTS

Table 2 shows bivariate correlations between the dependent and independent variables. In general, the correlations between the explanatory and dependent variables[13] are stronger than the ones between the various explanatory variables, suggesting that collinearity should not be an issue in this analysis.[14]

I report results from the multivariate analyses in Tables 3-5. Hypothesis 1 states that cities where racial threat is more pronounced should have a greater number of deadly force incidents. Results from the full sample (Table 3, Model 1) fail to support this hypothesis. None of the measures of racial threat (percent black, black mayor and racial inequality) have a significant influence on police use of deadly force. The percentage of young males, southern location, and city-level murder arrest rate, however, are all statistically significant. Counter to expectations, however, the relationship between percentage of young males and deadly force is negative, meaning that where the proportion of young males is larger, there are fewer deadly force incidents. Specifically, results indicate that for a one percent increase in young males, the expected count of deadly force incidents decreases by about seven percent. As expected, southern location and murder arrest rate are both associated with police use of deadly force. Cities located in the south correspond with a 54 percent increase in the expected count of incidents, while unit increases in the murder arrest rate correspond with about a two percent increase in the expected count.

[13] For the purpose of presenting bivariate correlations, deadly force is calculated as the rate of deadly force incidents per 100,000. In the negative binomial regression, however, simple counts of deadly force are used.

[14] To further test for multicollinearity, variance inflation factor (VIF) scores were calculated. None of these scores approached 4.00, supporting the notion that multicollinearity does not seem to be a problem.

Table 4, Model 1 shows results for the blacks-only sample. In this model percent black is statistically significant, however, counter to expectations, the effect of percent

Table 2. Bivariate Correlations.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Total Deadly Force Rate	1.00														
2. Black Deadly Force Rate	**.22**	1.00													
3. White Deadly Force Rate	**.79**	.10	1.00												
4. Restrictive Deadly Force Policy	**-.23**	.04	-.12	1.00											
5. Percent Young Males	**-.20**	-.08	**-.19**	**.18**	1.00										
6. Percent Married Males	-.12	.04	-.02	.05	**-.30**	1.00									
7. South	**.25**	-.01	.07	**-.19**	.01	**.22**	1.00								
8. Total Murder Arrest Rate	**.49**	.02	**.44**	.06	-.13	**-.20**	.08	1.00							
9. Black Murder Arrest Rate	**.42**	**.40**	**.34**	.13	-.11	-.02	-.10	**.65**	1.00						
10. White Murder Arrest Rate	**.33**	.04	**.50**	.12	**-.23**	-.06	.01	**.81**	.63	1.00					
11. Disadvantage Index	**.30**	-.11	.14	**-.27**	-.04	**-.48**	.02	**.38**	.05	**.23**	1.00				
12. ICE Index	**-.16**	.14	-.09	**.25**	.01	**.26**	-.14	**-.17**	-.06	-.08	**-.60**	1.00			
13. Percent Black	**.40**	-.06	.11	**-.24**	-.03	**-.38**	**.37**	**.48**	.04	**.16**	**.71**	**-.39**	1.00		
14. Black Mayor	**.29**	-.01	**.18**	-.01	-.02	**-.30**	.02	**.33**	.13	**.22**	**.33**	-.12	**.43**	1.00	
15. Racial Inequality	**.23**	.05	.12	-.04	.01	.08	**.42**	.09	.09	.02	.04	-.13	**.28**	-.05	1.00

Bolded correlations are statistically significant at the .05 level.
For this correlation matrix, deadly force incidents are constructed as rates. They are treated as counts in the multivariate analysis.

