Minority Threat and Incarceration Rates:

A Cross-National Study

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Abstract

Recent political rhetoric both in the U.S. and abroad has drawn renewed attention to racial and ethnic conflict, state power, and the criminalization of immigrants and minority group members. The salience of minority group conflict on incarceration is well-established in theory and research in the U.S. This study explores whether minority conflict theories are more general, such that racial/ethnic composition explains incarceration rates throughout the world, rather than being a peculiarity of the U.S. and its unique history of racial subordination. It also evaluates the functional form of these relationships. Multivariate analysis of 121 nations indicates that incarceration rates are significantly associated with ethnic heterogeneity (a measure of diversity). This relationship is a curvilinear, \( \cap \)-shaped function. However, nations with larger shares of foreign nationals do not demonstrate higher incarceration rates. The lowest incarceration rates are observed in countries with substantial homogeneity or substantial heterogeneity. Incarceration rates are highest in countries with moderate diversity—where sizable minority populations are present, but a clear majority group remains. Minority conflict may be a troublesome contributor to punishment throughout the world and is not a uniquely American phenomenon.
Introduction

In recent years, political rhetoric both in the U.S. and abroad has drawn renewed attention to racial and ethnic conflict, state power, and the criminalization of immigrants and minority group members. Rooted in conflict theory, a rich body of research identifies the salience of minority group conflict in the application of punishment. These minority threat theories argue that large or growing minority populations contribute to various forms of social control because they pose a threat to the majority group’s hegemonic power and compete for scarce resources. A substantial body of evidence links minority conflict to punitive attitudes, police expenditures, arrests, and sentencing decisions.

While minority threat theory has sometimes been used to explain other forms of social control, it has less frequently been applied to incarceration rates—despite that incarceration has become an especially pervasive form of social control in the U.S. and abroad. Furthermore, minority threat theory has rarely been tested using cross-national data. Theorists have also suggested that the relationship between population makeup and social control should be curvilinear—as subpopulations grow, their ability to mobilize resources limits the likelihood of domination and subordination—but this claim has never been tested in cross-national research.

If race and ethnicity are significant and substantial predictors of the scale of incarceration throughout the world, even among nations from different continents with dramatically different cultures, histories, and stages of development, then a minority threat theory of punishment may be truly general, not an American peculiarity, with important implications for policy and theory. This would provide evidence that the use of incarceration is, cross-culturally, a visceral response to the presence of out-groups, a troubling phenomenon during a period of growing nationalism.
and identity politics around the world. However, evidence of nonlinear relationships would have substantial theoretical and practical implications for multiculturalism and social control.

Review

There is substantial variation in incarceration rates between nations worldwide (Walmsley 2018). Over 10 million people are incarcerated in 223 nation-states and territories, either as convicted criminals or as pre-trial detainees. Worldwide, the incarceration rate is 144 prisoners per 100,000 population, although this varies considerably: most countries (55%) have incarceration rates below 150 prisoners per 100,000 residents, while Seychelles (799), the United States (698), and St. Kitts & Nevis (607) have incarceration rates more than four times the international average. The Central African Republic (16), Faeroe Islands (12) and Guinea Bissau (10) have the lowest incarceration rates in the world. There is also significant variation among different regions of the same continent. While the median incarceration rate for western African countries is 52, southern African countries have a median incarceration rate of 188; western European countries have a median incarceration rate of 84, while countries spanning Europe and Asia (Russia, Georgia, Turkey, etc.) have a median incarceration rate of 236.

The temporal trends in incarceration rates are rather varied, as well (Walmsley 2018). The 20% increase in the worldwide prison population since 2000 closely resembles the 18% increase in population growth during that time period. However, this change has not been geographically uniform. Prison populations rose substantially in the Americas between 2000 and 2015 (+40.5%), but dropped by about one-fifth (-21.3%) in Europe, driven mostly by drastic reductions to the Russian prison population.
The United States has more prisoners than any other nation in the world at about 2.2 million (Walmsley 2018). As a population-adjusted incarceration rate, it ranks second only to Seychelles. Its incarceration rate (698) differs substantially from other apparently similar countries such as Canada (106), England (148), Australia (151), France (95), and Germany (78). America’s dubious distinction as the world’s “greatest” incarcerator has allowed for a cynical reinterpretation of the term “American Exceptionalism” (Lipset 1997; Reitz 2017).

The U.S. has such a uniquely high incarceration rate that researchers have frequently argued that it also requires unique theoretical explanations (Garland 2012, 2001). Leading theories of the era of mass incarceration in the U.S. emphasize the salience of minority subordination and control (Western 2006; Alexander 2012). Whether or not the U.S. is exempt from truly general social theory remains an open question with interesting implications. If the U.S. is truly distinct, and yet most of what we know is based on the U.S. experience with punishment, then social scientists ultimately know very little about the other 95% of the world’s population. On the other hand, evidence of a general theory of punishment may advance social theory and guide public policy.

