

Racial threat and punitive police attitudes

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Abstract

Racial Threat Theory posits that punitive attitudes are produced when Whites are alarmed by large or growing Black populations. While research has identified a relationship between Black composition and support from community members for more punitive criminal justice policy, no research has examined whether racial composition influences punitive attitudes among criminal justice personnel—even though they represent a key population that can engage in discrimination. This study advances our understanding of racial threat and police force by examining the relationship between Black population and punitive use-of-force attitudes on the part of police. Using survey and census data for approximately 10,000 police officers in 97 agencies, multilevel analyses reveal that officers report more punitive attitudes in jurisdictions with larger Black populations and that this relationship is concentrated among White police officers. The results provide evidence that racial disparities in police outcomes are at least partly driven by motivational criteria (such as discrimination).

Introduction

Nationwide protests following the police-custody killing of George Floyd and other controversial uses of police force have brought attention to the well-documented racial disparities in policing. Research has found disproportionate representation of racial and ethnic minorities as subjects of various police activities such as arrests or tickets (e.g., Mitchell & Caudy, 2017; Patten et al., 2019), searches (e.g., Baumgartner et al., 2014, 2018; Goff et al., 2016), and pedestrian or vehicle stops (e.g., Baumgartner et al., 2018; Ross et al., 2017). Research also documents disproportionate representation of racial and ethnic minorities among the people against whom force is used (e.g., Goff et al., 2016; Kramer & Remster, 2018; Lautenschlager & Omori, 2018; Morrow et al., 2017).

While differential criminal behavior and subject resistance across racial groups are two possible contributors to racial and ethnic disparities in the use of force (Hipp, 2011; Loeber et al.,

2015; Mears et al., 2016; Paoline et al., 2018; Rossler & Terrill, 2017; Shane et al., 2017), another potential contributing factor is discrimination (Correll et al., 2014; Morrow et al., 2017). Racial threat theory (RTT) is a macro-level theory that claims that White people may be alarmed by large or growing racial/ethnic minority groups, particularly Blacks, who threaten their hegemonic power. This may lead to discrimination, including support for various forms of formal social control, which could take the form of arrests, convictions, sentences to incarceration, and so forth.

Research has established a link between larger Black populations and actual social control outcomes (e.g., the number of police per capita, arrests, searches, or use of force). Other research has identified a relationship between the size of the Black population and support from community members for more punitive criminal justice policy. However, no research to date has examined whether racial composition influences punitive attitudes among criminal justice personnel *specifically*—even though they represent a key population that can engage in such discrimination. Similarly, no research has examined the attitudinal nexus between Black population size and punitive use-of-force attitudes on the part of police.

Using survey and census data for approximately 10,000 police officers in 97 agencies, this study advances our understanding of racial threat and police use of force by examining punitive attitudes on the part of police as they pertain to use of force against community members (of all races) and by measuring how those attitudes covary with the racial composition of the jurisdictions in which police work. We advance racial threat theory by examining the punitive attitudes of the actual agents of formal social control and we advance use of force research by examining whether police punitive attitudes might explain racial disparities in the use of force. More punitive attitudes among police officers in areas with larger Black populations

would suggest that use-of-force disparities are, at least partly, driven by motivational criteria (such as discrimination) rather than purely race-neutral or colorblind criteria (such as criminal involvement, violence, or demeanor).

Disparity and police use of force

The academic research documenting and attempting to explain racial disparities in the use of force can be traced back to some of the earliest studies on police force. In fact, the first published study on police use of force by Robin (1963) highlighted that, in Philadelphia, Blacks were overrepresented as subjects of police deadly force relative to the composition of city residents. A number of studies have similarly documented racial disparities in the use of force (Buehler, 2017; Duran & Loza, 2017; Edwards et al., 2018; Fridell & Lim, 2016); for a review, see Hollis & Jennings, 2017).

This line of research does not always clarify *why* Blacks experience disproportionate police force, but there are several potential explanations. Some scholars have attributed the disparity to differential criminal behavior and subject resistance, and indeed the differential behavior hypothesis has been supported with research indicating that Blacks are more frequently subject to police arrest that can lead to force because they are disproportionately represented among people who commit street crime (Hipp, 2011; Loeber et al., 2015; Mears et al., 2016; Sampson et al., 2005). Further, subject resistance within arrest encounters is a legally relevant predictor of whether (and at what level) force is used, and some research indicates that the racial disparities in use of force are greatly reduced or even disappear when subject resistance is controlled for (Johnson, 2011; Lee et al., 2010; Lee et al., 2014; Paoline et al., 2018; Rossler & Terrill, 2017; Rydberg & Terrill, 2010; Shane et al., 2017).

A second explanation, supported by both field and lab studies, is that prejudicial attitudes lead to discriminatory use of force. For some of these studies—the “micro” studies—the individual officer/incident is the unit of analysis (versus the geographic area, as discussed below). For instance, scholars conducting field research with incident/subject as the unit of analysis have concluded that differential behavior cannot fully explain disparities, and that discrimination plays a role (Nix et al., 2017; Johnson et al., 2019; Ross, 2015). In the context of studying implicit racial bias, micro-level lab studies have similarly determined that bias and discrimination play a role in producing disparities in use of force (for a review, see Correll et al., & Ma, 2014; for a meta-analysis, see Mekawi & Bresin, 2015).

The macro-level research reflects the understanding that attitudes (e.g., prejudicial attitudes) and behaviors (e.g., discriminatory behavior) are largely a function of social context (Barber, 2004; Bond, 1988; Terry & Hogg, 2000). This body of research has examined the impact of the size of Black population on the volume of police activities, even after controlling for crime. Studies using beat, neighborhood, or city as the unit of analysis support the proposition that racial discrimination plays a role in differential enforcement on the part of police—finding that a large or growing Black population produces a greater volume of police searches and arrests, even when appropriate variables are controlled (e.g., Levchak, 2017; Liska et al., 1985; Liska & Chamlin, 1984; Novak & Chamlin, 2012).

Racial Threat Theory

Blalock’s (1967) racial threat theory (RTT) provides an explanation for these macro-level findings. According to this theory, as the Black population becomes more threatening to Caucasians, the latter group seeks to reduce the threat through discrimination, including through

various forms of formal social control. The exercise of formal social control could include increases in police force size or expenditures, arrests, convictions, sentences, and so forth.

There has been considerable research testing RTT. Most studies have operationalized threat in terms of large or growing minority populations, such as percentage of the population that is Black (Feldmeyer & Cochran, 2018), and these studies have documented an association between threat and various forms of formal social control, including police force size (Kent & Jacobs, 2005; Stults & Baumer, 2007), police expenditures (Kent & Jacobs, 2004), frisks (Ferrandino, 2015; Levchak, 2017), traffic stops (Petrocelli et al., 2003), searches (Petrocelli et al., 2003), sentencing (Johnson et al., 2008), imprisonment (Greenberg & West, 2001; Jacobs & Carmichael, 2001; Ulmer & Johnson, 2004), and imposition of the death penalty (Baumer et al., 2003; Jacobs & Carmichael, 2002).¹ As discussed further below, researchers have documented a positive relationship between the size or growth of the Black population (Holmes, 2000; Smith & Holmes, 2014) or the “minority population” defined more broadly (Feldman et al., 2019; Lersch et al., 2008; Liska & Yu, 1991; Zimmerman et al., 2021) and the *volume* of police use of force (or complaints of force; but see Klinger et al., 2015, and Lee, 2016).

