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Cross-National Incarceration Rates as Behavior of Law

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by

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ABSTRACT

Incarceration rates vary substantially around the world. However, systematic cross-national comparisons examining such variation are rare. Using Donald Black's theory of law, and further informed by other theories in the sociology of punishment with conceptual overlap, the purpose of this study is to evaluate the structural and cultural factors that influence incarceration rates around the world. Using data from the World Prison Brief, World Values Survey, CIA World Factbook, and other international datasets, this study evaluates a series of ordinary least squares regressions in 66 nations. This study is one of few macrosocial tests of Black's theory of law to incorporate all theoretical dimensions, and it is the first to model proposed nonlinear relationships. Overall, the results identify multiple social dimensions associated with the scale of carceral systems throughout the world. The results also provide evidence for an "American Exceptionalism" hypothesis of incarceration.

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CHAPTER ONE:
INTRODUCTION

According to the World Prison Brief, 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).

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. At first glance, there is no clear pattern to incarceration rates. Similar nations have dissimilar incarceration rates, and nations with similar incarceration rates seem to have dissimilar sociocultural arrangements.

The variation in incarceration rates throughout the world might at first be assumed to be associated with crime rates. The relationship between incarceration rates and crime rates may operate in either direction, depending on the theorized causal order. It is possible, for instance, that incarcerating a greater share of offenders, or sentencing offenders to longer prison sentences, will reduce crime through its deterrent or incapacitative effects.[1] The reverse should be true as well—that is, crime rates should predict incarceration rates. This is logically intuitive since the commission of a crime is a necessary—though insufficient—cause of incarceration.

The available research, however, is mixed at best. In their study of aggregate U.S. crime rates and incarceration rates, McGuire and Sheehan (1983) find that crime rates were a significant predictor of incarceration rates between 1960 and 1979. On the other hand, Blumstein

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[1] Levitt (2004), for instance, finds that increases in imprisonment are responsible for about one-third of the 1990's crime drop in the United States.

and Cohen (1973) examined temporal data in the U.S. and abroad and found that incarceration rates are relatively stable, even when crime rates change significantly. This finding led to their "Theory of the Stability of Punishment," which argued that as criminal behavior becomes more common, social disapprobation of the behavior finds a new equilibrium. Suppose, for instance, that aggravated assaults were to substantially increase. One might assume that incarceration rates would similarly spike (owing to an increase in incarcerable offenders). However, Blumstein and Cohen's thesis posits that the increase in assaults makes the behavior more familiar and less deviant, and therefore eliciting more lenient punishments.[2] When crime rises, punishment falls; when crime falls, punishment rises. Thus, a relatively stable number of prisoners existed in many Western countries in the first half of the twentieth century, despite fluctuations in their crime rates.

The U.S. prison boom which followed publication of these studies, however, created a research puzzle, since it directly contradicted any law of "stability of punishment," and also because there was no comparable antecedent crime boom. Blumstein and Rosenfeld (1998) observe that rates of the most serious offenses (murder and robbery) were relatively stable between the mid 1970's and the mid 1990's. Nonetheless, the incarceration rate quadrupled over this time. The disconnect between crime rates and prison rolls is not limited to the U.S. Research shows that an increase in violent crime was also observed in other Western nations between the early 1960's and early 1990's, and yet they observed stable or decreasing prison populations

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[2] Zimring and Hawkins (1993) have argued that this essentially reframed Durkheim's arguments on social control. Durkheim proposed a form of normative equilibrium, where formal social control (law and punishment) supplanted waning informal social controls. Blumstein and Cohen argue that the normative (and hence punitive) equilibrium emerges because the rate of condemnation varies inversely with the frequency of an act: rare acts are, by definition, deviant, and deviant acts are punished severely; conversely, frequent behaviors are, by definition, normative, and are hence less condemned or sanctioned.

(Tonry, 1999). The temporal trends are often particular to the region under study: while a correlation has been observed between homicide rates and incarceration rates in Italy, perhaps owing to moral panic over Mafia-related violence (Melossi, 2001), 170 years of Belgian crime and prison data suggests that the crime rate fails to predict that nation's scale of incarceration (Vanneste, 2001).

In addition to these examinations of temporal trends, a handful of studies have attempted to examine geographic variance, as well. Regrettably, most studies tend to avoid a systematic cross-national comparison, and instead attempt to invoke some comparison of the U.S. to other Western nations. Nonetheless, they tend to suggest that cross-national differences in crime rates are unrelated to cross-national differences in imprisonment (Tonry, 1999). A comparison of victimization surveys in advanced, industrialized nations indicates that Americans experience average rates of overall victimization. However, the U.S. demonstrates higher rates of *violent* victimization than average, though similar to Australia, Canada, Spain, and France (van Kesteren, Mayhew, & Nieuwbeerta, 2000). That other countries also demonstrate high rates of violent crime but modest incarceration rates suggests that violence is not a robust predictor of imprisonment (Mauer, 2003). Other studies suggest that incarceration rates may have a modest association with lethal violence, but not with the rate of other crimes: examination of European crime and prison data demonstrates that cross-national incarceration rates are emphatically unrelated to crime rates, except for homicide (Aebi & Kuhn, 2000; Lappi-Seppälä, 2011). Again, however, the cross-sectional multinational research on the crime-imprisonment relationship appears to be highly contextual: homicide appears to be more strongly related to incarceration rates in developed nations than developing nations (Ruddell, 2005).

Overall, the weak relationship between crime rates and incarceration rates, as well as the apparently contextual nature of these effects, demands the consideration of other factors influencing the scale of imprisonment. Broad socio-cultural arrangements are likely to influence the exercise and scale of punishment much more than crime rates.

Donald Black's *Behavior of Law* (1976) provides a comprehensive theoretical framework that considers a variety of socio-cultural factors that influence the scale of punishment. Donald Black's theory of law draws upon several sociological traditions, distilling them into five broad domains that he calls "social dimensions." These include the vertical dimension (stratification, or the distribution of material resources), the morphological dimension (the distribution and integration of people), the cultural dimension (based on symbolic systems including religion, art, and science), the corporate dimension (referring to the capacity for organization and collective action), and the normative dimension (the socialization of shared values by institutions of informal control, such as the family, church, and school). Each of these dimensions predicts formal social control (or what he often calls more broadly simply "law") in a series of clear, succinct postulates.

The present study is one of only three studies to apply Donald Black's legal theory to incarceration rates, and the first to do so cross-nationally. Research on incarceration frequently involves mere comparison of descriptive statistics in order to draw unfavorable inferences about the U.S. (Young & Brown, 1993). There exists little *systematic* cross-national comparison, limiting extant research to incomplete, *ad hoc* models that are culture-bound (Bennett, 2004). Most theories of punishment—especially with regard to incarceration—are American. This may be problematic. If America truly is 'exceptional,' in the sense that social theories are unique to

the American context, then most of what we know about punishment theories only apply to 5% of the world's population, limiting the scope of the discipline. If American incarceration is *not* exceptional, but simply reflects generalizable social principles occurring in all societies, then the scholarly emphasis on unfavorable distinctions between America and the rest of the world are misleading (Young & Brown, 1993). In either case, cross-national research is desirable.

In Chapter 2, I introduce Black's *The Behavior of Law*. In addition to summarizing the theoretical claims, I briefly review its empirical support. Black's theory of law has garnered mixed results, and it receives relatively little attention in serious scholarship, especially after several highly critical early studies (e.g., Gottfredson & Hindelang, 1979; Myers, 1980). In fact, fewer than three dozen empirical tests exist, and were it not for their claim to be explicit applications of *The Behavior of Law*, it would sometimes be difficult to identify commonalities among them. There is little consistency in the way Black's key dimensions are conceptualized or operationalized. There is also a common tendency to omit key dimensions altogether, or to fail to specify models in a way consistent with Black's theory—such as modelling curvilinear relationships. Most relevant to the current study, extant research on *The Behavior of Law* focuses on individual-level experiences, especially the decision to report an event to police. Only seven studies examine macrosocial phenomena, despite Black's insistence that his theory applies at all levels of analysis. Just two studies have attempted to apply Black's theory to incarceration rates, and both of these are limited to geotemporal outliers: the U.S. during antebellum Reconstruction; and the U.S. during the 20th-century prison boom. All of this is to say, as I will elaborate later, that Black's theory of law may have been dismissed prematurely.

In Chapter 3, I consider other theories in the sociology of punishment which have conceptual overlap with Black's theory. Building on Chapter 2, I discuss the way these other theories can inform the conceptualization and measurement of Black's dimensions, which has been inconsistent. Chapter 4 describes a method of examining cross-national variation in incarceration. Despite the challenges with international data, I present measures that are theoretically consistent, reliable, and widely available, building upon the arguments and theories presented in Chapter 3. In Chapter 4, I also present my analytic approach, which consists of regression analyses on a cross-section of 66 nation-states, closing with several specific hypotheses derived from *The Behavior of Law*. Chapter 5 applies a series of models and analyses that empirically test hypotheses derived from Black's theory. A discussion follows in Chapter 6, including implications for other theories in the sociology of punishment beyond Donald Black's theory of law. Chapter 6 also discusses the broad macrosocial structural arrangements that appear to contribute to incarceration rates, and evaluates claims of American Exceptionalism.

The purpose of this study is to apply Donald Black's *The Behavior of Law* to cross-national variation in incarceration rates. Informed by other theories in the sociology of punishment, it explores the broad socio-cultural arrangements that may account for the scale of incarceration throughout the world. In addition to informing our understanding of incarceration rates, this study evaluates the utility of Black's theory of law, which has been widely criticized. His theory is introduced in the next chapter.

CHAPTER TWO:
THE BEHAVIOR OF LAW

This chapter proceeds in three parts. First, I present Donald Black's original theoretical statements, including his explicit propositions. In the second part, I present empirical tests which have been largely unfavorable. In the third part, I identify the theoretical or methodological problems with this research. This will setup the next chapter, which considers other theories in the sociology of punishment that have theoretical or conceptual overlap, and may help inform measurement of Black's dimensions.

Theory

The Behavior of Law (Black, 1976) is the first attempt at "pure sociology," and stands to this day as its exemplar, with Donald Black as its principal advocate. Pure sociology explains all human behavior as social life, free from psychology, attitude, motive, and intent (Black, 1995). In other words, it is supraindividual. Pure sociology rejects any interpretation of the individual as such; while not denying that individuals behave, pure sociology seeks only to explain the behavior of "THE SOCIAL," (as Black [1995] writes it, to emphasize its perceived supremacy), arguing that social behavior is conceptually distinct from, and more than the aggregate of, individual thoughts and actions.