In short, incarceration rates vary widely around the world. They vary within regions and continents; they vary within Western nations and Eastern nations; they vary within developed nations and non-developed nations alike. Similar nations have dissimilar incarceration rates, and nations with similar incarceration rates seem to have dissimilar sociocultural arrangements. In the following section, however, I emphasize a phenomenon that demonstrates remarkable consistency around the world: the systematic lockup of racial and ethnic minorities.
Patterns of Minority Incarceration

In both the U.S. and other nations, a disproportionate share of incarcerated individuals are members of minority groups. According to the most recent data from the U.S. Bureau of Justice Statistics (West 2010), African Americans comprise about 14% of the total U.S. population, but comprise nearly 40% of all inmates in state and federal prisons. The incarceration rate of Black males is six times that of White males. Hispanics are also overrepresented in American prisons: though just 15% of the total population is Hispanic, 20% of the incarcerated state and federal population is Hispanic, and this climbs to 32% when only federal prisons are considered.

Although disparities were present beforehand, the U.S. incarceration boom was disproportionately driven by increases in minority confinement, and the burden of incarceration in the U.S. has fallen predominantly on communities of color. Evaluation of historical prison data from 1926 to 2010 reveals that the portion of prisoners who were White fell steadily, while the portion of prisoners who were Black rose through the 1990’s before levelling off (Walker, Spohn, and DeLone 2012). This has largely been attributed to the War on Drugs, which was responsible for most of the growth in prisons in the 1980’s and early 1990’s (Zimring 2010), and disproportionately affected Black drug offenders (Tonry 1995; Western 2006; Alexander 2012). In more recent years, Hispanics have been the fastest growing group of prisoners in the U.S. (West 2010).

The U.S. is not unique in disproportionately imprisoning minority groups. For instance, in England, a quarter of all prisoners are from minority groups, despite making up just 14% of the population—and the disproportionality of Black prisoners in the U.K. is even greater than in the U.S. (Lammy 2017, 3). In Australia, Aborigines and Torres Strait Islanders constitute just 2%
of the population, but more than 25% of all prisoners (Australian Bureau of Statistics 2018). More than half of all prisoners in New Zealand are Māori, despite that this ethnic group constitutes just 15% of the total population (OHCHR 2014). In Canada, indigenous peoples account for more than a quarter of all prisoners admitted to provincial, territorial, and federal institutions, but constitute just 4.1% of the total population (Malakieh 2018).

In addition to the overrepresentation of minority citizens, many nations incarcerate a surprising number of foreign nationals. Wacquant (1999), comparing the carceral systems of the U.S. and Europe, remarked that immigrants and foreign nationals are the “Blacks of Europe,” marginalized socially and overrepresented in prisons. Researchers have documented rapid growth of imprisoned foreign nationals in many prisons systems (Ugelvik 2017). As this is written, foreign nationals make up over 10% of the prison population in 65 nation-states—about a third of all nations in the world (World Prison Brief n.d.). In fourteen nations (seven percent), foreign nationals constitute the majority of all reported prisoners. Although the study of incarcerated foreign nationals is mostly limited to descriptive reports with limited multivariate empirical research, it is a topic that deserves further attention given trends in globalization, migration, and the rise of nationalism throughout much of the world, which often demonstrates elements of anti-immigrant populism (Kakissis 2019).

The previous two sections have established three empirical realities. First, the incarceration rate varies considerably around the world, even between apparently similar nations. Second, the overrepresentation of racial and ethnic minorities is commonplace in many nations’ prisons. Third, foreign nationals make up an alarming proportion of prisoners in many prison systems. The following section presents a theoretical framework that helps to explain these
patterns, reviews literature testing these theories, and identifies several gaps in the research which present opportunity for study.

Minority Conflict Theories

Minority conflict theories, distilled to their simplest form, suggest that discrimination (including social control) is a function of racial/ethnic composition. Several social scientists contributed to the development of minority threat perspectives of social control, including Blumer (1958), Blalock (1967), Liska (1992) and Horowitz (2001). Blumer, a sociologist, was among the first to shift explanations for discrimination beyond individual-level social-psychological predispositions. Blumer argued that discrimination was a macro-level function of group position, created by dominant-group perceptions which could include “(1) a feeling of superiority, (2) a feeling that the subordinate race is intrinsically different and alien, (3) a feeling of proprietary claim to certain areas of privilege and advantage, and (4) a fear and suspicion that the subordinate race harbors designs on the prerogatives of the dominant race” (1958, p. 4). In short, Blumer argued that group size, power, and competition were largely responsible for discrimination.

Blalock elaborated upon these basic ideas in his seminal book Toward a Theory of Minority Group Relations (1967). Although they constituted just a small portion of his many theoretical propositions regarding minority group conflict, Blalock’s statements regarding minority group size and discrimination have become nearly synonymous with “racial threat” theory (Feldmeyer and Cochran 2018). Blalock suggested that increases in minority group size tend to increase discrimination because such increases threaten the majority’s established political and economic power. Thus, political threat and economic threat motivate the majority
group to discriminate in order to maintain a group-level position of superiority—that is, maintaining the power of governance, and maintaining an advantage in economic opportunities such as employment. He noted that these relationships were most likely nonlinear—that is, discrimination may exponentially increase or decrease as the majority group adjusts to the minority group size.