The foregoing research focuses on outcomes involving the *actual imposition* of formal social control through, for instance, searches, convictions, and imposition of the death penalty. However, some RTT research has examined *support* for punitive criminal justice actions. These

¹But see also Feldmeyer & Ulmer, 2011; Holmes, Painter, & Smith, 2018; Leiber, Peck, & Rodriguez, 2016; Thomas, Moak, & Walker, 2013.

survey-based studies² might include questions for measuring both perceived threat and punitive attitudes to test RTT. Alternatively, a study might link answers to questions regarding support for punitive sanctions to the population makeup of the respondent's location. (That is, these studies use population makeup as the measure of threat.) Researchers have measured punitive attitudes by assessing support for the death penalty (Baumer et al., 2003), race targeting (Taylor, 1998), severe punishment (Hetey & Eberhardt, 2014; Ousey & Unnever, 2012), controls targeting illegal immigrants (Stupi et al., 2016), and other forms of formal social control.

Generally, this line of research indicates that a large or growing threat on the part of minority groups is linked to support for punitive policies (e.g., Baumer et al., 2003; King & Wheelcock, 2007; Ousey & Unnever, 2012). This includes support for RTT from the only published study to date measuring punitive attitudes as support for police coercive powers. Using a general population phone survey, Pickett (2016) determined that respondents' perceptions of Latino economic threat is linked to support for aggressive policing to include "granting police greater latitude in stopping, searching and using force against suspects" (p. 103).

Unexplained mechanisms in Racial Threat Theory

This study will advance RTT by examining unexplored mechanisms. As above, there are two related but distinct lines of RTT research: one that links racial/ethnic minority group size to observed criminal justice disparities; and one that links racial/ethnic minority group size to

²Researchers have used data from the American Mosaic Survey of adults (Wheelock et al., 2011), the General Social Survey (e.g., Baumer et al., 2003; Taylor, 1998), the "Eurobarometer Survey" (e.g., Ousey & Unnever, 2012) or ad hoc surveys (Hetey & Eberhardt, 2014; King & Wheelcock, 2007; Pickett, 2016; Stupi, et al., 2016).

public opinion supportive of punitive criminal justice policy. The connection between these two lines of research, however, remains somewhat murky. It is not clear, for instance, how public support for punitive policy translates directly into observable criminal justice disparities, since they are several steps removed. It is similarly unclear that the relationship between racial/ethnic minority population size and racially disparate criminal justice outcomes is actually a function of racial threat per se if attitudes are not considered.

Public opinion research has offered strong and consistent evidence that large or growing minority populations contribute to increased support among community members for more punitive criminal justice sanctions (Feldmeyer & Cochran, 2018). The assumption is that public attitudes toward formal social control are an antecedent factor for actual formal social control exercised in a community. This is a questionable assumption. The punitive attitudes research measures the public's view of the decisions *they think* should be made by criminal justice employees. The presumption is that these broad public views produce tangible disparities in a community's criminal justice system, and yet it is possible that the general public's support for punitive practices does not match the attitudes of the individuals who ultimately decide whether to impose punitive measures.

The assessment of the attitudes of criminal justice employees has theoretical importance for the questions of *who experiences threat* and *whose experience of threat matters*. Several authors have commented on the theoretical ambiguity regarding the population that experiences threat (Liska, 1987, 1992). McEntire (2007) notes that “dominant groups or the powerful can be conceptualized as the political elites, economic elites, bureaucratic managers, men, racial or ethnic majorities, the middle class, ‘mainstream America,’ or law enforcement officers.” Regarding the latter—in the context of their examination of how population makeup and

segregation affects police use of force—Liska and Yu (1992) point out that the group being threatened may not be the political elites, but rather the police officers on the streets.

Understanding who experiences threat and translates that threat into formal social control is consistent with Feldmeyer and Cochran's (2019, p. 296) call for a better understanding of the “causal mechanisms linking threat to social control.”

To answer important theoretical questions about the mechanisms that produce formal social control, research is needed to assess the punitive attitudes of the agents of formal social control instead of the general public (or *in addition* to the general public). Presumably this has not been done because of the difficulty accessing a broad pool of subjects who represent the agents of formal social control. The current study is the first to test RTT with a survey of *actual agents of formal social control* (police officers). Specifically, this study examines the relationship between racial threat and officers' punitive use-of-force attitudes.

The nexus between population makeup and officers' punitive use-of-force attitudes

By examining the punitive attitudes of the police in the context of RTT, this study also adds to our understanding of police use of force. Use of force has been examined in the context of RTT, documenting a positive relationship between racial threat and the volume of police use of force or complaints thereof (Feldman et al., 2019; Zimmerman et al., 2021). For instance, Lautenschlager and Omori (2019) examined the impact of various neighborhood (census tract) characteristics, including percent of the population that is Black, on the incidence and severity of use of force³ in the context of the stop-and-frisk encounters of NYPD during the period of 2003

³The researchers defined “use of force” broadly, to include frisks and an officer drawing or pointing a weapon.

through 2012. The researchers found support for RTT for both incidence and severity of force. Regarding their incidence outcome, they wrote (p. 1065): “The increasing number of force incidents in neighborhoods with relatively larger Black populations, even after controlling for other structural factors, fits the perspective that use of force is a mechanism wielded by a threatened dominant group against a socially marginalized group.” These collective findings are consistent with RTT in that law enforcement “might be more coercive, increasing violence and lethal force because of the threat posed” by a large or growing Black population (Lautenschlager & Omori, 2019, p. 1053).

Lautenschlager and Omori (2019) used census blocks as their unit of analysis in an attempt to assess the relationship at the “neighborhood” level (see also, Lersch, 2008; Smith 1986). The relationship between population makeup and volume of force has also been examined and confirmed using cities (Holmes, 2000; Liska & Yu, 1992; Sorensen et al., 1993; Willits & Nowacki, 2014) and states (Chamlin, 1989) as units. Lautenschlager and Omori (2019) developed a dependent measure that included less-lethal force, as did Parker et al., (2005). Other researchers have used measures that reflect officer-involved homicides (Liska & Yu, 1992; Sorensen et al., 1993; Willits & Nowacki, 2014) or complaints of force (Holmes, 2000; Smith & Holmes, 2003; Smith & Holmes, 2014).⁴ Parker et al. (2005) did not find a direct relationship

⁴Other studies have not confirmed the relationship between population makeup and volume of force including Jacobs & O’Brien (1998); Klinger et al., (2015); and Lee (2016). Other studies have examined the relationship between population make up and *disparities* in use of force, instead of *volume* (e.g., Holmes et al., 2019; Jacobs & O’Brien, 1998; Smith, 2004).

between Black composition and use of force in cities, but instead found that the relationship was mediated by police organizational factors.

While the line of study described above adds to our understanding of how “threatening” racial groups might impact police use of force, it does not identify the critical mechanism that might link racial threat to the actual use of force. We hypothesize this mechanism to be individual officer attitudes. Identification of a relationship between “threatening” macrosocial contexts (e.g., larger Black populations) and punitive police attitudes would provide stronger evidence that racial disparities in police use-of-force outcomes are driven at least in part by motivational criteria (such as fear, bias). The current study is the first to examine the relationship between population makeup and officers’ punitive use-of-force attitudes.