The pure sociological approach was significant for several reasons. Prior to Black's work, studies on the sociology of law were infused with a legalistic interpretation of law which implicitly legitimized the law without critical reflection, a technique of analytic jurisprudence

(K. C. Wong, 1995). In other words, the sociology of law frequently lacked a critical self-reflection and sought to understand the effect law had on society, rather than asking what effect society had on the law. At the time *The Behavior of Law* was published, labelling, conflict, and radical theories were emerging (or re-emerging; Lynch, Michalowski, & Groves, 2000, pp. 9–11), and it joined these subdisciplines in its critical examination of the role of sociological factors in the application of law. Even when attempts were made at positivism and empiricism, the sociology of law was often consumed more with an attempt to explain the social response to law than the legal response to the social[3]; Black was among the first to explicitly study law as a dependent variable (Wong, 1995). Prior to his work, most studies of society and law simply took the law for granted; study of law involved attempts to either make sense of its own internal logic structure, or attempts to understand the law's effect on social behavior. Black instead sought to explain THE SOCIAL's effect on *legal* behavior.

More significantly, Black expressed frustration with the psychology infused in sociology; he wished instead to supplant motivational approaches to explaining social behavior with purely behavioral approaches, on the grounds that motivation, intent, and any other psychological construct cannot be empirically observed (Black, 1995). This is the crux of "pure sociology": the elimination of subjective internal mental states from the understanding or explanation of social phenomena. Black (1976; 1995; 2018) argues that his pure sociology is value-neutral, overcoming a teleological sociology which conceptualizes everything in regard to the needs, wants, functions, preferences, goals, purposes, or ends of people, an approach he regards as

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[3] This phenomenological approach emphasized the role of personal identity and meaning-making in response to the application of law (Lemert, 1951); (G. S. Becker, 1974); (H. S. Becker & O'keefe, 1963); (Erikson, 1962). Black stood out from his contemporaries by both reversing the causal order, and removing personal psychology from the study of law and society.

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soundly unscientific, even "medieval" (1995, p. 861). Consider the relationship between law and extra-legal characteristics, such as race: while theorists such as Blalock (1967) propose that self-interested social groups may have political or economic rationalizations for discrimination—such as a threatened loss of political power, or increased competition on the job market—Black (2000a) argues that these psychosocial explanations are neither necessary nor desirable. Instead, issues of integration (or segregation) and differentiation are social facts with their own natural outcomes, regardless of the attitudes of some individuals or groups.

The omission of psychology in the formulation of *The Behavior of Law* is important in one major respect: it explains social inequities in legal outcomes without requiring personal animus (Black, 2000b). It accounts for racism without racists[4], classism without bourgeoisie, ethnocentrism without xenophobia. Much of modern psychology has supplanted cognitive and motivational approaches with "implicit social cognition," acknowledging that a great deal of human behavior is driven by subconscious and socially-contextual processes that occur outside of an individual's conscious awareness or intention (Gawronski & Keith Payne, 2011). At the aggregate level, implicit social cognition contributes to biased patterns of social control that are the frequent focus of sociologists (Payne, Vuletich, & Lundberg, 2017). While Black may not be interested in this (or any) line of social psychological research (Black, 1995), it at least demonstrates the rapidly accepted practice of explaining social behavior without individual intent, motivation, or awareness—the principal epistemological assumption of pure sociology.

The pure sociology of *The Behavior of Law* addresses many of the criticisms present in

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[4] The term is borrowed from Bonilla-Silva's (2017) book *Racism Without Racists*. Although he uses this term ironically in order to highlight the hypocrisy and/or lack of critical self-awareness of bigots, I use the term here quite literally: racism may exist with or without any regard to personality or motive, which is consistently borne out in research on implicit social cognition (Greenwald, Poehlman, Uhlmann, & Banaji, 2009).

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the sociology of punishment. First, it is a truly general theory, meant to address variation of law in all times and places (1976; 1995). In fact, Black's original theoretical statement (1976) was inductively formulated out of broad historical and anthropological evidence. Various edited volumes (Black, 2014; Black & Mileski, 1973) have since seen the theory deductively applied to temporal and geographical variations in the style and scope of law. Black presents a theory apparently devoid of ethnocentrism and applicable to all societies, unlike some of the most commonly cited works in the sociology of law and punishment, which apply to just one or two nations (e.g., Alexander, 2012; Blalock, 1967; Foucault, 2012; Garland, 2001; Rothman, 1971). Relatedly, the generality of Black's theory, owing to the pure sociology approach, avoids the moralizing and proselytizing evident in other theories of incarceration (e.g., Alexander, 2012; Foucault, 2012; Garland, 1990), providing arguably greater objectivity. It's scope—intending to explain every major dimension of social variation (next section)—synthesizes various sociological schools into a single theory, proving to be simultaneously comprehensive and parsimonious.

Five Dimensions of Social Life.

The Behavior of Law attempts to explain variation in governmental social control.[5] Black argues that law is a quantitative variable; that is, 'law' is quantifiable and measurable. This itself was an original consideration; prior to this theory, law had not been considered something that could be quantified. The application of law can range from very little to very much, and this may include whether an arrest is made, whether charges are filed, whether a case is litigated, and whether a conviction is obtained. Furthermore, the quantifiability and variability of law "applies

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[5] Black suggests that pure sociology, as a scientific approach, may be applied to variation all forms of social life, including art and science (1976; 1995), and the approach has recently been applied to homicide (Cooney, 2009) and moral conflict (Black, 2011).

to the severity of punishment defined in each setting: the greater a fine, *the longer a prison term*, the more pain, mutilation, humiliation, *or deprivation inflicted, the more law*" (1976, p. 3, emphasis added). As a general theory, Black emphasizes that his theory may be applied to all forms of law—administrative, civil, criminal, and others—and the style and scale of penal practice falls clearly within its scope. Therefore when he speaks of an increase in law, it can be understood to implicate in increase in punishment, including incarceration. Sending more people to prison, or sending them for longer terms, are examples of increases in the volume of law.

Black argues that there are several variable dimensions of social life: stratification, morphology, culture, organization, and social control. Each of these dimensions is quantifiable and variable. Each has a "location" in time and space. So, for instance, each individual or society has a quantifiable location in the hierarchy of wealth, and this location varies over time as well as between people and nations. The application of law occurs at a particular intersection of each of these dimensions. Presumably, if one were to know where an individual or a society measured on each of these dimensions, one could predict some behavior of law—including the quantity of punishment. These dimensions largely reflect major sociological paradigms regarding formal social control. In the following five sections I describe each of Black's proposed dimensions of social life according to his formulation, as well as their relationship to law and punishment.

Stratification refers to the vertical, hierarchical dimension of social life. It implicates the role of economic resources in the exercise of power. Consistent with centuries of sociological theory, *The Behavior of Law* argues that punishment varies with social stratification, which Black concisely defines as "inequality of wealth" (Black, 1976, p. 11). Stratification is proposed to operate at both the individual and macrosocial levels: that is, law will be greater given a high

level of inequality between two parties to a dispute, such as victim and offender (see pp. 21-24); and punishment will be more common in societies characterized by widespread economic inequality. This is summarized in his first hypothesis, "Law varies directly with stratification (p. 13).

In addition to the effect of economic inequality on the volume of law, Black also notes the importance of "vertical location"—that is, a nation's total economic resources. He writes, "Apart from the distribution of wealth among its inhabitants, the total wealth of a society or community predicts the quantity of its law: the more wealth it has in relation to other societies or communities, the more law it has" (1976, p. 20). He illustrates this with anthropological evidence from Polynesia; the poorest Polynesian islands were characterized almost exclusively by informal social control within families; the wealthiest were characterized by more law, stricter punishment, and concentrated authority within a ruling party. The relationship between a society's wealth and punishment system is also somewhat natural and intuitive, given that the exercise of law—particularly the practice of incarceration, which is among the more costly applications of the law—requires substantial financial capital. Donald Black thus hypothesizes, "Law varies directly with rank" (p. 17), and this applies equally to individuals and societies. We would expect that more wealthy societies—higher in "rank" of the distribution of wealth—can afford to incarcerate a greater portion of its offenders.

Morphology refers to the "horizontal" dimension of social life, defined as "the distribution of people in relation to one another, including their division of labor, networks of interaction, intimacy, and integration" (Black, 1976, p. 37). It represents social distribution, differentiation, and integration and is characterized by some degree of specialization and

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interdependence. People may be distributed, differentiated, and integrated in many different ways, including by ethnic identity, work roles, family structures, and so on. And within these various roles, people have various levels of independence and interdependence. In simple societies, people are mostly alike, perform similar roles and jobs necessary for self-sufficiency, and exchange little between themselves. Complex societies, such as advanced industrial nations, present a great deal of social differentiation and specialization: people work in highly specialized jobs, exchange goods and services with a wide variety of others, and develop complex networks of interaction and interdependence. These observations are similar to those of Durkheim's (2014) regarding mechanical and organic societies, wherein the division of labor in complex modern societies accounts for personal and interpersonal maladjustment that is functionally remedied by law. Donald Black provides some elaboration, connecting the concept of social integration to some of his earlier work involving personal intimacy and invocation of law (e.g., (Black, 1970). People's interpersonal contacts vary from intimately personal and frequent to coldly impersonal and infrequent, encapsulating both physical and emotional interconnectedness—or complete segregation. For instance, people are often segregated along racial or ethnic lines, living completely independently (Black, 1976, p. 43).

This relational distance predicts the nature and scope of formal social control. More specifically, "The relationship between law and relational distance is curvilinear" (p. 41) and "The relationship between law and differentiation is curvilinear" (p. 39), representing an inverted-U. There is relatively little law (fewer complaints, arrests, suits, or penalties) in more intimate societies, where people are homogenous, undifferentiated, and demonstrate strong kinship. There is also relatively little law in diverse societies where people are fully integrated,

communal, and symbiotic. In between—where groups are heterogeneous, differentiated, and have regular exchanges, but are not symbiotic—punishment and other practices of law will be greatest. The peak of this curve is characterized by heterogeneity but lacks integration; it implies groups who regularly interact, but not as kin. In such places, at the peak of this curve, Black's theory would predict the highest rates of formal social control and incarceration.