Table 3. Negative Binomial Regression of Deadly Force Incidents from 1980-1984 on Deadly Force Policy, Racial Threat, and Economic Disadvantage.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Percent Black	.003			-.002		-.003		-.005
	(.006)			(.006)		(.007)		(.007)
Black Mayor	.168			.304		.299		.301
	(.293)			(.288)		(.289)		(.288)
Racial Inequality	.643			.742*		.738*		.781*
	(.348)			(.344)		(.344)		(.350)
Percent Black x Restrictive Policy						.002		
						(.008)		
Disadvantage Index		.101			.046		-.004	.067
		(.081)			.082)		(.102)	(.108)
Disadvantage Index x Restrictive Policy							.105	
							(.133)	
Restrictive Deadly Force Policy			-.369**	-.400**	-.349*	-.437	-.372**	-.385**
			(.134)	(.137)	(.139)	(.227)	(.142)	(.139)
Percent Young Males	-.068*	-.065*	-.054	-.053	-.052	-.052	-.049	-.051
	(.029)	(.029)	(.029)	(.029)	(.029)	(.029)	(.030)	(.029)
Percent Married Males	-.020	-.016	-.022	-.021	-.018	-.021	-.017	-.019
	(.014)	(.014)	(.011)	(.014)	(.013)	(.014)	(.013)	(.014)
South	.433**	.583***	.522***	.385*	.516***	.383*	.492***	.411*
	(.164)	(.136)	(.135)	(.160)	(.136)	(.160)	(.139)	(.166)
Murder Arrest Rate	.015***	.015***	.018***	.017***	.017***	.017***	.017***	.017***
	(.004)	(.003)	(.003)	(.004)	(.003)	(.004)	(.003)	(.004)
Dispersion	.409***	.418***	.395***	.377***	.393***	.376***	.389***	.376***
	(.083)	(.084)	(.080)	(.077)	(.080)	(.077)	(.080)	(.077)
Intercept	-10.414	-9.745	-9.353	-10.422	-9.591	-10.405	-9.648	-10.556
	(1.044)	(.957)	(.847)	(1.020)	(.945)	(1.021)	(.941)	(1.041)
Log-Likelihood	-418.658	-410.998	-408.009	-405.170	-407.853	-405.148	-407.548	-404.975

* p<.05 ** p<.01 *** p<.001

Table 4. Negative Binomial Regression of Black Deadly Force Incidents from 1980-1984 on Deadly Force Policy, Racial Threat, and Economic Disadvantage.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Percent Black	-.014*			-.016**		-.021**		-.015*
	(.006)			(.006)		(.007)		(.008)
Black Mayor	.155			.258		.224		.263
	(.283)			(.279)		(.273)		(.280)
Racial Inequality	-.102			.031		.041		.015
	(.418)			(.417)		(.411)		(.426)
Percent Black x Restrictive Policy						.009		
						(.009)		
Disadvantage Index		-.141			-.173		-.184	-.024
		(.087)			(.088)		(.112)	(.121)
Disadvantage Index x Restrictive Policy							.027	
							(.159)	
Restrictive Deadly Force Policy			-.306*	-.339*	-.352*	-.617*	-.366*	-.343*
			(.155)	(.149)	(.154)	(.299)	(.176)	(.152)
Percent Young Males	-.056	-.055	-.040	-.045	-.044	-.041	-.043	-.045
	(.031)	(.032)	(.032)	(.031)	(.032)	(.031)	(.033)	(.031)
Percent Married Males	-.021	-.017	-.004	-.022	-.020	-.023	-.020	-.023
	(.016)	(.016)	(.014)	(.016)	(.016)	(.016)	(.016)	(.016)
South	.713***	.503**	.470**	.658***	.462**	.660***	.457***	.645**
	(.189)	(.167)	(.167)	(.187)	(.165)	(.183)	(.168)	(.198)
Murder Arrest Rate	.014***	.014***	.015***	.015***	.015***	.016***	.015***	.015***
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
Dispersion	.291***	.332***	.313***	.271***	.311***	.251***	.308***	.273***
	(.088)	(.094)	(.091)	(.081)	(.088)	(.080)	(.089)	(.082)
Intercept	-8.261	-8.900	-9.689	-8.328	-8.691	-8.212	-8.715	-8.286
	(1.141)	(1.091)	(.966)	(1.128)	(1.086)	(1.110)	(1.092)	(1.148)
Log-Likelihood	-286.579	-288.654	-288.004	-284.006	-286.080	-283.452	-286.066	-283.985