Methods

This study tests RTT by examining whether population makeup impacts the punitive use-of-force attitudes of police officers. The data to evaluate the relationship between Black population sizes and punitive police attitudes consists of survey responses from a national sample of law enforcement officers and the demographic and crime characteristics of the communities in which they work. Multilevel regression analyses are used to model the theoretical relationships. The following sections describe the sample, measures, and analytic strategy.

Sample

The individual-level data in this study come from surveys of 10,205 American law enforcement officers from a stratified random sample of 97 local agencies participating in the National Police Research Platform (NPRP) between August 2013 and January 2014 (Rosenbaum

et al., 2016). The sample of agencies was drawn from the 2007 Law Enforcement Management and Administrative Statistics (LEMAS) database employing 100 or more officers. About four-fifths of sampled agencies were municipal police departments, with the remaining agencies being sheriff's offices (reflecting the distribution of local agencies throughout the U.S.). Invitations to web-based surveys were sent to the population of officers within the 97 agencies. Just under half (47.7%) of the officers who received the invitations completed the survey; the mean agency response rate was 45% and the median agency response rate was 37.1%.⁵ This response rate is above average for online surveys of police officers (Nix et al., 2017). Comparison of the survey respondents to overall agency demographics suggests that the sample was generally, but not perfectly, representative; the survey sample overrepresented males by 0.1%; overrepresented White officers by 4.5%; and overrepresented those ranked Sergeant or higher by 8.1% (Rosenbaum et al. 2019).⁶ Agency identifiers permit the incorporation of city- and county-level data from the U.S. Census Bureau and the Uniform Crime Report, providing a multilevel dataset with both individual- and macro-level measures described in further detail below.

Overall, the data provide an opportunity to examine both the individual-level and macro-level factors that influence punitive police attitudes. A very large sample was obtained, providing more stable estimates—especially for officer subpopulations that are historically undersampled,

⁵ The reported response rates summarize all 3 waves/surveys that were part of the National Police Research Platform; the response rate for Survey B, specifically—the data we use—is unavailable.

⁶ For a detailed discussion of data quality, including response rates and representativeness, see Rosenbaum et al. 2019.

including female officers and Black officers. Furthermore, the officer sample is drawn from a representative group of agencies across the United States, reducing sampling biases and regional quirks that could limit generalizability. In sum, the data used in this study come from one of the largest representative samples of American law enforcement officers ever collected.

Measures

The dependent variable, punitive police attitudes, comes from the NPRP survey. The independent and control variables come from the NPRP, the U.S. Census Bureau, and the FBI's Uniform Crime Reports.

Dependent variable

Consistent with much of the research within the racial threat paradigm, the measure of punitive attitudes is global, not race-specific (Baumer, et al., 2003; King & Wheelcock, 2007; Pickett, 2016; Wheelcock, et al., 2011; but see Stupi et al., 2016). To measure the punitive attitudes of police, three items from the NPRP survey are aggregated into a summative scale but are also explored individually. Using a 4-point Likert scale, officers were asked to what degree they agreed with each of the following statements: "In some areas, it is more useful for an officer to be aggressive than to be courteous"; "Some people can only be brought to reason the hard, physical way"; and "If officers don't show that they are physically tough, they will be seen as weak." Higher scores indicate a greater endorsement of the use of coercive, physical control, representing more punitive orientations. Factor analysis suggests a single dimension, with factor loadings ranging from 0.515 to 0.581. The 3-item scale produces a Spearman-Brown coefficient of 0.58 and Cronbach's alpha of 0.63. Given the modest reliability coefficients, each of the attitudes is modeled as a discrete outcome, as well.

Independent variable

Consistent with Blalock's theory and most empirical research examining racial threat (Feldmeyer & Cochran, 2019), this study uses the proportion of the population that is Black to represent racial threat. This measure comes from the Census Bureau's 2013 American Community Survey 5-year estimates,⁷ and is measured at the "community level" of the agency—that is, at the county level for most sheriff's offices, and at the city level for most police departments. Therefore, this measure reflects the representation of Blacks in the community in which officers work (not necessarily the community in which they live).⁸

To be most consistent with racial threat theory, one would expect that larger Black populations produce larger threat effects among White officers than among other officers. This expectation is consistent with Blalock's thesis that *dominant* groups experience threat and then call for, or engage in, discrimination. As Liska (1992) explains, "those threatened include political elites, economic elites, bureaucratic managers, *ethnic majorities*, and the middle class" (p. 174, emphasis added). To explore the possibility that the threat effect is greater for White

⁷ The 2013 five-year estimates are the most reliable estimates the Census Bureau provides; data reported in 2013 are based on data collected from 2008-2012 (ensuring temporal order between the predictor and the outcome).

⁸ In supplemental analyses not presented herein, we also modeled the relative change in the Black population between 2010 and 2013; we found no evidence of racial threat effects using this measure.

officers compared to Black officers, an interaction term between percent Black and (White) officer race is incorporated into several models.

Control variables

This study incorporates other officer-level and community-level covariates that might also influence an officer's punitive attitudes independent of racial threat. Using data from the NPRP surveys, this study controls for several demographic characteristics, including gender (binary, male = 1), race (binary, White = 1, non-White = 0), age (continuous, in years), military experience (binary, yes = 1), tenure at current agency (continuous, in years) and highest education received (an ordinal variable where 1 = high school degree, 2 = some college, 3 = A.A. or equivalent, 4 = B.A. or equivalent, 5 = some graduate courses, and 6 = graduate or professional degree). Because line-level officers may systematically differ from supervisors in their approach to police work (Reuss-Ianni, 1983), another variable distinguishes supervisors from non-supervisors (binary, supervisors = 1).

At the community level, some measures may be correlated with race but have independent effects that must be modeled. The analysis therefore includes several community-level controls. Using data from the Census Bureau's 2013 American Community Survey, the poverty rate (as a percentage of all households) and the unemployment rate (as a percentage of the workforce) are included. Finally, the analysis incorporates the community's 2012 violent

crime rate from the FBI's Uniform Crime Reports,⁹ since punitive officer attitudes are likely related to violence in their communities.

Analytic strategy

To assess the influence of Black population size on officers' punitive attitudes, multilevel ordinary least squares regression (OLS) is performed on the 3-item punitive attitudes scale, accounting for both officer-level and community-level factors. Additionally, multilevel ordered logistic regression examines each attitudinal outcome independently, rather than as an aggregate scale, to provide a more granular analysis. Multilevel modeling is appropriate for several reasons. The first is theoretical: although such analytic techniques were not commonplace at the time he wrote, Blalock (1967) plainly described a multilevel theory in which individual attitudes were, in part, a product of the social contexts in which they found themselves. The other reasons are statistical. Multilevel modeling incorporates adjustments to correlated error terms and for different degrees of freedom at each level. Most importantly, officers in this study are nested within agencies a violation of the assumption of independence of observations in regression; multilevel modeling avoids the biased estimates that result when such violations occur (Luke, 2004). In this study, the punitive attitude items scale demonstrates intraclass correlation coefficients ranging from .011 to .033, indicating that up to 3.3% of the variation in punitive attitudes is attributable to differences between agencies, thus warranting multilevel modeling. All

⁹For a very small number of missing cases, the nearest available year is used in lieu of 2012 data. Due to very small odds ratios, this variable was rescaled to crimes per 1,000 residents.

predictors are grand mean centered except (male) gender, supervisor, military experience, and (White) race, which are dichotomous variables with meaningful zero-value.