Culture speaks to the symbolic aspect of societies, and includes "what is true, good, and beautiful" (p. 61). It spans ethics and values, science and technology, religion and art. While these subjects may seem rather disconnected at first, they are similar insofar as they all represent systems of knowledge. Culture, as characterized by Donald Black, comprises different ways of knowing, and corresponding means of expression and understanding. Religion represents one such knowledge structure; art communicates many understandings of human experience; and so, too, science provides a system of interpretation. Abstraction and symbolism characterizes culture, according to *The Behavior of Law*. Culture is quantifiable, to the extent that some social collectives are 'rich' in culture, and are culturally complex. Others are culturally simple, homogenous in their symbolic structures: "only one language, one religion, one theory of anything" (p. 63). Tribal societies, simplistic and homogenous in thought and style, have the lowest levels of law, but diverse modern societies, the most. Black succinctly hypothesizes, "Law varies directly with culture" (p. 63).

Black emphasizes science, technology, and education in particular as indicative of culture. Literacy, science, and empiricism allow ideas to flourish, and lead to growth in the symbolic aspect of life. As Black notes,

> If a society is literate, if it has many subcultures, beliefs, monuments or large buildings, an elaborate
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> technology for the production of food or anything else, if it has science in the modern sense, it has law. And

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if this symbolic life grows over time, so does law. Hence, in the short term, legislation and litigation increase during periods of creativity or other kinds of cultural effervescence. In Europe, for instance, law grew especially fast during the Renaissance, during the late eighteenth and early nineteenth centuries. (Black, 1976, p. 64).

According to *The Behavior of Law*, science constitutes a way of knowing, a symbolic, cultural understanding of human experience; where there is more science—more culture—there is more law.[6]

Although Black emphasizes empirical knowledge obtained in science, technology, and education, he also notes that religion is an important aspect of culture, providing another framework for understanding and interpreting the world. Simple societies, such as nomadic tribes, have only one monolithic folklore. Advanced societies, on the other hand, may have many religions, and within each of these many complex ideas and interpretations. Where there are more religions, and more religious ideas, Black's theory predicts more law. The same is true where there are more languages, more arts, and various other symbolic expressions or interpretations of human understanding. Therefore, culture is a complex, multi-faceted dimension that encompasses all of the various forms of expression. Operationalizing and quantifying culture has long been challenging (Adkisson, 2014; Esmer & Pettersson, 2007), and

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[6] Regarding the symbolic cultural dimension, Black also makes observations that are not clearly distinguishable from his comments on morphology. This is because social differentiation and relational distance (morphological characteristics of integration and diversity) as well as cultural distance (a symbolic characteristic of expression and understanding) are both influenced by ethnic heterogeneity. Even the functional form of this relationship is proposed to be the same, as when Black argues "The relationship between law and cultural distance is curvilinear" (p. 74; compare to p. 39 & p. 41). In his chapter on culture, he notes that ethnically homogenous cultures have relatively little law. However, ethnic pluralism leads to more frequent and more complex disputes, leading to more formal social control. But this pattern eventually reverses: "people once alien increasingly share a larger world and a larger culture" (p. 78). Therefore, ethnic heterogeneity appears to initially predict greater use of penal sanctions, eventually reversing as ethnic differences are integrated into a more symbolically homogenous collectivity. Without belaboring the point, it is worth once again drawing parallels to racial threat hypotheses, which make substantially similar claims: increasing minority populations are initially threatening, becoming less so as they come to enjoy both assimilation and political power (Blalock, 1967; Horowitz, 2001).

Black has made the matter no simpler by incorporating multiple loosely-related elements into a single overarching dimension. Choosing those which are most relevant to legal punishment—and those readily measured—may require more conceptual refinement than Black provides, and a matter addressed in later sections of this study.

Organization refers to "the capacity for collective action" (Black, 1976, p. 85). People organize into groups of different kinds: groups of friends, hunting parties, civic associations, hobby clubs, learning societies, political organizations, and so on. Organization varies both within and between groups, with some exhibiting greater membership, continuity, participation, administration, influence, and authority.

Black emphasizes the influence of government organization on law and social control. He notes that "a society may be more or less organized as a state," (1976, p. 86), and the volume of law is directly related to this central organization. Black presents broad historical evidence that law increased during disruptive periods demanding social cohesion, collective action, and social control. For instance, law increases substantially during periods of war, even in democracies (de Tocqueville, 1840) and stateless societies (Sahlins, 1961); increases during rapid public works projects like irrigation (Wittfogel, 1957) and roadbuilding (Karst, 1973); expands during collective food-production efforts, both in hunting (Lowie, 1948) or agriculture (Nimuendajú, 1956); and rises during responses to natural disasters (Nohl, Clarke, & Others, 1961). In short, formal social control increases in times and places where there is an expectation for uniform action or cause, and wherefore formal mechanisms are leveraged to compel widespread compliance.

The positive association between organization and law is not limited to governments, according to Black. Law increases according to the number and structure of private groups within and across societies, as well. This explains, in part, why modern Western societies have comparatively more law than developing and tribal nations. A greater number of organizations may contribute to a greater variety of disputes, increasing the need for formal social control. Furthermore, the collective strength of organizations contributes to a greater exercise of power, which is at least in part regulated through formal rule of law.

Informal social control, the normative dimension of social life, governs the control of deviant behavior, delineating acceptable behaviors and responding to unacceptable conduct. The various manifestations of law, including the issuance of citations, the filing of civil lawsuits, the arrest of assaulters by the police, and the incarceration of criminal rule breakers are all examples of social control. But so too are "etiquette, custom, ethics, bureaucracy, and the treatment of mental illness" (p. 105). Social control consists of the standards of conduct that people are held to by others. Social control may be formal—as with arrest or incarceration—or it may be informal—as when families and schools sanction juvenile delinquency. Informal social control may entail as little as a reproachful look, or as much as lethal vigilantism.

Donald Black argues that "Law varies inversely with other social control" (p. 107). Therefore, in settings where families, churches, peer groups, schools, communities, employers, and other non-governmental social institutions exercise normative influence and control, law is seldom necessary nor invoked. In the presence of such informal social control, "people obey the expectations of others" (p. 106), making legal intervention unlikely. The extent to which a person

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obeys the expectations of others can be understood as "normative location" or "respectability" (p. 111).

Informal social control is represented by the internalization of norms and values which are established in a process of socialization. This socialization predominantly occurs informally—through parents, other family members, peers, teachers, acquaintances and others. As collective norms are widely internalized, people are less likely to violate common standards of conduct, and also less likely to invoke law to manage violations of such expectations. On the other hand, where people widely disagree about the standards of conduct, or hold these standards less sacrosanct, the more likely people are to disregard or violate the expectations of others; furthermore, the formal sanctions compensate for the failure of informal social control to produce value consensus. In short, Black's proposed inverse relationship between law and informal social control simply asserts that the volume of law (including punitive sanctions) will be greater where people have failed to internalize a common set of values of acceptable conduct. Black implies that this occurs because (a) by definition, the lack of normative consensus means various types of behavior are considered and labeled 'deviant,' and (b) the failure of informal controls necessitates a formal (i.e., legal) system of conflict resolution.

Empirical Research

As of October 2018, Google Scholar reports that *The Behavior of Law* has been cited over 2,300 times since its publication. Nonetheless, it may surprise some to learn that very few of these consist of explicit, quantitative, empirical tests of the theory. In fact, Black's theory of law appears to have been subjected to fewer than 40 systematic tests. A "literature search" conducted in 2008 by Joseph Michalski claimed to have identified 45 such studies, wherein

71.1% found strong support, 11.1% found mixed support, and 17.8% found weak or no support. However, Michalski's failure to provide a list of these works leaves his claim in question (Michalski, 2008).

Donald Black argues that widespread support exists for his theory. First, despite few empirical tests, he points to a vast body of "naive evidence": studies which are not explicitly designed to test *The Behavior of Law*, yet which nonetheless appear to provide evidence in favor of one or more of its propositions (Black, 1995). In fact, Black argues that this evidence is "arguably even superior" to studies explicitly intended to test his theory, since it lacks bias toward or against the theory. Second, Donald Black and colleagues have assembled edited volumes which present anthropological evidence and case studies purportedly validating the theory (Black, 2014; 1984; Black & Mileski, 1973; Horwitz, 1990). Nonetheless, the evidence Black marshalls in his favor is up for debate, because little of it consists of a systematic attempt at theory falsification; as one critic notes:

> [E]ndlessly pointing to white swans does nothing to prove that all swans are white. The scope of Black's examples, while intended to impress the reader, actually undermines their effectiveness. The sheer size of his sampling frame raises questions about the extent to which his results are an artifact of opportunistic selection, since, given the entirety of history and geography to draw from, one could likely produce copious examples consistent with almost any point they wished to make (Marshall, 2008, p. 219)

To avoid similar criticisms, the literature search presented here was conducted with two restrictions. First, the study must employ some quantitative analysis. While qualitative research methods are indispensable and provide a number of distinct advantages (Lichtman, 2013), their shortcomings are also well known: limited and purposive samples threaten generalizability, and researcher bias is unavoidable, being built in to the evaluative method itself (Seawright, 2016). Second, the study must explicitly test Donald Black's theory of law (at least partially); so-called

"naive evidence" was not considered. While by no means a guarantee of success, this ensures that the research at least attempted to conceptualize, operationalize, and measure social constructs in a manner consistent with the theory. These two restrictions provide more assurance that the studies under consideration were legitimate, objective attempts at theoretical falsification, the minimum standard of science (Popper, 2005).

Thus restricted, a literature search yields just 34 direct tests of *The Behavior of Law*. Before reviewing these in more detail, it is worth generalizing this body of research; this research is summarized in Appendix A. Despite the theory's foundation in the sociology of law, just seven of these studies are macrosocial, as most tests of the theory analyze individual-level phenomena. Notwithstanding the theory's broad historical and anthropological evidence, few studies consider evidence outside of modern America: 25 studies focus exclusively on U.S. samples; eight apply the theory within another nation or territory; and just one examines cross-national variation of law.[7] Fewer than half of the studies incorporate all five social dimensions that purportedly predict the quantity of law—a major specification problem that will be addressed in a later section. Furthermore, not a single study evaluates Black's proposed curvilinear relationships, presenting another analytic shortcoming. Finally, these studies attempt to explain rather different forms of governmental social control. The most common dependent variable in tests of *The Behavior of Law* is the reporting behavior of victims or witnesses (11 studies), followed by court-related decisions (prosecutions, pleas, verdicts, and/or sentences—six studies), police clearance rates

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[7] Admittedly, the search was restricted to English-language studies; additional international or cross-national studies may plausibly be found in foreign-language journals.