Other theorists, including Quinney (1977), Turk (1969), and Blauner (1972), more explicitly linked majority-group discrimination to formal and systematic patterns of discrimination exercised through law and government. Liska and colleagues (Liska 1992; Liska, Lawrence, and Benson 1981; Liska, Chamlin, and Reed 1985) extended this further by arguing that minority groups are not only politically and economically threatening, but also present symbolic threats to the majority group. These symbolic threats include associations of the minority group to crime, disorder, and moral corruption, leading to an overall expansion of law and law enforcement in a formal, sanctioned exercise of minority group control. Thus, several theorists extended Blalock’s original theory beyond informal outcomes of discrimination to the formal practice of punishment and social control.

While Blalock himself acknowledged the need to study and explain cross-national patterns of discrimination, he was limited at the time of writing by a paucity of data and other evidence (see 1967, pp. 143-144). Donald Horowitz, a professor of law and political science, presents one of the most detailed comparative analyses of ethnic conflict to date in his book *Ethnic Groups in Conflict*. His primary focus is third-world countries in Africa and Asia and their unique experiences in the post-colonial world—countries that are not often explicitly considered in formal theory and research on minority group conflict. Horowitz argues that the
withdrawal of colonial powers from African, Asian, and Pacific nations left behind a power vacuum, contributing to many ethnic conflicts in those nations. In these nations, political parties and military structures are overwhelmingly defined by ethnic identity. He also notes that the form of Western democracy left behind is no self-sustaining panacea: “Since a majority can be obtained by setting half the state against the other half, elections commonly spur the very bifurcation that accelerates the slide away from democracy” (1985, p. 682). He quotes John Stuart Mill’s argument that democracy is “next to impossible in a country made up of different nationalities” (Mill 1950, 486). Thus, Horowitz makes the case that ethnic conflict is more common in pluralistic societies—a function of ethnic composition.

Nonetheless, Horowitz argues that the trend reverses when subgroups reach a certain size:

Some groups are so small in size and so geographically concentrated that it makes little sense for them to devote energy to political activity much beyond their locality. Other groups, however, may be large and influential enough to make plausible claims to power at the center… Several Asian and African states embrace a large number of dispersed ethnic groups, none of them large or powerful enough to threaten to dominate the center…[T]here are incentives in dispersed systems against carrying ethnic extremism too far. (Horowitz 1985, 37). Here, Horowitz describes a curvilinear relationship between ethnic composition and the exercise of law in ethnic conflict. Homogenous societies and those with very small ethnic minorities demonstrate little conflict, and are thus likely to demonstrate comparably little formal social control in the exercise of that conflict. Similarly, pluralistic societies in which there is no clear majority diffuse power and resources, and the exercise of dominance is less plausible. Between these poles—that is, where a sizable ethnic minority exists, but is not large enough to compete with larger groups for social, political, and economic power—conflict and social control will be highest.
To summarize, minority conflict theories argue that racial and ethnic composition are related to the exercise of power and control—including formal social control exercised by the criminal justice system. These theories have been applied to the U.S. as well as other nations. Minority conflict theories predict the overall scale of formal social control (it is a function of minority group size), as well as its disproportionate impact on certain segments of society (minorities “threaten” a majority group politically, economically, and/or symbolically). Therefore, minority conflict theories offer unique potential to explain patterns of imprisonment throughout the world. The following section reviews the evidence for these theories.

**Evidence for Minority Conflict Theories**

There is substantial, though not universal, support for minority conflict theories. Research has explored a variety of outcomes, which may be grouped into two broad categories: attitudes and perceptions, and actual justice system outcomes. Research exploring the effects of ethnic composition on perceptions of racial threat generally produce strong and consistent support. For instance, research consistently finds that Black population size is associated with White prejudice in the U.S. (Giles and Evans 1985, 1986; Pettigrew 1959; Quillian 1996; Taylor 1998). Studies also consistently find that larger minority populations contribute specifically to fear of crime and victimization (Chiricos, Hogan, and Gertz 1997; Covington and Taylor 1991; Liska, Lawrence, and Sanchirico 1982; Mears and Stewart 2010; Mears, Mancini, and Stewart 2009; Mears et al. 2013). There is also consistent evidence that ethnic composition is related to public support for punitive criminal justice policies (King and Wheelock 2007; Graham C. Ousey and Unnever 2012; Baumer, Messner, and Rosenfeld 2003; C. D. Phillips 1986).
Do such punitive attitudes translate to the actual exercise of social control? The evidence is mixed. Research consistently finds evidence that law enforcement size and expenditures are a function of minority group size (Chamlin 1989; Huff and Stahura 1980; Jackson and Carroll 1981; Liska, Lawrence, and Benson 1981; D'Alessio, Eitle, and Stolzenberg 2005; Kent and Jacobs 2005; Stults and Baumer 2007). On the other hand, research on the use of arrests presents much less support for minority threat theories (Liska, Chamlin, and Reed 1985; Liska and Chamlin 1984; Parker, Stults, and Rice 2005; Stolzenberg, D’alessio, and Eitle 2004; Stucky 2012). Research on sentencing decisions has produced mixed results, with several studies finding that minority group size predicts disadvantageous sentencing (Myers and Talarico 1987; Weidner, Frase, and Schultz 2005; Johnson 2005; Ulmer and Johnson 2004; Johnson, Ulmer, and Kramer 2008) and others finding null or contradictory results (Britt 2000; Weidner and Frase 2003; Kautt 2002; Davis and Sorensen 2013; Leiber, Peck, and Rodriguez 2016; Thomas, Moak, and Walker 2013; Zane 2018; Feldmeyer and Ulmer 2011).