Results

Descriptive statistics for study variables are reported in Table 1, before transformation or centering. On average, officers scored 7.490 on the punitive attitudes scale. The vast majority (85.4%) of the surveyed officers were male, 79.4% were White, 34.7% were supervisors, and 27.7% had military experience. The “average” officer was 42 years old, had between a 2-year and 4-year degree, and had 15 years of policing experience. The communities under study were about 24% Black, on average, although this ranged from just 0.30% Black to over 78% Black. On average, each officer’s community had a 14.9% poverty rate, a 5.7% unemployment rate, and a violent crime rate of 587 violent crimes per 100,000 citizens.

[TABLE 1 HERE]

Table 2 reports two multilevel OLS regression models. Each of these models regresses the 3-item punitive attitudes scale on various individual-level and community-level covariates. Model 1 indicates larger Black populations are associated with higher scores on the punitive attitudes index ($b = 0.008$, $SE = .002$, $p < .01$). Among the community-level variables, only the violent crime rate also predicts more punitive attitudes ($b = .035$, $SE = .012$, $p < .01$). Each of the individual-level variables except military experience is statistically significant. More punitive attitudes are found among younger officers, less-educated officers, and line personnel (versus supervisors). Punitive attitudes are stronger among male officers ($b = .493$, $SE = .050$, $p < .001$) and White officers ($b = .294$, $SE = .044$, $p < .001$).

[TABLE 2 HERE]

Model 2 is the same as Model 1 except that it introduces a cross-level interaction term between (White) officer race and percent Black in that officer's community. This term represents racial threat effects specifically among White officers. Model 2 indicates that percent Black increases punitive attitudes among White officers ($b = .007$, $SE = .003$, $p < .01$). Percent Black no longer demonstrates significant effects among non-White officers ($b = .002$, $SE = .003$, $p = .451$), suggesting that racial threat effects are concentrated among White officers.

Figure 1 demonstrates the effects of Black population size on punitive attitudes separately for White and non-White officers, after controlling for the other variables in the model. In jurisdictions with no Black citizens, White and non-White officers demonstrate remarkably similar scores on the punitive attitudes scale (7.279 vs. 7.159), a difference which is not statistically significant ($p = .140$). In jurisdictions with larger Black populations, however, these attitudes significantly diverge. Moving from 0% Black to 80% Black, punitive attitudes increase by nearly 11% among White officers (7.159 vs. 8.064, $p < .001$), but remains nearly unchanged among non-White officers (7.279 vs. 7.352, $p = .451$). The figure provides visual confirmation of significant and substantive racial threat effects, concentrated among White police officers.

[FIGURE 1 HERE]

Table 3 reports six multilevel ordered logistic regression models (Models 3 to 8). These models consider each attitudinal outcome independently, rather than as an aggregate scale. As before, two models are considered for each outcome: one with direct effects of percent Black and officer race, and one with an interaction term to model racial threat effects among White officers specifically. Model 3 indicates that percent Black increases officers' agreement with the statement "In some areas of the city, it is more useful to be aggressive than courteous" ($OR = 1.009$, $SE = .003$, $p < .01$). Every 10 percentage-point increase in the Black population makes

officers 9% more likely to more strongly agree that it is more useful to be aggressive than courteous in some areas of the city. The interaction term in Model 4 suggests that this is especially true among White officers (OR = 1.007, SE = .003, $p < .05$). As in Model 2, the inclusion of an interaction term renders the direct effect of Black population size non-significant (OR = 1.004, SE = .004, $p = .322$). Model 5 indicates that officers are more likely to prefer “the hard, physical way” in areas with larger Black populations (OR = 1.006, SE = .002, $p < .05$). Model 6 does not find a significant interaction between White officer and percent Black (OR = 1.002, SE = .003, $p = .593$). Model 7 indicates that officers are more likely to agree that officers should “show that they are physically tough” when they work in communities with a larger share of Black residents (OR = 1.005, SE = .002, $p < .05$). The interaction term in Model 8 is significant (OR = 1.010, SE = .003, $p < .01$) and renders the direct effect of percent Black non-significant (OR = .997 SE = .003, $p = .411$).

[TABLE 3 HERE]

In linear regression models, such as Model 2, statistical significance of an interaction term can be interpreted as evidence of an interaction effect. However, in non-linear models—such as Models 3 through 8—an interaction effect “cannot be evaluated simply by looking at the sign, magnitude, or statistical significance of the coefficient on the interaction term” (Ai and Norton, 2003, p. 129). Therefore, additional analyses were conducted to estimate and interpret the nonlinear interaction effects in Models 4, 6, and 8, guided by the best practices identified by Mize (2019). The key results are visually summarized in several figures.

Figure 2 demonstrates the probability than an officer strongly agrees with the statement “In some areas of the city, it is more useful to be aggressive than courteous,” as predicted by the

racial composition of their jurisdiction and disaggregated by officer race.¹⁰ This figure is based on Model 4 and controls for all of the variables in the model. When a jurisdiction is less than 5% Black, the probability that White and non-White officers will strongly agree that it is more useful to be aggressive is approximately equal, at about 14%. Above 5% Black, however, White and non-White officers significantly differ on this attitude, with non-White officers demonstrating no change, and White officers significantly more likely to strongly agree. Examination of the Average Marginal Effects (AME's) shows that every 10-percentage-point increase in the Black population leads to a 1.6% increase in the likelihood that White officers will strongly agree, which is significant at $p < .001$. Each 10-percentage-point increase in the Black population is associated with a non-significant 0.4% increase in the probability non-White officers will strongly agree ($p = .329$). This 1.1% difference (known as the second difference) between White and non-White officers' in the effect of Black population size on the predicted probability is significant at $p < .01$. This test of second differences is visualized as the difference in slopes between the lines in Figure 2. All said, this provides evidence of racial threat as a significant interaction between officer race and the size of a jurisdiction's Black population—that is, Black populations are associated with significantly more punitive attitudes primarily among White police officers.

¹⁰ We report differences in officers who “strongly agree” with each of the punitive attitudes in the survey, although a number of other analyses were examined. For instance, we also dichotomized the four outcomes into two simple Agree/Disagree categories and examined the interactions and marginal effects on the probability of agreeing with each statement. The results were substantively similar.

[FIGURE 2 ABOUT HERE]

Figure 3 demonstrates the probability that an officer will strongly agree with the statement, “Some people can only be brought to reason the hard, physical way,” based on Model 6. The figure, as well as an examination of AME’s and second differences, establishes the following: (1) every 10-percentage-point increase in the Black population leads to a significant, though small, 0.3% increase in the likelihood that a White officer will strongly agree ($p < .05$); (2) every 10 percentage-point increase in the Black population leads to a non-significant 0.2% increase in the likelihood that a non-White officer will strongly agree ($p = .193$); (3) the 0.1% second difference is non-significant ($p = .336$), indicating that there is no interaction between officer race and jurisdiction population composition (demonstrated by the roughly equal slopes in Figure 3); and (4), there are small but statistically significant differences in how likely White and non-White officers are to strongly agree (although this becomes non-significant where the population is more than 70% Black). In short, there is no evidence of an interaction effect between Black population size and officer race on the probability that officers agree with this survey item; the effects of Black population size on this attitude are small, and they are approximately equal among White and non-White officers.