(five studies), police discretion (five studies), hypothetical scenario-based respondent decisions (four studies), lawmaking (two studies), and administrative sanctions (two studies)[8].

Seven tests have examined *The Behavior of Law* from a macrosocial perspective[9]. Borg and Parker (2001) use nine indicators spanning five dimensions[10] and find statistically significant relationships between each dimension and the homicide clearance rate across large U.S. cities, patterns observed across Canadian cities as well (S. K. Wong, 2010). Other macro-level studies have applied the theory to the number of codified laws and the number of prosecutions, but find little support. Lu and Miethe (2007) find that morphology is the only variable that predicts the number of provincial Chinese laws protecting women. Similarly, Wooditch (2012) finds no evidence that *The Behavior of Law* predicts whether or not a nation passes laws against human trafficking. Only morphology appears to explain the number of human trafficking prosecutions cross-nationally (2012), and only organization and culture can explain prosecutorial decision making in Taiwan (Kuo, Longmire, Cuvelier, & Chang, 2010).

Only two studies utilize *The Behavior of Law* to predict incarceration rates, and they are of special relevance to the present study. In perhaps the most faithful examination of the theory to date, Lessan and Sheley (1992) apply *The Behavior of Law* to several forms of formal legal activity, including police expenditures, arrest rates, imprisonment rates, and community supervision rates. They do so with time-series data from the U.S. between 1948 to 1985,

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[8] Some studies examined several outcome variables, which is why the sum reported here (37) is greater than the total number of studies presented earlier (34).

[9] Individual-level studies are of limited applicability to the present study; apart from problems of conceptualization and specification, discussed later, the results if micro-level empirical research on Black's theory of law is not presented here.

[10] Borg and Parker use several measures, covered in more detail in other sections of this chapter; for stratification: the racial stratification/segregation index; for morphology: %divorced; %unemployed; and residential mobility; for culture: % with high school degree; for organization: education expenditure; welfare expenditure; % vacant houses; for informal social control: homicide rate.

examining the influence of changes in the labor-capital income ratio (stratification), the division-of-labor index (morphology), the religious-heterogeneity index (culture), years the nation was at war (organization), and the homicide rate (reversed proxy for informal social control). They find rather little support for Black's theory, suggesting that changes on the five social dimensions did not predict changes in formal government control. In the second application of Black's theory to incarceration rates, Massey and Myers (1989) find no support for the proposed inverse relationship between informal social control (extralegal lynching) and formal social control (incarceration and execution) in Post-Reconstruction Georgia; in fact, lynching and formal sanctions rose simultaneously. However, Massey and Myers do not account for the four other social dimensions, or any other predictors for that matter.

It is worth noting that both of these studies spanned periods of substantial expansion and restructuring of American punishment systems: that is, the start of the Mass Incarceration era in the 1970's for Lessan and Sheley's study; and the substitution of slavery with forced convict labor in the post-Civil War South for Massey and Myers' study. It is worth considering whether these periods are simply geographic (U.S.-bound) and temporal (period-bound) outliers among the broad social processes that Black describes as a much more general phenomenon. In all, the relative lack of macrosocial applications of *The Behavior of Law*, the paucity of studies which have specifically examined incarceration rates as a measure of law, the geographic and historical contingencies during the locations and periods under study, and the analytic shortcomings suggest that more work is needed in evaluating the suitability of *The Behavior of Law* as a sociological theory of incarceration.

Conclusion

Despite the apparent lack of evidence for Black's theory, it may be premature to dismiss *The Behavior of Law* at this time. The following chapter elaborates many of the problems with extant research on *The Behavior of Law*, not the least of which are the wildly different measures used to conceive each of the five dimensions of social life. I begin with issues of conceptualization and operationalization. Then, I discuss levels of analysis, and why a nearly exclusive micro-level application of the theory is misguided. Finally, I introduce several analytical misspecification errors that seriously threaten the theory.

CHAPTER 3:
MEASURING BLACK

The previous Chapter presented Black's *The Behavior of Law* and the empirical evidence to date. Theory tests have demonstrated rather underwhelming support for the theory. Nonetheless, those tests suffer from several shortcomings that deserve further attention. In this chapter, I discuss three overarching concerns with the extant research: conceptualization/operationalization; level of analysis; and misspecification. I begin with a review of conceptualization/operationalization, and how other theories in the sociology of punishment bear conceptual and theoretical overlap that may better inform the measures used.

Conceptualization and Operationalization

A substantial problem with research on *The Behavior of Law* is the lack of consistency or consensus regarding the concepts and measurements (a problem not limited to the macrosocial tests). In this section, I briefly review the wide-ranging indicators used to measure each of Black's theoretical constructs. I do this to illustrate that dismissal of the theory is premature, and to emphasize the importance of theoretically-consistent measures, which may be informed by other theories in the sociology of punishment. While individual-level studies are of limited applicability to the present study, they demonstrate the same conceptual problems and inconsistencies that represent that state of the theory's tests more broadly; for this reason, they are included here.

Outcome: Volume of Law.

Law—formal social control—has been operationalized as many different types of distinct legal phenomena in tests of Black's theory: police expenditures (Lessan & Sheley, 1992); homicide clearance rates (Borg & Parker, 2001; S. K. Wong, 2010); number and "adequacy" of statutes (Lu & Miethe, 2007; Wooditch, 2012); prosecution rate (or count) (Kuo et al., 2010; Wooditch, 2012); and rates of probation, incarceration, or execution (Lessan & Sheley, 1992; Massey & Myers, 1989). Unlike the individual-level studies, which mostly focus on victim invocation of law or police decision making, most macrosocial tests focus on some measure of punishment, rather than victim reporting or official complaint-taking (the most common dependent variable among individual-level studies).

Black has defined law as "governmental social control...such as legislation, litigation, and adjudication" (Black, 1976, p. 2). Importantly, Black has argued that law can be quantified by "*the severity of punishment* as defined in each setting: the greater the fine, *the longer the prison term*, the more pain, mutilation, humiliation, or deprivation inflicted, the more law" (Black, 1976, p. 3). Punishment has been broadly defined as "the legal process whereby violators of the criminal law are condemned and sanctioned in accordance with specified legal categories and procedures...composed of interlinked processes of law-making, conviction, sentencing, and the administration of penalties" (Garland, 1990, p. 17). Given that imprisonment has become one of the most prevalent and severe exercises of law, it deserves further consideration as a measure of the "volume of law" that Black describes. This is especially true given that only two studies have considered it as an outcome in tests of Black's theory, and both were considered exclusively in the U.S. during historical anomalies (reconstruction and the prison boom).

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Measuring Stratification.

In macrosocial studies, stratification has been measured using indicators as varied as economic inequality (Kuo et al., 2010; S. K. Wong, 2010; Wooditch, 2012), labor-capital income ratio (Lessan & Sheley, 1992), gross domestic product (Lu & Miethe, 2007), industrialization (Lu & Miethe, 2007), poverty rates (S. K. Wong, 2010), percent minority (S. K. Wong, 2010), and segregation (Borg & Parker, 2001). Six of the seven macrosocial tests measure the dimension of stratification; of these, two find support (Borg & Parker, 2001; S. K. Wong, 2010) and four find no support at all (Kuo et al., 2010; Lessan & Sheley, 1992; Lu & Miethe, 2007; Wooditch, 2012). Wong's 2010 study finds evidence that income inequality, the relative number of low-income households, and the size of an aboriginal population predict various police clearance rates in Canada. Similarly, Borg and Parker (2001) find evidence that the black-to-white income disparity, black-to-white education disparity, black-to-white unemployment rate, and black-to-white segregation rate predict homicide clearance rates in U.S. cities. However, Kuo and colleagues (2010) find no evidence that wealth disparity predicts prosecutorial decision-making in Taiwan; Wooditch (2012) finds no evidence that income inequality relates to antitrafficking laws; and Lu and Meithe (2007) similarly find that GDP and national industrialization had no effect on gendered laws in China. Lessan and Sheley's 1992 study reveals that the labor-capital income ratio did not correspond to changes in police expenditures, arrests, incarceration rates, and community supervision rates in the U.S. between 1948 and 1985. The labor-capital income ratio measure that they use consists of employee wages divided by corporate earnings, providing some indication of the relative share of corporate productivity that is returned to workers, and is considered a measure of class inequality. Given

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the variety of measures used to represent Black's concept of stratification—as well as the variety of outcomes it has been used to predict—further examinations are warranted.

The inconsistency in operationalizing stratification in individual-level studies—which consist of most tests of Black's theory—is even more pronounced, and includes race, gender, age, and income (Avakame, Fyfe, & Mccoy, 1999; Copes, Kerley, Mason, & Van Wyk, 2001; Doyle & Luckenbill, 1991; Felson & Pare, 2005; Gottfredson & Hindelang, 1979; Kruttschnitt, 1980; Litwin, 2004; Mastrofski, Reisig, & McCluskey, 2002). It hardly needs stating that, at both levels of analysis, these measures are hardly consistent with each other, let alone the concept of stratification. This is perhaps due to a fundamental misreading of Black, who rather succinctly defines stratification as "any uneven distribution of the material conditions of existence" (1976, p. 11), but acknowledges that "the mechanisms of distribution vary…depending upon how they were born, their age, sex, race, place of birth, or lineage" (pp. 11-12). He provides ample evidence that this has been so, but that *it is temporally and geographically contingent*. In conditions of slavery, wealth is distributed unequally between slaves and owners, and this has often been along racial or ethnic boundaries. Patriarchal societies often distribute resources unequally between men and women, but this varies both within and between cultures. In some traditions, age is intimately tied to the distribution of resources. In each of these examples, Black demonstrates that race, gender, and age may predict economic stratification, but he never suggests they are direct indicators of inequality, except in the most extreme circumstances—which he uses merely for illustration.