- p<.05 ** p<.01 *** p<.001

Table 5. Negative Binomial Regression of White Deadly Force Incidents from 1980-1984 on Deadly Force Policy, Racial Threat, and Economic Disadvantage.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Percent Black	-.004			.007		-.008		-.004
	(.006)			(.006)		(.008)		(.008)
Black Mayor	.268			.382		.364		.378
	(.335)			(.334)		(.339)		(.334)
Racial Inequality	.411			.479		.473		.461
	(.386)			(.388)		(.388)		(.390)
Percent Black x Restrictive Policy						.003		
						(.009)		
Disadvantage Index		-.013			-.063		-.173	-.051
		(.092)			(.093)		(.124)	(.130)
Disadvantage Index x Restrictive Policy							.200	
							(.152)	
Restrictive Deadly Force Policy			-.316*	-.363*	-.341*	-.419	-.385*	-.375*
			(.153)	(.158)	(.157)	(.253)	(.160)	(.160)
Percent Young Males	-.054	-.053	-.037	-.039	-.040	-.038	-.032	-.039
	(.033)	(.033)	(.033)	(.034)	(.033)	(.034)	(.033)	(.034)
Percent Married Males	-.011	-.011	-.007	-.012	-.013	-.012	-.012	-.013
	(.016)	(.015)	(.013)	(.016)	(.015)	(.015)	(.015)	(.016)
South	.268	.305*	.231	.215	.245	.215	.215	.196
	(.182)	(.153)	(.152)	(.181)	(.153)	(.181)	(.153)	(.187)
Murder Arrest Rate	.059***	.060***	.064***	.065***	.066***	.065***	.067***	.066***
	(.010)	(.010)	(.010)	(.011)	(.011)	(.011)	(.011)	(.011)
Dispersion	.383***	.378***	.367***	.371***	.363***	.369***	.347***	.368***
	(.096)	(.097)	(.256)	(.093)	(.093)	(.093)	(.091)	(.092)
Intercept	-11.041	-10.556	-10.769	-11.069	-10.418	-11.037	-10.512	-11.001
	(1.195)	(1.063)	(.911)	(1.185)	(1.050)	(1.187)	(1.037)	(1.195)
Log-Likelihood	-316.222	-317.017	-314.888	-313.545	-314.663	-313.506	-313.804	-313.468

* p<.05 ** p<.01 *** p<.001

black is negative, suggesting that there are fewer deadly force incidents where black populations are larger. The effect, however, is relatively small. For each percent increase in percent black, the expected count of deadly force incidents decreases by just one percent. Other racial threat parameters are not statistically significant. In this model, percentage of young males is not statistically significant, however, southern location and murder arrest rate among blacks are, and in the expected direction. Southern location corresponds with double the expected number of lethal force incidents compared to cities in other regions, and unit increases in the murder arrest rate correspond with a one percent increase in the expected number of incidents. Table 5 (Model 1) shows results for whites. As in the full model, in this model, racial threat variables do not significantly affect police use of lethal force. In fact, only the murder arrest rate significantly increases police use of deadly force against whites. For each increase in murder arrest rate, the expected number of lethal force incidents increases by six percent. These models do not support the hypothesis that racial threat increases police use of deadly force.

Hypothesis 2 states that cities with higher levels of structural disadvantage should have more deadly force incidents. Table 3, Model 2 shows results for the full sample. The results fail to support Hypothesis 2. Structural disadvantage does not significantly increase the likelihood of deadly force incidents.[15] As with Model 1, percentage of young males, southern location, and murder arrest rate are the only statistically significant variables. In this model, a percent increase in young males corresponds with about a six percent decrease in the expected number lethal force incidents, the expected

[15] While this is the case when the murder arrest rate control is included in the model, when it is omitted, the effect of disadvantage is significant and positive, suggesting that economic disadvantage is predictive of deadly force, but through overall levels of violence.

number of incidents in the south is about 79 percent higher than in other regions, and for each unit increase in murder arrest rate, the expected count of incidents increases by roughly two percent. Tables 4 and 5 (Model 2) show that Hypothesis 2 is not supported for blacks or whites in the race-disaggregated models. The disadvantage index is not statistically significant in either model. Only southern location and murder arrest rate are significant in these models. For blacks, southern location corresponds with a 65 percent increase in the expected number of incidents, while percent increases in murder arrest rate correspond with a two percent increase in the expected number of incidents. For whites, southern location corresponds with a 36 percent increases in the expected number of incidents and percent increases in the murder arrest rate correspond with a six percent increase in the expected number of deadly force incidents.

Hypothesis 3 predicts that cities in states with restrictive deadly force policies should have fewer deadly force incidents than cities in states with more relaxed policies. Table 3 (Model 3) shows support for this hypothesis in the full sample. The negative sign and relatively large effect size suggest that cities in states with restrictive policies have fewer deadly force incidents than those in states with relaxed policies. Cities in states with restrictive policies see a decrease of about 31 percent in the expected number of deadly force incidents. As in previous models, southern location and murder arrest rate are also significant. The race-specific models (Tables 4 and 5, Model 3) support Hypothesis 3. Restrictive deadly force policy has a significant and negative effect on deadly force incidents. For blacks, restrictive policies correspond with a 26 percent decrease in the expected number of incidents, while for whites, restrictive policies correspond with a 27 percent decrease.