[FIGURE 3 ABOUT HERE]

Figure 4 visually summarizes the results from Model 8, predicting the probability that officers will strongly agree with the statement “If officers don’t show that they are physically tough, they will be perceived as weak.” White and non-White officers demonstrate similar attitudes on this measure in jurisdictions with small Black populations. However, their attitudes significantly diverge ($p < .01$) where the Black population exceeds about 30% of the total population. For every 10-percentage-point increase in the Black population, White officers

demonstrate a 0.6% increase in the probability that they will strongly agree with this statement ($p < .01$). Non-White officers, however, demonstrate a non-significant reduction in the probability that they will strongly agree (-0.2%, $p = .406$). The second-difference of 0.7% is statistically significant at $p < .001$; the significantly different slopes are evident in Figure 4. Thus, there is strong evidence of a significant interaction between an officer's race and their jurisdiction's racial composition, providing further evidence of racial threat effects among White officers in jurisdictions with larger Black populations.

[FIGURE 4 ABOUT HERE]

Several patterns emerge across the 8 models. Overall, officers consistently demonstrate more punitive attitudes when working in jurisdictions with more Black citizens, even after controlling for violent crime and several other potential confounders. White officers demonstrate more punitive attitudes than non-White officers irrespective of the racial composition of the community. With the exception of a single measure ("Some people can only be brought to reason the hard, physical way"), the threat effects of Black population size are significantly stronger for White officers than other officers. In fact, for each of the four outcomes examined, the introduction of an interaction term for racial threat among White officers renders the effect of racial threat non-significant, suggesting that Black threat acts most powerfully upon White officers. The margins analyses, depicted in Figures 1-4, provide further evidence that larger Black populations are associated with more punitive police attitudes, particularly among White officers. The magnitude of these effects, while significant, are quite modest.

Discussion

This study advances both the theoretical and empirical assessment of racial threat theory and our understanding of police use of force. The key finding is a positive relationship between “threatening” macrosocial contexts (proportion of Blacks in a jurisdiction) and the punitive use-of-force attitudes of police. We begin this discussion by contextualizing this finding within racial threat theory and the police use-of-force research, before turning to several policy implications.

Implication of findings for Racial Threat Theory

Given the centrality of power and resources to racial threat theory, research on police—a singularly powerful entity in American society—is of paramount importance in our understanding of group threat and conflict. Indeed, much of the empirical research testing racial threat theory has focused on police force size, expenditures, searches, and the like (Stults & Baumer, 2007; Levchak, 2017). Missing from this body of research, however, are officer-level studies that explore personality characteristics related to intent and motivation. Blalock consistently argues that personal attitudes are central to any general theory of minority group relations as intervening mechanisms in the relationships between group size, threat, and discrimination. And while several prior studies have identified a relationship between racial threat and individual attitudes about punishment, none to date has done so among the most powerful, resourced, and mobilized group in society—police officers.

This study, therefore, has important implications for racial threat theory. First and foremost, it empirically indicates that perceived racial threat is a plausible explanation for racially disparate police outcomes. Undoubtedly, race-neutral factors like poverty and differential offending account for some of the relationship between race and criminal justice disparities. Nonetheless, crime rates and socioeconomic indicators cannot completely account for

the observation in this study that officers hold more punitive attitudes in jurisdictions with more Black residents.

It is especially problematic for competing theories—and especially supportive of racial threat theory—that the relationship between Black areas and punitive attitudes is particularly strong among White officers. A plausible argument might be made, for instance, that officers hold more punitive attitudes in majority-Black areas because Blacks demonstrate higher crime rates, on average. If this were true, however, we would expect *all* officers to demonstrate this association equally. On the contrary, only a single model in the current study demonstrated such a relationship. Evidence of a contextual effect among White officers is strongly indicative of a group-threat dynamic wherein larger Black populations threaten the power of Whites.

The findings herein are also consistent with the “symbolic threat” interpretation of racial threat theory, which argues that Whites, regardless of high class or low class, tend to view non-Whites as criminals or otherwise as capable of committing “deviant” behavior (Dollar, 2014).¹¹ At the individual level, this proposition is supported by the literature on implicit bias. Research has shown a widespread implicit association between Blacks and crime or threat (Correll et al., 2002; Nosek et al., 2007; Ratliff et al., 2020; Sadler & Devos, 2020; Yang et al., 2014). This has been found in several populations to include police (Correll et al., 2007), and has been shown to manifest in greater use of force against Blacks than Whites (Correll et al., 2002; Correll et al., 2007). Most relevant to the current findings is the research that found that the Black-crime implicit association is stronger in Whites than in Blacks (Nosek et al., 2007; Ratliff et al., 2020;

¹¹ In the second version, the threat emanates from the majority group’s concern with cultural differences; in this case, Blacks are perceived as a threat to the Whites’ way of life.

but see Correll et al., 2002). Because the outcomes measured in this study were explicitly race-neutral—asking about punitive attitudes generally, rather than attitudes toward one race or another—the current results may indicate that “threatening” macrosocial contexts reinforce among police officers implicit racial biases rather than intentional, motivated racism.

This research—the first to measure the punitive attitudes of agents of formal social control—raises important questions linked to the call from Feldmeyer and Cochran (2019, p. 296) for a greater understanding of the “causal mechanisms” within racial threat theory. The theory is ambiguous as to whose punitive attitudes are important (e.g., general population, elites, agents of formal social control) and how those attitudes ultimately produce formal social control. There are several possible theoretical pathways and, while our research does not directly test them, our measures of the attitudes of the agents of formal social control provide a model for the future research that is needed.

One possibility is that police and other agents of formal social control are just a subset of the general population with regard to their punitive attitudes. The high or increasing Black population is perceived as a threat, which produces or increases punitive attitudes in the general population of which police are members. These attitudes on the part of police produce increased formal social control through, for instance, use of force. This proposition is consistent with the conclusion drawn by Liska & Yu (1992) in their chapter on racial threat and police use of deadly force, as described by Liska (1992) who wrote, “a high percentage of nonwhites is not only threatening to local politicians (leading to high police expenditures) but it is also threatening to police on the beat, leading to police homicide of citizens.” A variation on this theme was articulated by Baumer et al. (2003) who suggested that the elites may be foremost in experiencing threat and that they mobilize public opinion “to further their interests” (p. 850).

Another possibility is that the agents of formal social control are not merely a subset of the general population in terms of their punitive attitudes, but instead develop their own independent attitudes based on their experiences—particularly those experiences that impact on perceptions of racial threat. Indeed, there are some theorists and researchers who suggest that perceived threat might impact differently the general population and authorities, including criminal justice officials (e.g., Feldmeyer and Cochran, 2019). Liska (1992) made this point, suggesting “that which is threatening to some elites and authorities is not necessarily threatening to others” (p. 18). Further, there could be variation within the population of authorities across levels of government (e.g., city, state) and branches of government (e.g., legislative, judicial), and criminal justice component. Similarly, Feldmeyer and Cochran (2019, p. 306) suggest, “it is likely that the mechanisms and ways in which racial context shape threat and social controls are different for judges, police officers, lawmakers and the general public.” Liska and Yu (1992) provide one explanation for how this variation might occur. They point out that, in a racially segregated jurisdiction, the powerful elites might be safeguarded from the perceived threat by this separation, whereas the police, because they are working in the areas populated by racial minorities, are not.