Many sociologists have argued that the form and scale of punishment is directly related to socioeconomic arrangements. Social structure, at the macro scale, refers generally to the

economic systems and institutions that pattern relationships between social groups (Merton, 1968). While social structure emerged as an effort to explain crime by the early 20th century, Rusche and Kirchheimer (2003) were among the first to extend the economic institutional arrangement to explain punishment. Given Rusche and Kircheimer's emphasis on class conflict, their manuscript has been branded "the landmark Marxist account" of formal social control and incarceration (Braithwaite, 1980, p. 192); Marx himself actually had relatively little to say about crime and punishment (Vold, Bernard, Bernard, & Snipes, 2002).

Using broad historical evidence from the Middle Ages to the twentieth century, Rusche and Kirchheimer argue that the evolution of criminal punishment closely aligns with the prevailing political economy. Feudalism, mercantilism, and capitalism differentially influenced the nature of relationships between the wealthy and poor. Prior to mercantile exchange, the criminal law was largely reserved to resolve disputes between feudal lords. Emerging trade systems, however, led to criminalization of the lower classes in order to control the products of exchange (Chambliss, 1968) as well as the producers of goods, i.e., the labor force (Chambliss, 1964). The nature of punishment aligns with the nature of the economic system: in slave economies, slavery emerges as a prevailing mode of punishment; in industrial economies, prison labor; and so too, criminal fines require money economies (Rusche & Kirchheimer, 2003).

Rusche and Kirchheimer observe that the nature and scale of criminal sanctions correspond to the relative "worth" of human beings as defined by market forces. Where labor is in short supply, wages increase, which also increases the relative "value" of individuals (and the relative cost of individuals to those who control the mode of production). In such times of high labor demand, wages, and corresponding human "worth," incarceration rates decrease. In

modern capitalist countries, keeping criminals out of prison also increases the available pool of workers, driving wages down. Conversely, it is less "costly" to incarcerate a greater share of individuals when there exists a labor surplus; wages are low, each man is worth "less," and people are much more expendable. Furthermore, imprisonment can be expected to increase during lean economic times because the inducement to crime is relatively greater, and so too the deterrent effect of incarceration must also be greater.[11]

Numerous studies have examined this relationship between surplus value and incarceration rates, what has come to be known as the "Rusche and Kirchheimer hypothesis" (Melossi, 2003). In perhaps the first direct test of this theory, Jankovic (1977) found that unemployment rates predicted prison sentences, even when controlling for crime. That same year, Greenberg published a study which indicated that oscillations in prison sentences are predicted in large part by cyclical unemployment rates (Greenberg, 1977). In an evaluation of dozens of research studies since then, Chiricos and Delone (1992) find that surplus labor is a significant predictor of prison populations in a bit over half (60%) of reported relationships. The influence of surplus labor on imprisonment rates may vary by U.S. state (Marenin, Pisciotta, & Juliani, 1983) or country (Melossi, 2001), suggesting contextual contingencies, a point underscored by a more comprehensive study of over 148 countries finding no consistent relationship between unemployment and punitiveness (Neapolitan, 2001). More recent and sophisticated models, furthermore, suggest that any relationship between bear economies and

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[11] Rusche and Kirchheimer's primary argument is that prison conditions are influenced by the principle of less eligibility: that is, the experience of punishment (prison) must be worse than the living conditions of the lower classes from which prisoners are drawn if they are to have any deterrent effect. Therefore, prison conditions are much less favorable during periods of widespread and severe poverty, and improve in proportion to general economic wellbeing. While valuable insights, these propositions bear little on imprisonment *rates* and rather more on prison *conditions*. Therefore, I do not review these arguments, and focus instead on how their arguments relate to the scale of incarceration.

incarceration binges is more directly attributed to neoliberal political orientations which precede them and tend to value corporatism and dehumanize individuals, at least among economically advanced nations (Sutton, 2004). In sum, there is evidence that incarceration rates are related to issues of class and labor.

Critical theorists since Rusche and Kirchheimer have further elaborated Marx's (1867) ideas about political economy, emphasizing that economic and political institutions are fundamentally inseparable. For these theorists, social structure directly contributes to class conflict and the exercise of formal social control. Capitalistic economic arrangements naturally produce tension between the lower classes (laborers) and the wealthy classes (employers), and these conflicts are frequently "resolved" by the economically powerful classes through the coercive authority of government, which they too control (Quinney & Shelden, 2018). Where economic inequality is greater, so too are ideological class differences, as well as the differential of power, which becomes as similarly concentrated as wealth. The criminal justice system, including imprisonment, is a tool used by the wealthy to control an underclass which threatens to disrupt existing social arrangements that benefit the wealthy and powerful (Chambliss & Seidman, 1971). Where societies are more equal in economic arrangements, conflict is less polarized, and power is more diffuse. These statements strongly suggest that a society's level of economic inequality predicts both the range of acts officially proscribed (including incarcerable offenses) as well as the severity of punishment applied for their commission (including sentence lengths), thus influencing incarceration rates (Garland, 1990). Therefore, economic inequality, not labor surplus, may be more relevant to incarceration rates, perhaps because it is more deeply rooted within the social structure and less sensitive to volatile short-term markets.

Research in both the U.S. and worldwide provides support for these arguments. In the U.S., property offenders are more likely to be imprisoned in the most economically unequal states (Jacobs, 1978). Time-series analysis in the U.S. also suggests that economic inequality, but not unemployment, significantly increases prison admissions (Jacobs & Helms, 1996). There is also evidence that economic inequality has become more salient to U.S. incarceration rates in more recent decades (Phelps & Pager, 2016).

Internationally, and with few exceptions, there is substantial evidence that economic inequality is associated with incarceration rates. Since 1986, at least nine studies, with sample sizes ranging from 6 to 218 nation-states and territories, have indicated that there is a strong, significant relationship between economic inequality and imprisonment (Healy, Mulcahy, & O'Donnell, 2013; Killias, 1986; Krus & Hoehl, 1994; Lappi-Seppälä, 2008; Lappi-Seppälä, 2010; Miller, 2013; Van Kesteren, 2009; Wilkins & Pease, 1987; Wilkinson & Pickett, 2007), with only two indicating no such relationship (Jacobs & Kleban, 2003; Neapolitan, 2001). Additionally, decommodification (which insulates the lower classes from both poverty and labor market fluctuations) may be associated with lower incarceration rates (Lappi-Seppälä, 2008; Weiss & MacKenzie, 2010). As Marxist and conflict scholars would suggest, there is also evidence that the relationship between inequality and the scale of incarceration is most pronounced in economically advanced capitalist nations, where class conflict would be most acute (Lappi-Seppälä, 2010). Therefore, the wealth of each nation, as well as the distribution of that wealth within it, are important predictors of the carceral state.

Anomie theories further emphasize important interactions between various economic structures and institutions. Messner and Rosenfeld's (2007) institutional anomie theory (IAT) is

primarily considered a theory of crime, but it makes claims relevant to punishment as well; indeed, they explicitly argue that "one of the most promising aspects of the theory is the possibility of integrating explanations of crime and punishment within a single conceptual framework" (p. 179). They argue that "the U.S. *response* to crime is also the result of many of the same cultural and social conditions that give rise to high crime rates" (2007, p. 93, emphasis in original). Extending Merton's (1968) arguments, Messner and Rosenfeld suggest that crime and punishment may be the result of over-emphasized economic institutions and goals, and a simultaneous under-emphasis of noneconomic institutions, where social priorities emphasize pecuniary outcomes over other concerns and institutions. Such social arrangements limit what outcomes constitute "success," especially for those who are economically marginalized. Bjerregaard and Cochran (2008) refer to "want amid plenty," with anomie being most acute in nations with *both* high degrees of wealth *and* high measures of economic inequality. Wealth is indicative of advanced capitalism and a prioritization of economic goals (often at the expense of noneconomic priorities), while inequality is indicative of limited opportunities for all to achieve such goals. The first study to apply IAT to punishment finds evidence among 41 nations that institutional imbalance and economic structures explain cross-national variation in incarceration rates (Weiss, Testa, and Renno Santos, 2020).

Measuring Morphology.

Of 34 tests of *The Behavior of Law*, thirteen do not explicitly attempt to operationalize or measure morphology. Five attempt to identify the nature of a victim and offender relationship—for example, whether they were strangers, acquaintances, or intimates (Baumer, 2002; Copes et al., 2001; Felson & Pare, 2005; Lee, 2005; Myers, 1980). Seven studies use some

indicator of familial intimacy of the victim or offender alone, such as marital status, or number of children (Doyle & Luckenbill, 1991; Geiger-Oneto & Phillips, 2003; Gottfredson & Hindelang, 1979; Graham, Borg, & Miller, 2013; Kuo, Cuvelier, Sheu, & Chang, 2012). Others have used some measure of integration with the working world, such as employment status (Doyle & Luckenbill, 1991; Graham et al., 2013; Kerstetter & Van Winkle, 1990; Kruttschnitt, 1980). Other measures include race (Kan & Phillips, 2003; Kerstetter & Van Winkle, 1990), education (Geiger-Oneto & Phillips, 2003), residential mobility (Borg & Parker, 2001; S. K. Wong, 2010), and military service (Geiger-Oneto & Phillips, 2003). Five of the seven macrosocial studies have attempted to operationalize some measure of morphology. Measures have included the divorce rate (Borg & Parker, 2001; S. K. Wong, 2010), unemployment or (sometimes gendered) labor force participation (Borg & Parker, 2001; Lu & Miethe, 2007; S. K. Wong, 2010; Wooditch, 2012), residential mobility (Borg & Parker, 2001; S. K. Wong, 2010), or the division-of-labor index (Lessan & Sheley, 1992). Among this list, evidence has been found for residential mobility (Borg & Parker, 2001; S. K. Wong, 2010), female labor participation (Lu & Miethe, 2007), and the divorce rate (Wong, 2010; but see Borg and Parker, 2001). That such a diverse list of indicators all purport to measure what Black defines as "the distribution of people in relation to each other" (p. 37) demonstrates how elusive morphology is to conceptualization and operationalization.[12] A measure of morphology requires a careful consideration of the ways people self-identify and socially differentiate; race and ethnicity is among the most compelling.

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[12] This is made more difficult given that Black argues that morphology is itself composed of other latent constructs, including differentiation (p. 38) and intimacy (or relational distance, p. 40). Furthermore, it appears to capture a normative aspect as well, given that "radial location" and "radial direction" are in reference to a "center of social life", which is opposite "marginality".