A handful of studies have applied minority threat theories to incarceration rates. Pooled time-series analyses generally find that incarceration rates in U.S. state prisons are positively associated with Black population size (Jacobs and Carmichael 2001; Stemen and Rengifo 2011; Heimer et al. 2012). However, some research has found that race-specific (Black) incarceration rates are highest in states with smaller Black populations (Bridges and Crutchfield 1988). More recent research similarly finds that racial disparities in confinement rates within local jails (as opposed to prisons) are inversely associated with Black population size (Marier & Fridell, forthcoming). Thus, the limited body of research to date in the U.S. suggests that racial
composition is associated with increased overall rates of incarceration, but not minority disadvantage.

Three studies to date have explored the relationship between ethnic composition and incarceration rates in cross-national research. Jacobs & Kleban (2003) find a significant, positive relationship between the minority population and the incarceration rate in the U.S. only, among a larger pooled time-series of 13 progressive nations between 1970 and 1995. This study, like most conducted in the U.S., measures threat percent minority. In other studies, Ruddell and colleagues (Ruddell and Urbina 2004; Ruddell 2005) find that heterogeneous societies sometimes demonstrate significantly higher imprisonment rates, although these findings are not robust across different statistical models and various measures of heterogeneity. These studies use various measures of ethnic and religious heterogeneity, which more fully encompass the size and distribution of multiple minority groups and consider the multitude of ways societies draw distinctions of “otherness”—which may be based on skin color, language, religion, or any number of other group characteristics (Alesina et al. 2003). However, no studies to date that apply minority threat theory to incarceration rates—whether single-nation or international—have explored nonlinear relationships proposed by Horowitz, which may account for these inconsistencies.

Few studies to date have examined whether “immigrant threat” contributes to overall incarceration rates or the overrepreparation of immigrants as prisoners, but in general, there is no indication that immigration rates correlate to incarceration rates (Rumbaut 2008). Other research has examined immigrant threat on outcomes including sentencing and punitive attitudes. Research in the U.S. state of Florida finds that Hispanic immigration was not associated with
longer sentences for Hispanic defendants (Feldmeyer et al. 2015). Yet studies consistently report that increases in immigration (or perceived increases) are associated with perceptions of dangerousness and support for more criminal justice control (Chiricos et al. 2014; Wang 2012; Lucassen 2005; Chavez 2013). It is plausible that punitive attitudes will extend to incarceration policy via social pressure. However, no studies have examined immigrant threat and incarceration rates cross-nationally.

**Current Study**

As the foregoing review indicates, several patterns of incarceration throughout the world are striking, including substantial variation among apparently similar nations and the overrepresentation of minorities in prisons throughout the world. Minority threat theory appears to be uniquely suited to explaining these patterns, but has infrequently been applied to incarceration rates, especially in cross-national research. Furthermore, the few extant studies which apply minority threat theory to incarceration rates—both in the U.S. and abroad—have not considered the curvilinear relationships suggested by Blalock and Horowitz, who propose that minority group size may eventually grow large enough and powerful enough to slow or reverse the state’s discriminatory exercise of social control. There are also open questions regarding diffuse vs. targeted effects—whether ethnic threat may lead to an overall change in incarceration rates, or whether it would disproportionately affect ethnic minorities. Finally, no cross-national studies to date have examined how immigrant threat contributes to incarceration rates.

The current study examines whether ethnic composition and immigrant threat predict incarceration rates in a large cross-national sample of world nations using OLS regression.
Furthermore, this study explores whether these relationships are linear or curvilinear. This study addresses the following research questions:

Q1: Does ethnic threat predict a nation’s overall incarceration rate?
Q2: Does immigrant threat predict a nation’s overall incarceration rate?
Q3: Does ethnic threat predict a nation’s incarceration rate of foreign nationals?
Q4: Does immigrant threat predict a nation’s incarceration rate of foreign nationals?
Q5: Are the relationships (if present) linear or curvilinear?

The answers to these questions advance minority conflict theory and provide insights into the state’s punishment responses to the presence of ethnic minorities—an important topic during the current period of globalization, migration, mass incarceration, and anti-immigrant rhetoric.