Hypotheses 4 and 5 predict that the effect of restrictive deadly force policies should mediate the effects of racial threat and economic disadvantage. These predictions are predicated on relationships between racial threat and disadvantage which did not emerge. That is, racial threat and economic disadvantage variables were not statistically significant predictors of deadly force in previous models. For that reason, Hypotheses 4 and 5 are rejected, because there is no effect to mediate. I still present these models, however, because it is useful to examine models including both policy and structural variables.

Hypothesis 4 posits that restrictive deadly force policy should mediate the effect of racial threat on police use of deadly force. Restrictive policy is statistically significant, corresponding with a 33 percent decline in the expected number of deadly force incidents, however, it does not mediate the effect of racial threat, because none of the racial threat variables were significant in the previous model. Therefore, Hypothesis 4 is not supported. For blacks, the hypothesis is not supported either. Finally, Hypothesis 4 is not supported for whites (Table 5, Model 4). In short, these models do not support the hypothesis that deadly force policy mediates the effect of racial threat on police use of deadly force.

Hypothesis 5 argues that restrictive deadly force polices should mediate the effect of structural disadvantage on police use of deadly force. Hypothesis 5 is not supported in this model (Table 3, Model 5). Policy is statistically significant, accounting for a 30 percent decrease in the expected number of incidents, but the effect of disadvantage is not mediated because it was not significant in the previous model. Hypothesis 5 does not receive support for blacks (Table 4, Model 5). Policy is significant and negative,

meaning that there are fewer deadly force incidents in cities with restrictive policies. For blacks, cities in states with restrictive policies see a 30 percent decrease in the expected number of lethal force incidents. Hypothesis 5 is not supported for whites (Table 5, Model 5). Results indicate that restrictive policies reduce deadly force incidents, reducing the expected number of incidents by about 29 percent, however, the disadvantage index is not significant in this model. The hypothesis that restrictive deadly force policy mediates the effect of structural disadvantage on police use of lethal force does not receive support.

Hypothesis 6 posits that restrictive deadly force policy should have a stronger effect on deadly force incidents in cities where racial threat is higher. The results for the full sample do not support this hypothesis (Table 3, Model 6). The interaction term between percent black and restrictive policy is not statistically significant, suggesting that restrictive policy is not necessarily more effective where racial threat is high. The results for the race disaggregated models (Table 4, Model 6 and Table 5, Model 6) mirror the results for the full sample. The interaction term is not statistically significant for either blacks or whites.

Hypothesis 7 suggests that the effect of stringent deadly force policy should have a strong effect on lethal force incidents in cities characterized by greater levels of structural disadvantage. As with Hypothesis 6, Hypothesis 7 fails to receive support in the full sample or race disaggregated models (Table 3, Model 7; Table 4, Model 7; and Table 5, Model 7). The interaction term between the disadvantage index and restrictive policy is not statistically significant in any of these models.

Finally, Hypothesis 8 predicts that deadly force policy reduces deadly force incidents more among blacks than whites. Results from Paternoster et al. (1998)'s test for the equality of regression coefficients suggests that the effect of policy on deadly force incidents is similar for blacks and whites ($z=1.40$). In fact, the raw effect size for whites is slightly greater than that for blacks, suggesting that, if anything, the effect of policy on deadly force might be stronger for whites (see Table 4, Model 8 and Table 5, Model 8). In short, Hypothesis 8 is not supported.

CHAPTER 5: DISCUSSION

This study set out to examine how policies that limit discretion affect police behavior. Specifically, it explores whether cities in states with stringent deadly force policies experience fewer lethal force incidents than cities in states with more relaxed policies, and whether those policies have a stronger effect on incidents involving blacks than whites. Consistent with expectations, deadly force policy reduces incidents both for the total population and race-disaggregated samples. However, counter to expectations, variables hypothesized to influence how and whether policy affects deadly force usage do not directly impact police use of lethal force. That is, city-level racial threat and structural disadvantage do not seem to influence police use of deadly force. Restrictive policies do not mediate the effects of these variables, either. Additionally, whether cities are characterized by large minority populations or high levels of structural disadvantage does not seem to alter the way policy affects police use of deadly force. Finally, results suggest that the effect of policy on deadly force is not stronger for blacks than whites.