Minority conflict theories suggest that governments become more punitive in response to the increasing population and/or power of minority groups which threaten the established hegemony (Blalock, 1967). Racial threat may operate in three distinct forms: economic threat; political threat; and symbolic threat. Under economic threat, majority populations may exert formal control over minorities due to increased competition for scarce material resources, such as jobs. Under political threat, social control is exerted in order to protect political influence and preserve the existing concentration of power. Symbolic threat occurs when crime and deviance are attributed to minorities; the majority group exerts greater criminal justice control upon minority citizens in order to minimize their perceived threat to the moral order. Irrespective of the mechanisms involved, all three flavors of racial conflict theory predict more formal social control as the composition of the population becomes more heterogeneous. However, this relationship may be nonlinear: once racial or ethnic minorities near population equivalence with other groups, their mobilization of resources and political power should also approach equivalence, with no single group able to dominate a punitive legislative agenda (Blalock, 1967; Horowitz, 2001).

Research from the U.S. provides ample support for racial threat hypotheses. For instance, U.S. police expenditures tend to be higher in areas with a greater percentage of black residents (Huff & Stahura, 1980; Jackson & Carroll, 1981; Kent & Jacobs, 2005). There is also evidence that retributive death (both capital punishment and extrajudicial lynching) is more often practiced in U.S. states with higher African-American populations (Baumer, Messner, & Rosenfeld, 2003; Jacobs & Carmichael, 2002, 2004; Jacobs, Carmichael, & Kent, 2005). Micro-level sentencing practices appear to be highly contingent upon minority population composition in the U.S.

(Caravelis, Chiricos, & Bales, 2011; Crawford, Chiricos, & Kleck, 1998; Feldmeyer & Ulmer, 2011; Johnson, Ulmer, & Kramer, 2008; Ulmer & Johnson, 2004). Time-series data in the U.S. indicates that demographic changes are frequently associated with changes in imprisonment rates (Jacobs & Carmichael, 2001; K. B. Smith, 2004) but see (Jacobs & Helms, 1996). Finally, studies also indicate that as minority populations increase in size to a substantial portion of the population, they are able to mobilize resources and reverse punitive crime control policies, providing evidence of a nonlinear relationship (Keen & Jacobs, 2009; Kent & Jacobs, 2005; Stults & Baumer, 2007).

Cross-national research is much more limited. There is reason to question whether minority threat theories would apply equally to other nations, especially since America has a rather unique racialized history. In a study of 11 developed Western nations, only the U.S. demonstrates a relationship between minority population and police expenditures (Kent & Jacobs, 2004). However, Europeans tend to express more punitive attitudes when they reside in nations with greater ethnic diversity, which is at least partially attributable to intolerant attitudes towards these ethnic minorities (Ousey & Unnever, 2012). Unfortunately, few studies formally test the relationship between minority threat and incarceration rates cross-nationally. Jacobs & Kleban (2003) find a significant, positive relationship between the share of the population that is minority and the incarceration rate in 13 progressive countries between 1970 and 1995. In an expanded study of 140 nations, Ruddell and Urbina (2004) find that the most heterogeneous societies are also those with the greatest imprisonment rates (see also Ruddell, 2005). In an interesting cross-national application of minority threat theory, Pate and Gould (2012) find that ethnic, religious, and linguistic heterogeneity predicts the formal sanctioned use of corporal

punishment as criminal sentence, such as whipping, caning, and branding. Unfortunately, there are no cross-national studies of minority threat to date which examine the proposed curvilinear relationship between population heterogeneity and formal social control—a shortcoming this study intends to address.

The concept of morphology refers to the distribution and differentiation of people in relation to each other. Black acknowledges that people may be socially distributed and differentiated in many ways, but fundamentally consists of their intimacy and interconnectedness. Therefore, this measure deserves special conceptual consideration, especially at the macrosocial level of analysis, where intimacy concerns social groups rather than individuals. In the process of conceptualization, a fundamental question becomes, *how are social groups fundamentally distributed within nations*? Also relevant is the question, *how does this distribution predict punishment*?

With the fundamental issues presented this simply, the answers are fairly easily answered by existing social theories of punishment: societies tend to be distributed—and differentiated—along racial and ethnic boundaries (Alesina, Devleeschauwer, Easterly, Kurlat, & Wacziarg, 2003; Koopmans, 2010); and punishment is influenced by the presence and distribution of racial and ethnic minority groups (Blalock, 1967; Horowitz, 2001; Jacobson, Heard, & Fair, 2017; Ruddell & Urbina, 2004). And Black is quite clear about this possibility: "Even a single locality of a traditional society may divide into separate worlds, with the people of each entirely independent, rarely seeing each other, and never interacting. This may involve different ethnic groups." (1976, p. 43).

Measuring Culture.

For Black, culture refers to systems of knowing, whether those systems exist as religions, sciences, arts, or humanities. Although nearly a third of the theory tests do not attempt to address culture at all, approximately another third (N=13) of the remaining studies use some measure of educational attainment, including most of the extant macrosocial tests (Borg & Parker, 2001; Kuo et al., 2010; Lu & Miethe, 2007; S. K. Wong, 2010). However, studies have also considered religious heterogeneity (Lessan & Sheley, 1992; Wooditch, 2012), technological advancement (Lessan & Sheley, 1992; Wooditch, 2012), race and ethnicity (Chappell & Maggard, 2007; S. K. Wong, 2010), age (Kruttschnitt, 1980), urbanization (Lu & Miethe, 2007; Mooney, 1986), languages spoken (Mooney, 1986), and even whether or not a motorist was operating a factory-standard car (Geiger-Oneto & Phillips, 2003). Among macrosocial tests specifically, four of six studies which operationalize it use some measure of educational attainment (Borg & Parker, 2001; Kuo et al., 2010; Lu & Miethe, 2007; S. K. Wong, 2010), two use a measure of religious heterogeneity (Lessan & Sheley, 1992; Wooditch, 2012), and one uses an indicator of the volume of technology as determined by the number of patents awarded (Wooditch, 2012). Of these, educational attainment consistently garners support, though the others do not. Once again, the sheer number and variety of indicators used to measure culture draws attention to the need for conceptual refinement. Returning to the core concept of Black's version of culture—systems of knowing—it seems necessary to consider a measure that gets people's paradigmatic understanding of the world—that is, the symbolic systems that people use to interpret and understand experience. It is worth considering alternative measures of a culture of religion and/or science, given theories that emphasize the role of each in punishment—especially the role of

scientism and the pathologizing of crime that has been blamed for carceral expansions in several nations.

Humans develop symbolic systems of understanding in order to "make sense" of life. Two common paradigms are religion and science, and both may contribute to punishment. Barnes (1934) provides an account of the "birth" of formal social control. The earliest criminal justice systems were formed directly out of spiritual beliefs. Originally, wrongdoings were private affairs settled between individuals and families. However, during the Middle Ages in Europe, these disputes frequently escalated into blood feuds. The feudal lords therefore established the first laws meant to adjudicate wrongs. Initially, these involved certain trials by which God would supposedly condemn the guilty or spare the innocent. One such method was trial by battle, wherein a victim or family member would battle the offender or family member, under the presumption that God would protect the innocent party. But because this gave great warriors an advantage, they could act with impunity, safe in knowing they would always win trial by battle. Eventually, new ordeals emerged: suspected witches were bound and thrown into rivers; those who sank were presumed guilty. Others were forced to run the gauntlet or walk on fire, all under authority of God and presumption of divine intervention (Newman, 2017). During the Spanish Inquisition—an attempt by Catholic leaders to preserve Catholic orthodoxy—the church explicitly sanctioned torture, such as the strappado (Maycock, 1926), though the association between harsh punishment and religious authority was common throughout Europe (Radzinowicz, 1966). And it has been acknowledged that the earliest prisons were formed out of religiosity. Puritan Quakers in the 1790's believed that putting wrongdoers in a cell and providing nothing but a Bible to read would give the offender an opportunity to repent. Hence

the penitentiary, a place for spiritual penitence (Teeters, 1955). It was the abuses of the church, expressed through the state apparatus, that led to widespread criminal justice reform during the Renaissance, inspired in part by arguments put forward by Jeremy Bentham's *An Introduction to the Principles of Morals and Legislation* (1781) and Cesare Beccaria's *On Crime and Punishment (1778)*, who championed, in part, a separation of church and state (Radzinowicz, 1966).

However, secularization will not necessarily lead to a reduction in formal social control, because religious faith may be replaced by a faith in science that still serves a punitive agenda. Historical process scholars suggest that both the mode and scale of formal social control are attributable to scientific hubris. A close reading of much of this literature indicates that families and neighborhoods have abdicated the redress of deviance—including public nuisances, juvenile delinquency, mental illness, and substance abuse—to formal agents of social control, including the police (Monkkonen, 2004; Monroe, 1967), specialized juvenile courts (Humes, 2015; A. Platt, 1969), mental hospitals (Foucault, 1965; Grob, 1983), and rehabilitation centers (White, 1998). In all of these cases, scholars have identified substantial expansions of social control motivated by widespread public faith in disciplines such as psychology, sociology, criminology, and 'police science.' Preceding these expansions, there is widespread presumption that these disciplines can efficiently address and treat social pathologies via 'specialists' and 'professionals.'[13] As Horowitz (1990, p. 4) argues, "As the number of social workers, psychologists, probation officers, alcohol counselors, mental health workers, and the like expands, growing numbers of deviants are captured in the net of formal agencies of social

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[13] A more general critique of scientism and social pathology is available in Friedrich Hayek's *The Counter-Revolution of Science: Studies on the Abuse of Reason* (1953).

control. State bureaucracies and professional services are thought to have replaced families, neighbors, friends, and other community members as the primary caretakers of deviants."