Methods

Sample and Data

The sampling frame for this study consists of all the world’s independent nation-states.\(^1\) The United Nations (UN) recognizes 195 member states, as well as two observer states—Vatican City and Palestine (United Nations n.d.). Precisely identifying the total number of nations in the world is complicated by the fact that the sovereignty of many territories and governments is in dispute and changes over time—Taiwan, for instance, is recognized by the UN as a Chinese province, but it is at least partially self-governing and is often recognized by other nations as an independent state; it is therefore afforded partial recognition by the UN, as are five other states: Western Sahara, Kosovo, South Ossetia, Abkhazia, and Northern Cyprus (Stratfor 2018). The

\(^1\) The terms “country,” “nation,” “state,” “nation-state”, and even “society” are used interchangeably throughout this study, all implying some degree of sovereignty and collective governance.
number of nations may be further expanded if considering “de facto” nation-states, dependent but semi-autonomous territories, recognized countries for the Olympic games, countries eligible for the FIFA World Cup, and so on (Stratfor 2018). All of this is to suggest that there is some dispute about what even constitutes the unit of analysis in this study—a nation. Nonetheless, there are approximately 200 nations worldwide, constituting the sampling frame for this study.

The sample used in this study consists of a non-random sample drawn from the population of nation-states, based entirely upon data availability. As described in more detail in the following sections, data for the variables described below are drawn from the following sources: the CIA World Factbook; Alesina and colleagues; Freedom House; the United Nations Office on Drugs and Crime; and the World Prison Brief. After listwise deletion, the final sample sizes range from 111 to 121 nations. A list of nations is provided in Appendix A.

The sample therefore consists of the population of nations, less those nations with missing data. Missing data analysis indicates that nations not included in the analysis are significantly poorer, less democratic, smaller, and experience higher rates of homicide and infant mortality. Therefore, this study is not generalizable beyond the nations under study. Nonetheless, the 121 nations included in this study encompass 87.5% of the world’s population, with implications for the vast majority of world citizens.

**Measures**

**Dependent Variable**

The dependent variables used in this study are incarceration rates as reported by the World Prison Brief in the *World Prison Population List* (Walmsley 2018). An overall incarceration rate as well as an immigrant-specific incarceration rate are used. The overall
incarceration rate is calculated as the number of prisoners (which includes all adult prisoners held pre-trial, held on remand, or serving sentences, as reported by each nation’s central government authority or central prison authority) per every 100,000 people living in that country. The immigrant-specific incarceration rate is calculated as the total number of foreign nationals held in prisons (World Prison Brief n.d.) divided by the total number of foreign-born residents estimated by the United Nations (United Nations Department of Economic and Social Affairs, Population Division 2017). Incarceration data is unavailable for North Korea, Eritrea, and Somalia; data is known to be incomplete for China and Guinea Bissau. The incarceration rates are log-transformed to reduce substantial right skew.

Independent Variables

This study measures two potential sources of minority threat: ethnic threat and immigrant threat. This disaggregates minority threats which may be domestic in origin from minority threats which may be perceived from foreign newcomers. Ethnic threat is measured using the ethnic fractionalization index (Alesina et al. 2003), sometimes called the ethnic heterogeneity index, the diversity index, and multiculturalism, variations of which have been used in prior cross-national studies of incarceration (Ruddell and Urbina 2004; Ruddell 2005). The ethnic fractionalization index is a measure of ethnic composition, and represents the likelihood that two people randomly drawn from the same population will have different ethnic identities. A score near 0 indicates perfect homogeneity; a score near 1 reflects substantial diversity. It is computed from a combination of racial and linguistic characteristics, sensitive to the customs of each world region in establishing perceived ethnic distinctions. For instance, in diverse South American countries such as Bolivia, ethnicity is largely a function of ‘racial’ characteristics (Blancos,
Aymara, Quechua, and Mastizos), whereas in diverse European countries like Belgium, it largely reflects linguistic distinctions (such as German, French, and Italian). As the authors note, “these classifications reflect the judgment of ethnologists and anthropologists on the appropriate definition of ethnicity, which to our knowledge remains a rather vague and amorphous concept” (Alesina et al., 2003, p. 160). Thus, this measure captures a core element of social differentiation, despite its different boundaries of distinction worldwide. *Immigrant threat* is measured using estimated percentage of a country’s residents who are foreign-born, as estimated by the United Nations (United Nations Department of Economic and Social Affairs, Population Division 2017). To adjust for skew and limit the influence of outliers, this variable was log-transformed.

In order to evaluate alternative functional forms of minority threat on incarceration rates, alternative measures are also incorporated. If the relationships between incarceration rates and minority threat demonstrate curvilinear relationships—for example, if incarceration rates initially rise with the presence of small minority groups, but eventually fall when these groups are large enough to wield power and influence—then we would expect an inverse-U-shaped relationship represented by the following regression formula:

\[ Y = a + b(X) - b(X)^2 \]

Therefore, squared measures of the *ethnic threat* and *immigrant threat* variables are calculated and incorporated in several regression models to explore such quadratic relationships.