At the outset, I predicted that the factors associated with crime, such as economic disadvantage and racial threat, would also associate with police use of deadly force because where there is more crime, there should be more deadly force incidents. The results indicate, however, that these structural measures do not predict deadly force incidents. This may be due to the inclusion of the murder arrest rate control, because when this control is excluded, racial composition and disadvantage affect police use of deadly force (models not shown). In these models, the effects of both racial threat and economic disadvantage are positive, suggesting that these structural variables can

influence police use of deadly force. This finding offers at least partial support for Blalock's (1967) racial threat hypothesis. Direct indicators of violence, such as the murder arrest rate seem to mediate the effects of structural variables, such as racial composition and economic disadvantage. These variables matter when it comes to police use of deadly force; however, they operate through their effect on crime. Rather than focusing on these structural variables, it may prove more useful to investigate other predictors of police officer behavior, such as police organizational characteristics and police legitimacy. These factors are more likely to influence individual officer behavior and, at least in the case of departmental characteristics, they are easier to change through policy.

Some other findings from this study are noteworthy, and suggest at least some overlap in the predictors of crime and police use of lethal force. Southern location is a fairly robust predictor of deadly force, except when isolating lethal force incidents against whites. This may be an artifact of historical racism in the south, some of which may persist to this day. Moreover, some research finds that attitudes toward violence in the south are more positive (Gastil, 1971; Hackney, 1969; Reed, 1972), possibly accounting for a greater number of deadly force incidents. Police culture may be different in the south than other regions, where officers there resort to force more quickly. These results warrant investigation of the differences in police behavior across regions.

The results do not indicate conditional effects for any of the populations. That is, restrictive policies do not seem any more effective in cities that are high in racial threat and structural disadvantage, or even those with high murder arrest rates. It could be that the effect of policy is consistent across the board, reducing deadly force irrespective of

these community characteristics, and cities with elevated disadvantage and racial threat are no more likely to benefit from these policies than are other cities.

The results do not support Blalock's (1967) classicracial threat argument. None of the models showed a significant effect for black mayor or racial inequality on police use of deadly force. Hence, formal social control against blacks does not appear to be increasing in cities where black political power is rising or where inequality is narrowing. The racial threat hypothesis also predicts more deadly force incidents where black populations are larger. Results for the full model and the white model do not show this. Moreover, results for the black model indicate that, greater concentrations of blacks corresponded with slightly fewer deadly force incidents. This could be interpreted as support for a curvilinear effect, where when minority populations reach a certain critical mass, social controls, which were tightened, are then relaxed (largely because whites begin to retreat from these communities). Yet, further tests with quadratic racial composition terms were not significant, failing to provide evidence of curvilinearity, as hypothesized by traditional racial threat theorists (e.g. Blalock, 1967). Moreover, results were not consistent with the assumption that large minority populations should increase lethal force incidents by threatening elites and causing them to tighten social controls against minorities. While minority population can influence other types of behavior, such as hate crimes and neighborhood out-migration, lethal force incidents may have more to do with characteristics of police organization, rather than structural factors such as racial composition.

The present analysis also challenges the hypothesis that policy reduces deadly force incidents against blacks more than whites. The hypothesis is driven by the

argument that, in addition to the structural factors that might put blacks at greater risk of lethal force, officer bias may also increase this risk for blacks more so than whites. The results suggest that officers might not rely on biases when employing lethal force. These situations happen so quickly, officers might not even take suspect race into account. Conversely, biases might exist, and even state-mandated policies are not enough to curb them. Recall from the discussion of domestic violence arrest policies that even when a certain action is mandated by the state, that action may not take place. In this case, just because state law restricts the use of lethal force, officers may use it anyway in certain situations. Either way, it seems that restrictive policies do not benefit blacks any more than whites.