The prison institution is no exception, as Rothman (1971) argues in his historical process theory of incarceration. In the nineteenth century, both rapid social change in American cities and a rapid scientific shift toward positivist methods of inquiry contributed to the rise of prisons. Subjective experiences of new urban life and the inception of objective crime statistics led many citizens, scholars, and leaders to conclude that old methods of crime control were ineffective and new methods were necessary. Detailed criminal case histories and urban ethnographies also materialized in the emerging social sciences, and although the objectivity of the investigators is in question, this body of scientific knowledge pointed to a consistent set of crime causes: urban disorganization; a lack of childhood discipline; and corruption by criminal models in the home and community. The logical, practical, and ethical solution was to remove the deviant from the family and community and institutionalize him, with the state as surrogate caretaker that could compensate for the presumed failures of his parents and neighbors. Rothman concludes:

> Americans' understanding of the causes of deviant behavior led directly to the invention of the penitentiary as a solution… Its design—external appearance, internal arrangement, and daily routine—attempted to eliminate the specific influences that were breeding crime in the community, and to demonstrate the fundamentals of proper social organization…[T]hese institutions became the pride of the nation...designed to join practicality to humanitarianism, reform the criminal, stabilize American society, and demonstrate how to improve the condition of mankind. (p. 79)

Thus, Rothman indicates that prison expansion was driven by an overly optimistic faith in the social sciences to identify and remedy the criminal condition—an amalgam of humanitarianism

and scientism.[14] A similar phenomenon has been observed in women's reformatories: the commitment of female offenders to reformatory institutions expanded rapidly as a body of expertise emerged suggesting that female offending had distinct origins and required specialized response (Rafter, 1985b). Likewise, formal custody of wayward children expanded significantly based on arguments appearing in new theories of delinquency (A. M. Platt, 1969). The forced sterilization of criminals in the early 20th century (Lombardo, 1996) and the execution of genetically 'inferior' races during the Holocaust (Bergman, 2012) also provide ample evidence that formal social control may be a direct function of overconfidence in emerging sciences to both identify and eradicate perceived social ills.

It is reasonable to question whether this phenomenon is distinctly American, or generalizable across nations, but there is good reason to believe that the same process has occurred elsewhere. Consider the following from a social history of prison expansion in South America:

> Most Latin American countries adopted the penitentiary project...The general aim—as it was presented in the rhetoric of authorities and reformers—was to eradicate the ruinous, unhealthful, inefficient, and inhumane jails that existed all over the region and to replace them with modern, "scientific," and rehabilitative institutions for transforming the criminal into an obedient, hard-working, law-abiding subject. Reformers embraced the new criminological science (heavily influenced by positivism), placed anthropometric research facilities in their carceral institutions, enhanced the power of experts (criminologists, physicians, teachers) within the prison, generated the statistics needed to analyze the problems of crime, and gradually induced changes in their penal legislation in order to incorporate the most recent European and North American innovations in the "science" of punishment. (Salvatore & Aguirre, 2010, p. 1)

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[14] Out of necessity, I have chosen to focus on but one theme in what is a multifaceted, complex, and highly discursive socio-historical account of American penal policy.

Similarly, in France, Foucault (Foucault, 2012) has argued that dramatic increases in incarceration in that country accompanied "the disciplines," bodies of science designed to diagnose, treat, and cure undesirable human behavior and to mold people into contributing members of society. He connects the development of knowledge to the development of power, where each serve to reinforce each other, and the entire carceral complex is built upon abstract understandings of the causes of deviance, a network of "specialists" providing "specialized" treatment via the penitentiary.

In sum, there are reasons to believe that in many modern societies, crime is treated like a 'disease'—a deviant pathology that requires intervention, like mental illness or addiction—and there is misplaced faith in science and authority to 'solve' the problem in lieu of informal caretaking. In such places, incarceration will be higher, attributable in large part to a society's faith in their understanding of human nature. This differs little from earlier patterns of formal social control, except that faith in the understanding and treatment of deviant behavior was based on religious authority (then) rather than scientific authority (now). In short, the evidence suggests that such a theory of punishment that incorporates measures of a nation's "theory of knowledge" (a lay social epistemology) may be fruitful. To date, only the many socio-historical accounts cited herein provide support for such a theory, but importantly, this body of theory has escaped systematic quantitative analysis.

Measuring Organization.

Black defines organization as the capacity for collective action, and argues that better-organized people—whether victims or offenders—will be better able to mobilize the law in their favor. Out of 34 theory tests, however, fully half (17) do not attempt to operationalize

this dimension. Those that do so choose very different markers of organization. Several studies consider some measure of co-offending (Baumer, 2002; Gottfredson & Hindelang, 1979; Lee, 2005; Myers, 1980) or co-victimization (Lee, 2005), and a few studies consider whether an offense occurred within or against a business (Gottfredson & Hindelang, 1979; Hembroff, 1987). Some studies examine whether informal organization, such as church functions, book clubs, PTA membership, or community groups influence legal outcomes (Copes et al., 2001; Doyle & Luckenbill, 1991; Graham et al., 2013). Some studies have considered things such as marital status, campus resident housing, employment, and number of entertainment venues as measures of organization (Lu & Miethe, 2007; Mooney, 1986).

Among macrosocial studies of *The Behavior of Law*, the organizational dimension has been measured using some indicator of welfare/decommodification (Borg & Parker, 2001; Lu & Miethe, 2007; S. K. Wong, 2010; Wooditch, 2012), military conflict (Kuo et al., 2010; Lessan & Sheley, 1992), or civic or political organization (Kuo et al., 2010; S. K. Wong, 2010). Each of these measures has garnered mixed support, perhaps owing to the variety of outcomes they have been applied to. However, as has been noted elsewhere in this study, only a single cross-national, macrosocial test of Black's theory exists (and it focuses rather narrowly on antitrafficking laws; Wooditch, 2012); each of these measures of organization is likely to vary more between countries than within them, warranting further attention.

Black gives special emphasis to political organization, and so a consideration of political conflict theories may inform appropriate measures of this construct. Emile Durkheim's "Two Laws of Penal Evolution" (1969), originally published in 1900, argued that as societies' social organization developed, one could observe corresponding changes in its quantity and mode of

punishment. Durkheim argued that societies had a tendency to evolve away from absolute central authority toward more diffuse authority over time[15]. His first law argues that punishment severity increases "where the central power is more absolute in character" (p. 32). Using broad historical evidence from ancient societies to 19th century industrial nations, Durkheim observes that the most punitive societies have been those without organized dissent. Durkheim's concept of an absolute central power describes a unilateral arrangement in which the citizen is, more or less, property of the state. A state characterized by an 'absolute' central power is an idealistic type used as an extreme example, since folkways, religious practices, and non-governmental social bodies provide some resistance—in practice, if not in law (Tiryakian, 1964). Political organization affords a constant renegotiation of the exercise of formal social control—including, in theory, imprisonment—even in the absence of legislative authority. In short, Durkheim argues that punishment is lower where citizens have power of collective action. His statements are similar in spirit to de Montesquieu's claim that "punishments have increased or diminished in proportion as these governments favoured or discouraged liberty" (de Montesquieu, 1989). The specific form of government (monarchy, democracy, socialist republic, etc.) is not as important as the presence of some countervailing power, formal or informal. Durkheim's second law states that imprisonment tends to become the modal form of punishment over time.[16] In pre-modern societies, incarceration is rare; in the most advanced and differentiated societies, it is almost the exclusive form of punishment. In short, Durkheim argued that societies naturally tended to become differentiated, leading to a diffusion of powers and interests; concomitantly, punishment

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[15] There have been occasional exceptions to this general trend away from absolute rule, such as Germany, Italy, and Russia leading into World War II (Tiryakian, 1964).

[16] The second law reads, "Punishments consisting of deprivations of liberty, and then only for periods of time that vary according to the gravity of the crime, tend increasingly to become the normal type of repression" (Durkheim, 1969, p. 44).

became less physically harsh, but lead to increases in imprisonment. In sum, political organization and political diffusion are directly related to the scale and mode of punishment, according to Durkheim. Although rarely acknowledged as such, Durkheim's laws of penal evolution served as a precursor to conflict theories which emphasized political organization and power in formal sanctioning.

Chambliss and Seidman (1971) explicitly acknowledge Durkheim in their empirical analysis of the application of law. They make several contentions that extend or rework Durkheim's arguments. First, they note that as societies advance, they become more complex and differentiated. Second, this complexity and differentiation leads to interpersonal and group conflicts. Third, these conflicts require formal (legal) institutions that serve to mediate these conflicts. Unfortunately, a consequence of this arrangement is that various interest groups form in competition of their respective interests, and those who are best able to mobilize power are in a position to advance their interests while criminalizing their competitors'. On this matter, unlike Durkheim's claim that law serves to reinforce social solidarity (Durkheim, 2014), Chambliss and Seidman suggest that law in complex modern societies actually serves to negotiate, execute, and legitimate conflict, formally marginalizing some and often leading to the antithesis of solidarity. Nonetheless, Chambliss and Seidman agree with Durkheim that concentration of political power often leads to more formal social control.

These basic theoretical arguments are also illustrated in early conflict theories presented by Sellin, Vold, and Turk. Sellin (1938) suggested that complex societies are characterized by value conflict, as minority groups with different norms and traditions than the dominant group have trouble assimilating. In such cases, the law would represent the imposition of the values of

the dominant group. George B. Vold (Vold et al., 2002) would later suggest that political conflicts were indicative of social order, rather than disorder, as the opposing tensions created a sort of dynamic equilibrium. When this equilibrium tilts, and power is concentrated among a particular interest group, the behaviors of minority power groups is likely to be legislated and sanctioned. Importantly, "the conflicts among organized groups are especially visible in legislative politics" (Vold et al., 2002, p. 229), reiterating how the organization of people and governments predicts penal policy. Austin Turk (1969) would advance these arguments in his "theory of criminalization." According to Turk, conflict and criminalization depend upon two factors between authorities and subjects: organization and sophistication. Like Durkheim, Turk argued that formal social control tends to be highest where authorities have substantially concentrated power, but their subjects are virtually powerless (see pp. 67-70).

Like these early conflict theorists, Richard Quinney (1970) emphasized political organization in conflict and social control, noting that penal policy is set in some broader political context. But he extended early conflict theorists' arguments about "interest groups" to "segments" of society. "Segments" may share a common ideology, but may not be formally organized. As examples, business sectors and labor unions have been organized for years. On the other hand, there are many marginalized segments of society—prisoners, the mentally ill, the chemically dependent, etc.—who share common interests but are not formally organized. One of Quinney's central claims is that social control depends not just on the conflict of several politically organized groups, such as business versus labor, but rather depends upon the ability of some social segments (e.g., business owners) to attain political power at all, while other social segments attain none. Far from being political opponents whose competition of values merely

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fail to legislate, many segments of society never even get a seat at the table. This allowed Quinney to extend conflict theory to *all* crimes, not just the subset of crimes considered by Sellin (1938), Vold (2002), or Turk (1969). Furthermore, according to Quinney, ideas about law, order, crime, and punishment are manufactured in the political process in the competition for ideas, communicating supposed threats to the broader social order, but actually reflecting the interests of those holding power. In this process, ideas about who ought to be punished are legitimized more broadly in society by the politically powerful (Garland, 1990, 2001).