Control Variables

A variety of control variables are included in order to control for many other potential sources of variation in imprisonment, including crime, social structure, modernization, and type of government. The homicide rate is included to control for the effect of violent crime on
incarceration rates (UNODC n.d.). To reduce the influence of temporal fluctuations (especially for small nations), measurement error, and missing data for certain years, the mean homicide rate is used for up to 10 years for each nation between the years 2006-2015. Several socioeconomic indicators are measured using data from the CIA World Factbook, including real GDP per capita, income inequality (GINI), and the unemployment rate (CIA 2011). Indicators of modernization include the percentage of residents living in urban areas, the urbanization rate, economic growth per capita, school life expectancy, and the literacy rate (CIA 2011). Finally, a measure of democracy is included to control for the effect of government structure on incarceration rates (Freedom House 2018). Some predictors were heavily skewed; to limit the influence of outliers, these variables were log-transformed, including GDP per capita, the unemployment rate, and the homicide rate.

Results

Table 1 reports descriptive statistics of the variables under study (before transformations). Among the nations under study, the average incarceration rate is 170 prisoners per 100,000 citizens. On average, each nation in this study is composed of a population that is about 7.6% foreign-born. The ethnic fractionalization index averages .40, indicating that in the “average” nation, the likelihood of randomly selecting two people of different ethnicities is about 40%.

[TABLE 1 HERE]

Table 2 presents several regression models predicting overall incarceration rates. Models vary in two ways: the form of minority threat measured, and the functional form of the relationship. Model 1 reveals that immigrant threat is not directly associated with overall incarceration rates (b = .000, SE = .042, p = .994). Model 2 incorporates the squared term for
immigrant threat, but once again, neither the linear nor squared terms are significantly associated with incarceration rates (immigrant threat: \( b = -0.159, \ SE = 0.184, \ p = 0.389 \); immigrant threat\(^2\): \( b = -0.019, \ SE = 0.022, \ p = 0.375 \)).

Models 3 and 4 examine ethnic threat. Model 3 models a linear relationship between ethnic threat and incarceration rates, and indicates that ethnic threat is not directly associated with incarceration rates (\( b = 0.288, \ SE = 0.225, \ p = 0.203 \)). Model 4 duplicates Model 3, but introduces a squared measure of ethnic threat in order to test for curvilinear relationships. The results provide strong support for a curvilinear relationship between ethnic composition and incarceration rates. The linear and squared terms are both substantive and significant (ethnic threat: \( b = 2.999, \ SE = 0.765, \ p < 0.001 \); ethnic threat\(^2\): \( b = -3.402, \ SE = 0.921, \ p < 0.001 \)). The directions of the signs indicate support the hypothesized inverse-U shaped relationship, wherein the most homogenous and most heterogeneous societies demonstrate the lowest incarceration rates, and the highest rates are found in nations with moderate ethnic diversity. Further support for the curvilinear relationship between ethnic threat and incarceration is indicated by the change in \( R^2 \), a difference which is statistically significant (\( F \) change = 13.628, \( p < 0.001 \)). Overall, Model 4 explains more than half of the cross-national variation in overall incarceration rates. Among the control variables, higher homicide rates, higher income inequality, and lower democracy scores were all associated with higher overall incarceration rates, as consistent with existing research.

[TABLE 2 HERE]

Table 3 presents models which predict the incarceration rate of foreign nationals rather than the overall incarceration rate. While the previous models examined diffuse effects of
minority threat, Models 5 through 9 in Table 3 examine targeted effects. Overall, model fit is poorer ($R^2$ ranges from .282 to .393), suggesting that minority threat theories are worse at predicting targeted formal social control responses than the diffuse responses explored previously. Model 5 indicates that larger immigrant populations are associated with lower incarceration rates for foreign-born citizens ($b = -.383, SE = .076, p < .001$). This indicates that a 10% increase in immigration is associated with a 3.83% decrease in immigrant incarceration rates. Model 6, which introduces a squared term for immigrant threat, finds no evidence for nonlinear relationships. Model 7 demonstrates no direct, linear relationship between ethnic threat and foreign-born incarceration rates ($b = -.253, SE = .445, p = .571$), but Model 8 provides evidence for a curvilinear relationship between ethnic heterogeneity and the foreign-born incarceration rate (ethnic threat: $b = 3.607, SE = 1.555, p < .001$; ethnic threat$^2$: $b = -4.877, SE = 1.887, p < .001$). Because Models 5 and 8 provide evidence that different types of minority threat, with different functional forms, are significant predictors of the foreign-born incarceration rate, a final model includes both of these variables in a full model. Model 9 reveals that immigrant threat maintains a significant negative association with immigrant incarceration rates ($b = -4.788, SE = 1.307, p < .001$). Likewise, ethnic threat maintains a significant, curvilinear association with immigrant incarceration rates (ethnic threat: $b = 4.227, SE = 1.474, p < .001$; ethnic threat$^2$: $b = -5.349, SE = 1.782, p < .001$). Among the control variables, income inequality was a strong and consistent predictor of the foreign-born incarceration rate.