While this study examines racial threat among blacks, it does not account for Hispanics. Whether the dynamics associated with Hispanic group threat operate similarly to black group threat remains unclear. It is plausible that many of the white suspects in this analysis were actually Hispanics, although there is no way of knowing for sure, because the Supplementary Homicide Reports do not differentiate between Hispanics and whites. Therefore, cities with large numbers of deadly force incidents against whites may actually represent large numbers of deadly force incidents against Hispanics. Future research within this area should examine Hispanic racial threat, and whether political threat works in the same way with Hispanics as it does with blacks, and whether it is Hispanics or whites who are actually the targets of deadly force, particularly in areas with large Hispanic populations. There is reason to believe that Hispanic racial threat does operate, as Kane (2003) finds that once Hispanic population reaches a critical mass, police deployment increases dramatically. Greater police deployment means a greater

chance of contact between police officers are suspects and thus greater odds of deadly force incidents.

It is important to note that causal claims cannot be drawn from this study. While a clear association between restrictive policies and deadly force incidents seems to exist, I would hesitate to suggest that these policies *cause* reductions in deadly force incidents. In many cases, these policies may be reactions to high levels of lethal force incidents, or a single, high-profile media event. To imply causal connections, research would need to follow a longitudinal design, rather than the cross-sectional strategy used here. The results from this study, however, suggest that there may be some connection between policy and police behavior, and provide an avenue for future research to uncover the casual relationship and the specific casual mechanism for any relationship.

The data used in this study are not without limitations. It is paramount to take caution when examining data on deadly force incidents. With respect to record keeping, Sherman and Langworthy (1979) find substantial underreporting of police homicides. On average, police agencies record only about half of all incidents of deadly force, meaning that the rate of homicides by police is about twice what official records indicate. They add that in specific cities official records and alternative data sources tell a vastly different story. Researchers should interpret these findings with caution, as Sherman and Langworthy conducted this research during a time where the Supplementary Homicide Reports were a new feature to the Uniform Crime Reports. Moreover, even accurate reporting of police fatalities would not tell the whole story about *decisions* to use lethal force. It seems unlikely that every attempt to use lethal force is met with success.

Instead, it is more likely that a large number of decisions to use deadly force result in non-fatal injuries, or missed shots (Fyfe, 1988).

According to official records and alternative sources, the data tends to converge when it comes to showing patterns of variation across cities (Sherman and Langworthy, 1979). If these findings hold, the missing data (both unreported fatalities and incomplete information such as missed shots and non-fatal wounds) could have a profound impact on the results of any study having to do with lethal force. This is an issue of measurement error. It may be in the best interest of police departments to underreport these statistics in order to make their departments appear able to apprehend criminals without resorting to extreme measures such as deadly force.

The current analysis also lacks a valid measure of police legitimacy. Recall that Kane (2003) finds that where police legitimacy is limited, misconduct, such as excessive and even lethal force, is more common. When police do not have legitimacy with the populations that they patrol, it is more likely that they will have to resort to extreme measures to solve problems. A more complete analysis would control for this type of dynamic, however no such variable was available for the present study.

The measure of policy in this study may also be problematic. The decision to assume that cities follow state-mandated rules to the same degree may be disputable. That is, some departments may exceed state-level mandates with the stringency of their policies. This scenario, underestimates the effect of policy on lethal force.

Despite the limitations, these results suggest some promise for future research on police discretion and police use of deadly force. It seems prudent to continue to explore the effects of the *Tennessee v. Garner* decision. A time-series analysis may better

illustrate the effects of *Tennessee v. Garner* over time. It might also prove fruitful to investigate other policy changes since 1985 (such as the 1989 *Graham v. Connor* decision). Future researchers might also explore how policies limiting police discretion affect other behaviors, such as non-lethal forms of police brutality, and whether policy effects mediate other contextual factors, such as racial threat and structural disadvantage. More research is needed within the area of police use of deadly force as well. Future researchers might be wise to examine more police organization parameters, such as department size and demographics. Officers from larger departments may be more likely to employ deadly force in the line of duty, or racial composition of departments may predict lethal force. Finally, future researchers might be interested in micro-level determinants of lethal force applications. Specifically, officer-suspect interactions on race, gender, or age might predict deadly force usage.

In conclusion, this study illustrates the importance of considering discretion when examining police behavior. While many studies attempt to uncover the predictors of various police behaviors, including the use of deadly force, they tend to omit discussions of policies that may limit officer discretion. While more research is needed with respect to both officer discretion and police use of deadly force, initial findings indicate that recognizing the impact of discretion is vital for understanding the behaviors of police officers. If we are to change officer behavior, policy is a good place to start, as policy can be changed more easily than structural determinants.

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