With both of the above possibilities—that agents’ attitudes merely reflect those of the general population or that agents develop their own attitudes based on specific experiences—it can still be (theoretically) presumed that the agents’ attitudes are directly relevant to the production of formal social control. In a third theoretical possibility, the agents’ attitudes are not directly relevant to the production of formal social control. Per this third possibility, the punitive attitudes of the elite create a political climate that pressures agents of formal social control to manage the population they perceive as threatening. Parker et al. (2005) suggested that the size

of the Black population could impact the “political climate” of a jurisdiction, which in turn could impact the police organization in ways linked to the control of police force. They did not confirm (nor fully test) their full theoretical model, possibly due to the constraints in measuring theoretical constructs,¹² but their theoretical formulation is consistent with the suggestion that perceived racial threat impacts the punitive attitudes of the elites which, in turn, place pressure on organizations in a manner that will affect the volume of formal social control.

Future research should test these various theoretical pathways, and such research will require the assessment of the punitive attitudes of agents of control, which was done for the first time in the current study. To assess the first two theoretical pathways described above will require measures of both the punitive attitudes of the general population and those of the agents of control. Ideally, such research would include a measure of formal social control. At the most general level, a finding of correspondence would be consistent with the first proposition (that, in terms of punitive attitudes, agents of control are merely a subset of the general population); a finding of differences would support the second proposition—that agents develop their own attitudes based on specific experiences and exposures. Testing the third proposition would require the defining of “elites” and measures of the punitive attitudes of both those elites and agents of control. Again, at the most general level, a finding that the elite attitudes predict formal social control more strongly than agents’ attitudes would support this proposition. A full

¹² Political climate was measured solely with Black Mayor and the organizational variables included the presence of absence of a police union and whether the agency was accredited. Further, the researchers did not analyze the pathway between threat and political climate and organizational factors.

assessment of the model proposed by Parker et al. (2005), would assess whether elite attitudes impact organizational policies, and whether organizational policies, in turn, affect the volume of formal social control.

Implication of findings for understanding use of force

The finding of a positive relationship between Black representation in the population and punitive use-of-force attitudes on the part of police enhances our understanding not just of RTT, but police use of force. Research has documented a positive relationship between population makeup and the volume of police use of force (or complaints thereof). While these studies indicate that racial makeup impacts use of force, they do not identify the critical mechanism(s) that explains this relationship, which we hypothesized might be officers' punitive attitudes.

Our hypothesis was supported; the current study found that the proportion of Blacks in a population is positively associated with punitive attitudes. This finding suggests that use-of-force disparities are driven, at least partly, by motivational criteria (such as discrimination) rather than purely race-neutral or colorblind criteria (such as criminal involvement, violence, or demeanor).

Another issue left unresolved in the present study is whether the more punitive attitudes held by police officers in areas with more Black residents translate into discriminatory *behaviors*. Several use-of-force studies have tested the relationship between police attitudes and the use of force, producing mixed results. Terrill et al. (2003), using data from the "Project on Policing Neighborhoods," found that "traditional views of police culture" predicted more force by officers. In contrast, some studies do not support a relationship between attitudes and actual use of force. In his survey of officers, Chapman (2012) found a surprising negative relationship between "acceptance of force" and officer's (self-reported) use of force. Future research might

examine the full causal pathway from threatening contexts to police attitudes, to actual use-of-force disparities.

Policy implications

The findings from the current study have implications, not just for theory (as described above), but policy as well. First, the findings related to the demographics of subjects who had the strongest punitive attitudes have implications for hiring. White individuals had more punitive attitudes than Blacks, and those punitive attitudes were even stronger when the Black population was larger. Females had weaker punitive attitudes than males. These collective findings provide additional arguments for police agencies hiring diverse personnel.

That individuals have punitive attitudes does not necessarily mean they act on them and departments can implement de-escalation and bias-management training to reduce that likelihood. De-escalation training is designed to help officers use tactics, less-lethal weapons, and communication skills to reduce the likelihood of force within incidents or, at least, to reduce the level of force that is used (Police Executive Research Forum, 2016). This type of training, as well as the “message” that is sent by the agency’s administration of it, may serve to neutralize the punitive attitudes of officers.

Another type of training that may counteract the punitive attitudes produced by racial threat focuses on bias management. Implicit bias training is designed to educate police professionals on human biases and provide them with the skills they need to recognize and manage them (Fridell, 2017). Such “awareness” training, however, is most valuable for decisions for which the officers have a moment to contemplate their biases and adjust to produce bias-free behavior. Training that can help to reduce the effect of demographics on split-second decisions,

such as those that might be associated with force, is similarly based on the science of bias—specifically the debiasing technique of “exposure to counter-stereotypes” (Critcher & Rosen, 2014; Lai et al., 2014; Woodcock and Monteith, 2012). Such science-based training to reduce the impact of demographics on use-of-force decisions has the officer interacting with a subject in a video scenario or role play and, importantly, ensures that the people in the video or role play that threaten with physical force are just as likely to be White as Black, just as likely to be female as male, just as likely to be middle-aged as young, and so forth. In laboratory settings, this exposure to counter-stereotypes in force-judgement training has been shown to reduce the impact of biases on force decisions (Park & Glaser, 2011; Plant et al., 2005).

Limitations

This study provides insight into the mechanisms of RTT that turn perceptions of threat into formal social control but, admittedly, raises more questions than it answers. The various theoretical pathways were identified above, but this study does not directly test them because the data were not available to do so. While this study provides a model for assessing the punitive attitudes of agents of formal social control, it does not have corresponding information from the public generally for comparison purposes. While this study identified punitive attitudes on the part of police, it did not demonstrate that those punitive attitudes impact use-of-force behavior. While theorists have speculated that punitive attitudes may vary across categories of agents of formal social control within the criminal justice system, this study measures only the attitudes of police. Although researchers and theorists have raised the possibility that the relationship between “threat” and formal social control may be mediated by organizational practices and policies, those policies and practices were not measured in this study. Even though the use of Percent Black as a proxy measure for racial threat reflects common practice in RTT studies,

additional or alternative measures would have tapped into political, economic, and/or symbolic threat.

Additional limitations pertain to the subject pool and the survey measure. While the response rate for the officers was high (at 47.7%) relative to other studies of police, the fact that fewer than one-half of officers within the 97 agencies responded to the survey raises the possibility that the respondents are not a completely representative subset of the officers working in those agencies; respondents were slightly more likely to be male (+.1%), White (+4.5%), and of higher rank (+8.1%). Although the models control for these measures, it is likely that other differences also exist. For instance, more punitive officers may have been more reluctant to respond to survey invitations, and officers with grievances related to identity politics may have been less likely to respond to demographic questions (which would eliminate them from the analysis due to missingness). If true, such patterns of non-response may systematically *underestimate* the threat effects observed in this study. Since the participating agencies all employ 100 or more officers, the findings may not generalize to officers working in smaller agencies, which are the majority of law enforcement agencies in the U.S. The survey questions were not developed in anticipation of this assessment of punitive attitudes but, instead, were available within an existing data set.