[TABLE 3 HERE]

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2 Variance Inflation Factors indicate no problematic levels of collinearity, indicating that immigrant threat and ethnic threat truly measure different phenomena.
Discussion

In the past several years, politicians across the world—including the U.S., the U.K., Italy, Austria, Hungary, Poland, Slovakia, Czechia, and Australia, among others—have popularized xenophobic rhetoric and policy (Erixon 2018; Anti-Defamation League 2018; Revill 2019). In the U.S., President Donald Trump launched his presidential campaign with a speech plainly calling Latin American immigrants rapists and drug dealers (A. Phillips 2017). In Europe, nationalist and supremacist movements have flourished enough to influence social policy (Counter Extremism Project 2018). Minorities and immigrants are disproportionately imprisoned in many countries worldwide (Malakieh 2018; Australian Bureau of Statistics 2018; OHCHR 2014; Lammy 2017; World Prison Brief n.d.). Although bias is more openly expressed in recent years, biased patterns of justice are hardly new; for instance, the U.S. prison boom in the 1980’s and 1990’s disproportionately affected Blacks due to plainly discriminatory law enforcement and lawmaking, including the drug war and the 100-to-1 sentence disparity for crack cocaine (Alexander 2012), and the overrepresentation of immigrant minorities was documented in Europe during that time (Wacquant 1999).

The current rhetoric of ethnicity and exclusion has drawn attention to the ways minority threat evokes social control responses. Minority threat theories suggest that large or growing minority populations contribute to discriminatory social control because minorities pose real or imagined threats to the majority group’s dominant position. These responses may include criminal justice responses, and substantial research has explored how minority threat contributes to punitive attitudes, police activity, and sentencing. Yet, several issues deserve further study, including generality (beyond the U.S.), application to incarceration rates, differing forms of
minority threat (e.g., domestic minorities vs. foreign immigrants), targeted vs. diffuse effects, and linear vs. curvilinear relationships.

Using samples of 111 to 121 nations worldwide (accounting for over 87% of the world’s population), this study used a series of regression models in order to examine the relationships between minority threat and incarceration rates. In short, the results emphasize three things. First, there is a curvilinear relationship between ethnic threat and overall incarceration rates. Second, there is a curvilinear relationship between ethnic threat and the incarceration rate of foreign-born citizens. Finally, there is a direct, negative relationship between immigration and the incarceration rate of foreign-born citizens.

The curvilinear relationship is illustrated graphically in Figure 1, which plots actual (logged) incarceration rates against ethnic fractionalization. As hypothesized, the relationship changes direction near the midway point, suggesting that incarceration rates fall when a single ethnic group no longer constitutes a majority of the population. Once the fractionalization index exceeds .50, two randomly drawn residents are more likely to be from different ethnic groups than the same group. The U.S. has been labelled. As often noted, the U.S. has among the highest incarceration rates in the world; what is striking is that it also falls near the vertex of the parabola with ethnic heterogeneity. This provides some evidence that the U.S. may not be especially unique, but demonstrates one of the highest incarceration rates in the world because of its ethnic fractionalization. In fact, incarceration rates in the U.S. recently began falling (Walmsley 2018)—just as one would expect given its continuing demographic shift toward heterogeneity (Frey 2018). Figure 2 uses predicted values, rather than actual incarceration rates, in order to control for various confounders; it is based on Model 4 in Table 2. While the U.S. is no longer an
outlier, it is still an above-average incarcerator. Finally, Figure 3 presents adjusted predicted values—that is, the predicted log incarceration rate for each nation after removing that nation from the regression formula. This reduces the influence of outliers by basing each country’s predicted incarceration rate on the data from all other nations. As predicted by its location on the ethnic heterogeneity index, the U.S. has an above-average adjusted predicted incarceration rate, though it is not as dramatic as its actual incarceration rate. These three figures visually demonstrate mixed support for the “American exceptionalism” claim regarding incarceration. While its actual incarceration rate is far higher than would be expected, its unique location on various dimensions of social structure—including its ethnic diversity—means that one would predict above-average rates of incarceration in the U.S. irrespective of its historical or cultural peculiarities.

[FIGURE 1 HERE]

[FIGURE 2 HERE]

[FIGURE 3 HERE]

One of the more surprising findings is that immigration is associated with a strong negative association with the immigrant incarceration rate. This contradicts minority threat theory, which supposes that a large influx of immigrants would threaten established citizens, especially if they compete with citizens for jobs and social benefits, and therefore invoke social control responses, which might include incarceration. One possibility is purely mathematical: where the population of immigrants is large, the denominator rises in the formula for the immigrant incarceration rate (immigrant prisoners ÷ immigrant population), reducing the overall immigrant incarceration rate for countries with substantial immigration, at least more
immediately. A more likely possibility, which would be masked by the cross-sectional design, is that immigrants are less likely to immigrate to nations that routinely incarcerate foreigners. Research indicates that immigration is associated with lower crime rates (Lee and Martinez 2009; Adelman et al. 2017; G. C. Ousey and Kubrin 2009; Butcher and Piehl 2007), so the drop in incarceration rates found here could also be a function of a drop in crime, which might outweigh increases in formal social control. Unfortunately, with the exception of homicide, cross-national crime rates are neither reliable nor comparable (Archer and Gartner 1987), so they are not included as controls in this study.