Conclusions

This research combined census and UCR data with the survey responses of over 10,000 police officers in almost 100 agencies. The key findings are a positive relationship between the proportion of Blacks in a jurisdiction population and punitive use-of-force attitudes on the part of police and the determination that this “threat” effect acts primarily upon White officers. This study provides the first assessment of the relationship between perceived threats to hegemonic

power and the punitive attitudes of agents of formal social control and is the first to link this threat to the police support for the use of force. It provides the missing evidence for a critical theoretical link in racial threat theory and advances our understanding of an important social issue.

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Table 1: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Punitive Attitudes Scale	7.490	1.790	3	12
Punitive 1	2.712	.837	1	4
Punitive 2	2.323	.792	1	4
Punitive 3	2.455	.727	1	4
Percent Black	24.209	16.122	.300	78
Poverty rate	14.923	5.507	2.2	30.6
Unemployment rate	5.692	1.283	1.050	9.236
Violent crime rate	5.873	4.091	.028	21.493
Age	42.364	8.658	20	79
Education	3.446	1.382	1	6
Years of Experience	15.457	8.435	0	53
Supervisor	.347		0	1
Military Experience	.277		0	1
Male	.854		0	1
White	.794		0	1

Table 2: Multilevel regression of punitive attitudes scale on percent Black and controls, $n = 9,985$

	Model 1		Model 2	
	b	SE	b	SE
Percent Black	.008**	.002	.002	.003
Poverty Rate	-.002	.009	-.004	.633
Unemployment rate	-.009	.033	-.006	-.032
Violent crime rate	.035**	.012	.037**	.012
Age	-.026***	.003	-.025***	.003
Education	-.046***	.013	-.046**	.013
Years Experience	-.014***	.003	-.015***	.003
Supervisor	-.398***	.040	-.397***	.040
Military experience	-.006	.040	-.006	.040
Male	.493***	.050	.486***	.050
White	.294***	.044	.272***	.045
White x Percent Black Interaction	-	-	.007**	.003
Intercept	6.922***	.065	6.949***	.065
Agency-level variance	.246	.028	.241	.028
Residual variance	1.703	.012	1.702	.012
Log likelihood	-19,530.72		-19,526.792	
Wald χ^2	803.14		812.11	

** $p < .01$, *** $p < .001$

Table 3: Multilevel ordered logistic regression models of punitive attitudes on percent Black and controls

	<i>“In some areas of the city, it is more useful to be aggressive than courteous”</i>				<i>“Some people can only be brought to reason the hard, physical way.”</i>				<i>“If officers don’t show that they are physically tough, they will be perceived as weak.”</i>			
	Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
	OR	SE	OR	SE	OR	SE	OR	SE	OR	SE	OR	SE
Percent Black	1.009**	.003	1.004	.004	1.006*	.002	1.004	.003	1.005*	.002	.997	.003
Poverty Rate	.994	.011	.992	.011	.986	.009	.986	.009	1.011	.008	1.009	.008
Unemployment rate	.994	.038	.997	.038	1.007	.033	1.008	.033	.990	.029	.992	.029
Violent crime rate	1.032*	.015	1.034*	.015	1.052***	.013	1.053***	.013	1.000	.011	1.002	.010
Age	.961***	.003	.962***	.003	.987***	.003	.987***	.003	.989**	.004	.989**	.004
Education	.952**	.014	.952**	.014	.980	.014	.980	.014	.962**	.014	.963**	.014
Years Experience	.987**	.004	.987***	.004	.993	.004	.993*	.004	.986***	.004	.986***	.004
Supervisor	.629***	.028	.629***	.028	.754***	.033	.755***	.033	.795***	.036	.796***	.036
Military experience	1.064	.046	1.064	.046	.914*	.040	.914*	.040	1.041	.046	1.041	.046
Male	1.475***	.080	1.465***	.079	1.759***	.096	1.756***	.096	1.293***	.073	1.282***	.072
White	1.402***	.069	1.377***	.069	1.260***	.061	1.254***	.062	1.123*	.056	1.094	.055
White x Percent Black Interaction	-	-	1.007*	.003	-	-	1.002	.003	-	-	1.010**	.003
Thresholds	-2.297	.080	-2.321	.081	-1.246	.070	-1.251	.071	-2.535	.078	-2.569	.078
	.064	.074	.040	.074	.943	.070	.938	.070	.543	.070	.510	.070
	2.167	.077	2.144	.078	3.446	.081	3.441	.081	2.752	.077	2.720	.077
Agency-level variance	.094	.021	.093	.021	.049	.013	.049	.013	.031	.011	.028	.010
Log likelihood	-11,749.989		-11,747.107		-11,628.978		-11,628.836		-10,802.823		-10,797.205	
Wald χ^2	878.18		883.98		328.95		329.41		225.98		237.97	
n	10,077		10,077		10,076		10,076		10,091		10,091	

* $p < .05$ ** $p < .01$, *** $p < .001$

Figure 1: Predictive Margins by Officer Race, Punitive Attitudes Scale

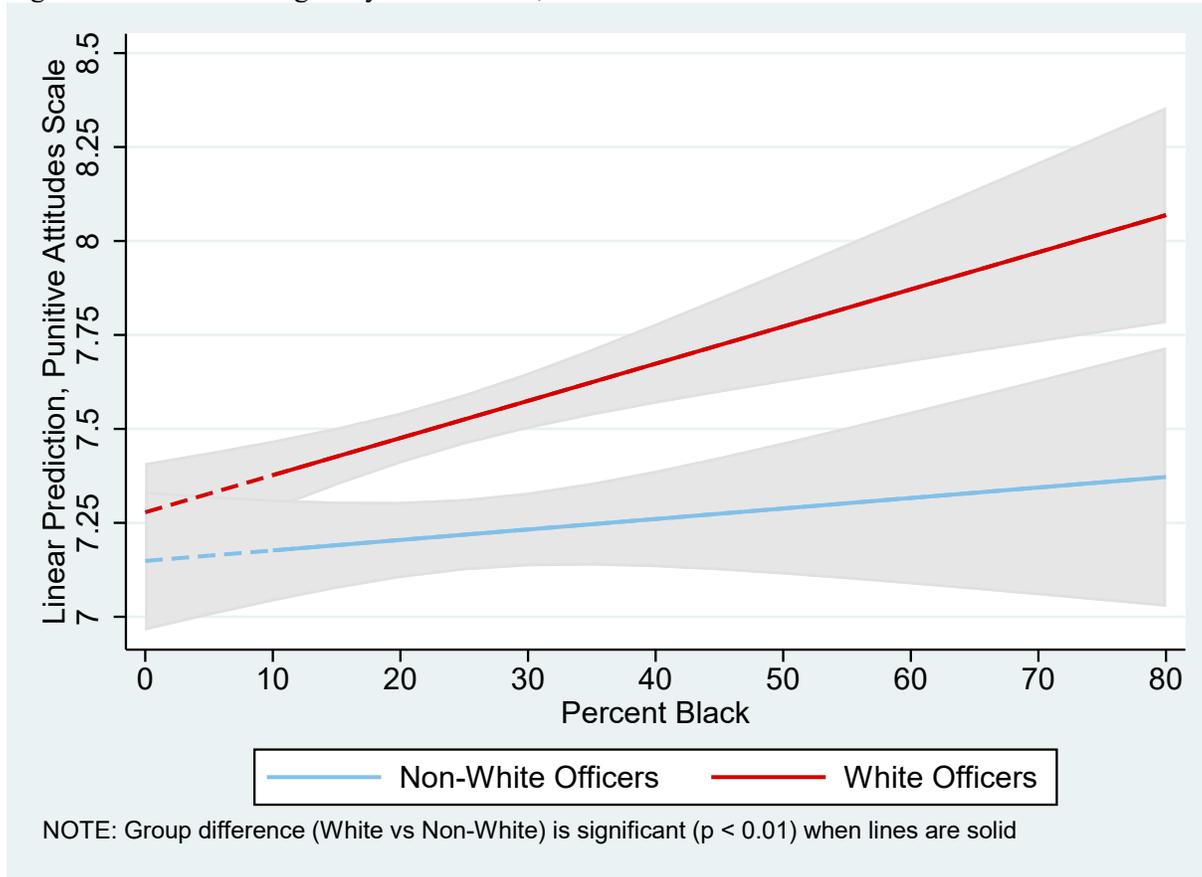


Figure 2: Predicted probability that officer strongly agrees that “In some areas of the city, it is more useful to be aggressive than courteous.”

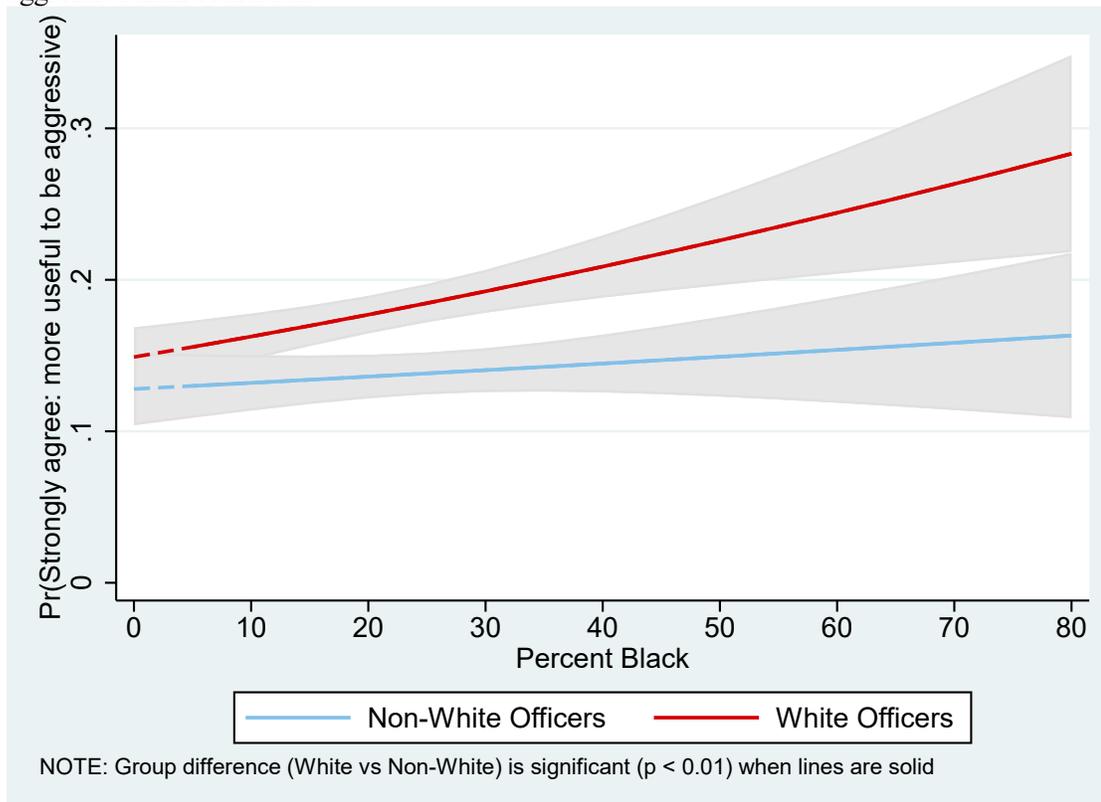


Figure 3: Predicted probability that officer strongly agrees that “Some people can only be brought to reason the hard, physical way.”

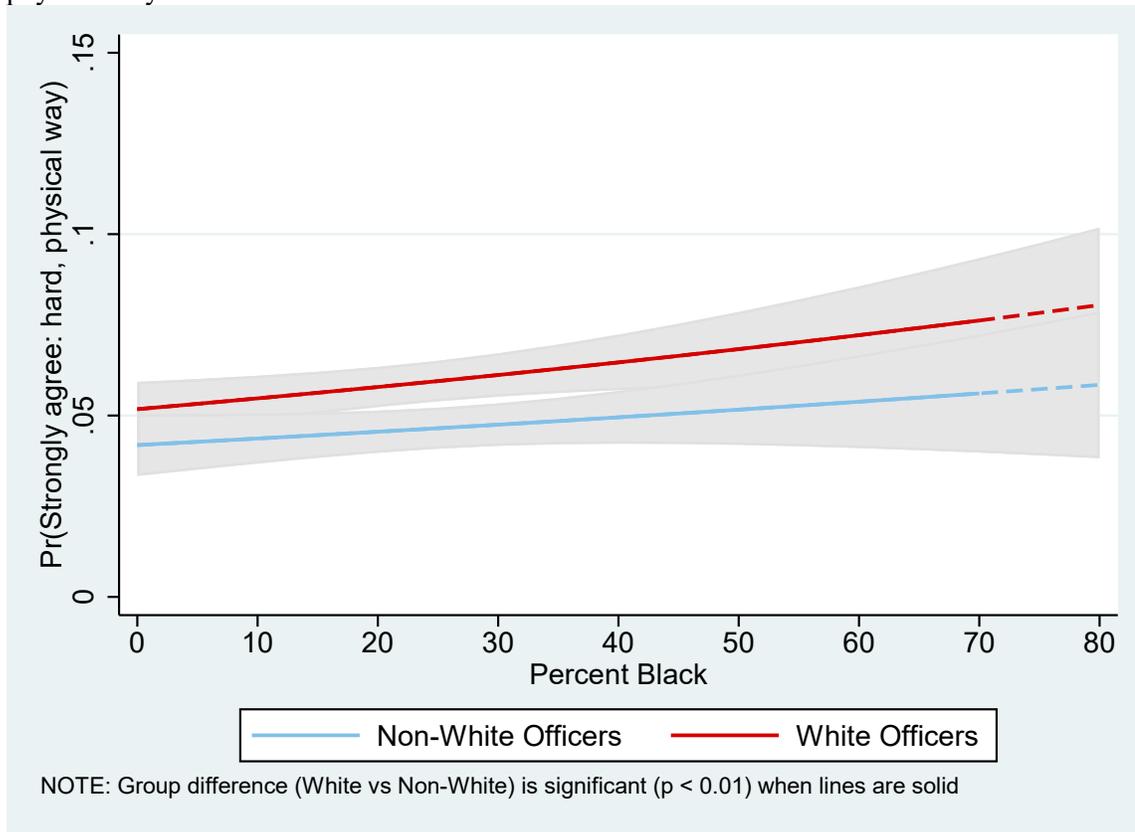


Figure 4: Predicted probability that officer strongly agrees that “If officers don’t show that they are physically tough, they will be perceived as weak.”