The results suggest that minority threat theory is a useful theory of justice applicable throughout the world, not just the U.S., and deserves further cross-national development. Prior studies have found rather little support in cross-national research—but they all used linear rather than curvilinear models (Jacobs and Kleban 2003; Ruddell and Urbina 2004; Ruddell 2005). As Models 3 and 7 indicate, ethnic diversity demonstrates no direct association with overall incarceration rates—but Models 4, 8, and 9 demonstrate that a significant relationship exists in a different functional form. Therefore, future cross-national research, whether examining the influence of ethnic threat directly or incorporating it as a control variable, must carefully consider specification in the construction of accurate models.

Furthermore, minority threat theory has rarely been applied to incarceration rates, but the results here suggest that it provides useful insights for the macrosocial study of the scale of imprisonment—a topic which has sometimes challenged social scientists, especially theoretically (Zimring and Hawkins 1993; Zimring 2010). With the exception of some research on political diffusion (Greenberg 1999; Jacobs and Carmichael 2001; Jacobs and Kleban 2003), most of what
can currently be called theories of incarceration are highly discursive, avoid generality for historical and cultural contingency, focus on just a single nation or a handful of Western nations, and make little attempt to quantify and systematically predict incarceration rates (Garland 2012; Foucault 2012; Rothman 1971; Alexander 2012). This study indicates that a truly general, systematic, cross-national explanation for incarceration shows promise. The total explained variance, as well as the standardized regression coefficients for the ethnic threat variables, indicate that minority conflict is a useful consideration for a macrosocial theory of incarceration.

This study also addresses emerging questions about the sources of threat (e.g., domestic or foreign; Feldmeyer et al. 2015) as well as whether threat leads to diffuse or targeted justice outcomes (Zang 2018). The results indicate that domestic ethnic threat—as measured by a nation’s overall ethnic fractionalization—influences both the overall incarceration rate and the immigrant-specific incarceration rate, suggesting diffuse effects (see models 4, 8, and 9). Immigrant threat, on the other hand, is only associated with the immigrant incarceration rate, indicating targeted effects, and in a direction contrary to threat theories (compare Model 1 to Models 5 and 9).

**Study Limitations and Future Research**

Notwithstanding several important and novel insights, this study suffers from several limitations which provide opportunities for further research. Most of these limitations stem from shortcomings with international data. First, the study is cross-sectional; apart from several developed Western nations, reliable time-series data is notoriously incomplete. However, this is rapidly changing as the information revolution produces more data on a variety of measures in many nations, and future research ought to extend this cross-sectional study to longitudinal and
pooled time-series designs which can also account for change over time. Given the negative relationship between immigration and crime, as well as the negative relationship between immigration and incarceration, future studies ought to capitalize on reliable and comparable measures of crimes other than homicide in order to examine their contribution to reduced immigrant confinement rates in countries with substantial immigration.

The measure of ethnic heterogeneity used in this study (Alesina et al. 2003), in addition to being a cross-sectional measure, is also not as recent as might be desired. Future cross-national research would benefit from an updated—perhaps time-series—measure of ethnic heterogeneity as the composition of nations changes under the influences of globalization. Nonetheless, the issue of changing ethnic composition—known as endogeneity—was explored by Alesina et al. (2003), and the evidence suggests that nations’ ethnic heterogeneity changes little (or slowly) over time, making this problem less substantial than might be assumed.

Moreover, a curvilinear relationship inherently involves both an increasing and decreasing slope between predictor and outcome, and so sampling bias (usually due to data availability) may account for the often contradictory findings of previous studies. For example, an examination of Figure 1 indicates that researchers would draw very different conclusions about minority threat and incarceration if they sampled only less-heterogeneous nations (the left half of the figure, with an increasing slope) versus the most-heterogeneous nations (the right half of the figure, with a decreasing slope). Therefore, the curvilinear relationships uncovered in this study have very important implications for the sampling and interpretation of future research. Finally, the curvilinear relationship between minority threat and incarceration ought to be applied to other forms of social control, including expenditures, arrests, convictions, and
sentences; Horowitz’s claim about reversing trends were applicable to all forms of ethnic conflict, not incarceration specifically.

Conclusion

This study provides several insights into the influence of minority conflict on the size of prisons worldwide. Consistent with minority threat theories, a nation’s incarceration rate is associated with its ethnic diversity, suggesting that incarceration rates throughout the world are a function of minority conflict and control. While modest minority populations are associated with high rates of incarceration, when nations achieve a level of diversity that eliminates a clear ethnic majority, this trend reverses, making the most diverse and multiethnic societies those with the lowest incarceration rates. However, immigration does not predict higher rates of imprisonment. In all, this research presents compelling evidence that ethnic composition remains a pernicious influence on incarceration throughout the world—but that immigration and multiculturalism has the potential to reverse this trend.
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