In their "unified conflict theory of crime," Vold, Bernard, and Snipes (2002) synthesize the foregoing conflict theories into thirteen postulates. These postulates fall within five domains or dimensions: values and interests in complex societies; patterns of individual action; the enactment of criminal laws; the enforcement of criminal laws; and the distribution of official crime rates. Most relevant to the present study, they hypothesize that "the distribution of official crime rates in every society (i.e., arrests, convictions, *imprisonments*, executions) will tend to be the inverse of the distribution of political and economic power in that society" (p. 242, emphasis added). It follows that where political power is widely distributed, incarceration rates should be low, and vice versa.

Evidence for conflict theory is largely limited to socio-historical analyses. For instance, Hall's "Carrier's Case" (Hall, 1952) presented a sociological interpretation of the evolution of the law of theft. That court decision from 1473 concerned a man hired to transport goods. Instead of delivering the goods, he took them elsewhere, broke open the containers, and took what was inside. Prior to this case, larceny legally required a trespass: "taking a chattel from one who had possession of it" (p. 6). However, the carrier clearly had possession of the "stolen" goods in this

case, as he was responsible for carrying them, which would have made the matter a civil tort rather than a felony. The justices clearly had difficulty deciding this case. Ultimately they held that Hall had indeed committed larceny. Hall traces this decision to the emerging mercantilism of the time, and especially to the self-interested pressure applied to the justices by an absolute authority—King Edward IV, himself a merchant. Thus, as conflict theories would argue, a concentration of political and economic power allowed those with power to advance their own interests and deny others' in the expression of the criminal code itself; neither the crime nor its punishment were determined by representative politics. Similarly, vagrancy laws had emerged in England in the mid fourteenth century, and it is widely accepted that the ruling lords imposed these laws in order to force the lower classes into the labor market, thus providing cheap agricultural workers for those same lords; they expanded again when the industrial revolution required cheap labor in urban factories (Chambliss, 1964). In both periods, despite the vastly different forms of government (i.e., feudal English monarchy vs. democratic American republic), economic interests determined (a) who held power (political organization) and (b) who was criminalized (formal social control).

Lest conflict theorists be accused of cherry-picking the evidence, there is also quantitative evidence from modern industrialized nations suggesting that political arrangements predict incarceration rates—specifically, that diffusion of power tends to be associated with lower rates of imprisonment. Corporatism refers to a political arrangement in which distinct interest groups—e.g., agriculture, labor, health, etc.—have input and representation in the government, and was originally designed to reduce class conflicts (Wiarda, 2016). Using a corporatism measure that indicates the degree of input and compromise among various interests

(Pampel, Williamson, & Stryker, 1990), Greenberg (1999) finds that corporatism significantly reduces incarceration rates in wealthy modern nations—even after controlling for wealth, inequality, and crime. In pooled time series of 13 industrialized nations spanning the 1970's, 80's, and early 90's, Jacobs and Kleban (2003) find that corporatism tends to reduce incarceration rates, presumably because these nations are less sensitive to emotional populism and are more attentive to the various stakeholders in criminal justice policy. However, they also find that federalism—governance that is shared, rather than centralized—tends to produce higher incarceration rates, because it allows punitive public attitudes more direct influence over incarceration policies. In modern democracies, more centralized government seems to produce less, not more, incarceration. Garland (1990) has provided similar arguments, using evidence from the U.S. and England, to suggest that harsh, punitive public attitudes are rather normal, expressing a symbolic condemnation of antisocial conduct. Some political arrangements stoke these passions for political advantage (Jacobs & Carmichael, 2001), whereas other (corporatist) arrangements bring a broader context to the debate and placate passions.

Conflict theories have emphasized the role of civic and political organization and conflict in the etiology of lawmaking and law enforcing, which provides some insight for a measure of Black's dimension of organization that improves upon these previous studies. Influential scholars including Weber (1954), Durkheim (1969), and Garland (1990) have all emphasized the influence of political organization on the execution of law, making this an especially relevant measure of organization for Black's theory.

Measuring Informal Social Control.

Many studies (N=12) fail to even consider informal social control, and those that do so use a variety of loosely-related measures. This is complicated by the lack of consistency provided by Black: he argues that informal social control is a characteristic of the social circumstances in which a person finds himself/herself which could exert influence on behavior (such as the institutional arrangements, familial pressures, and geotemporal patterns) *as well as* his or her respectability. Individual-level studies have considered the influence of prior records, which telegraph an offender's (or victim's) respectability and, thus, invoke differential government responses (Chappell & Maggard, 2007; Geiger-Oneto & Phillips, 2003; Greife, 2012; Litwin, 2004; Staples, 1987); victim self-help (Copes et al., 2001; Doyle & Luckenbill, 1991; Kuo et al., 2010); resisting a police officer (Mastrofski et al., 2002); divorce rates (Wooditch, 2012); urbanism (Graham et al., 2013); and offense location (Gottfredson & Hindelang, 1979; Kuo et al., 2012; Myers, 1980).

Although all seven macrosocial tests of *The Behavior of Law* have attempted to operationalize the dimension of informal social control, most have done so using some measure of mortality—either homicide (Borg & Parker, 2001; Massey & Myers, 1989; S. K. Wong, 2010; Wooditch, 2012) or suicide (Lessan & Sheley, 1992)—and have generally found some support. One argument has been that high rates of homicide are a good indication that the regulative functions of society have broken down, and that informal social control is low. Others have used it as a direct measure, arguing that lethal vengeance is *itself* a form of informal conflict resolution (Borg, 1998; Massey & Myers, 1989). All of these measures, of course, are poor proxies for informal social control, which at its core involves *the internalization of norms and*

values. As with the stratification variable, many researchers seem to have conflated Donald Black's statements on the *mechanisms* of social control for the phenomenon itself. For instance, Black argues that in some places, families and schools may exert more social control than others. While perhaps true, measures of these mediating institutions cannot substitute for direct measures indicating whether these institutions have actually had normative influence, and thus actually exerted informal social control.

Informal social control—the work of families, houses of worship, neighborhoods, and the like—is inversely related with formal social control—the work of the government. At the heart of this interplay are notions of norms and values. In this section I will briefly summarize theories of law and punishment that acknowledge the role of norms and values, especially as they are imposed upon others via legal and non-legal institutions.

One of the original statements social control and normative expression comes from Emile Durkheim (Durkheim, 2014). For Durkheim, punishment was at the heart of social systems, because norms defined social systems. Punishment was simultaneously a cause and an effect of collective values, and without a shared set of values and understandings, social order of any kind was not possible. Observing rapid changes in social organization at the height of the industrial revolution, Durkheim sought to understand how collective values might still be possible despite rapidly changing social structures that, at least to others, suggested a lack of coherence. He explored the differences and similarities between "mechanical" societies (traditional or primitive societies) and "organic" societies (modern and complex societies). Both of these types of societies produce a "collective consciousness," or a widely shared system of norms, values, beliefs, ideas, and identity. In mechanical societies, where people are largely homogenous, the

collective consciousness is produced by traditions, rituals, symbols, and other expressions of faith, producing "mechanical solidarity." In organic societies, solidarity may be influenced by religion and folklore as well, but it is also influenced by broader social institutions such as the media, the educational system, the state, and the judiciary, which have their own traditions, rituals, symbols, and other expressions of solidarity (such as pledges of allegiance, parades, uniforms, assemblies, legal rituals, and the like). In more complex societies, where religious beliefs may be numerous and differing, other institutions may help reinforce common values and shared identity. In this way, Durkheim suggests that institutions of formal social control, including governments, courts, and police, directly influence informal social control, or shared normative values.

E. A. Ross (2009) made similar claims. In his broad survey of the origins of social order, Ross argues that the relative order and control we observe in modern societies is attributable to numerous social institutions, including law, religion, and education. But he argued that it was also due to less tangible social institutions, including public opinion and social suggestion. Ross claimed that legal sanctions tend to reinforce public opinion and social suggestion (and vice versa). The public ceremony of punishment produces or reinforces the normative disapproval for the behavior under examination. In this way, citizens tend to accept the application of law as the collective will of the community. But Ross acknowledged that law was insufficient to produce normative conformity, largely because it could have little influence in the times and places where people are out of its sight—which is most of private life. The nature of social control is more complex: while public opinion tends to produce social control, public opinion is influenced by

the values widely expressed in education, art, religion, and custom, and also by law. The law thus compensates for inadequacies of informal institutions to enforce norms, and vice versa.

Roscoe Pound, in *Social Control Through Law* (Pound, 1997), extended these arguments. Pound identified morals, religions, and laws as the major agencies of social control. In simpler societies, kin groups were relatively small and homogenous. Members shared a belief system and a set of values; law was unnecessary. But with the development of the modern political state, moral and religious heterogeneity produced value conflict. Only a *codified* set of values—law—could address these conflicts and compensate for the waning influence of institutions of informal social control. Most importantly, Pound claimed that the legal institution and these other institutions operated inversely: legal social control emerged where informal institutions had failed to internalize conduct norms. No longer did people defer to the head of household to govern wife and child; no longer did people expect the church to regulate normative values and conduct. It is important to note that Pound fundamentally disagreed with Durkheim on the relationship between formal and informal social control: while Durkheim held that formal institutions and informal institutions reinforced each other and a common normative order that bound people together, Pound was convinced instead that law was a tool employed when there was a lack of normative consensus and shortcomings of informal institutions. As we will see in the following chapter, Pound's ideas anticipated Donald Black's comments on formal and informal social control.

All of this is to suggest that formal social control—including the practice of incarceration—becomes more intense in the absence of alternative, informal systems of social control. There is ample historical evidence of this, at least in the Western world. For instance, in

the early 20th century, as a progressive political movement rapidly sought to expand women's rights in the family, church, school, and polity, their representation in prisons skyrocketed (Rafter, 1985a). These patterns are clear in the control of juveniles, as well. In the Middle Ages, parents had strict and severe control over children, and the state had almost none; however, the shift from extended families and kin groups to nuclear families had the effect of reducing familial control (Ariáes, 1962). In response, governments passed laws requiring children to obey their parents, presenting the first encroachment of the state into areas previously controlled by the family (Sutton, 1993). Later, urbanization led to social problems such as poverty, neglect, and homelessness, all of which further eroded the informal social control of the family on youth. In response, the state assumed formal social control of juveniles in family courts (A. M. Platt, 1969). And the prison boom that began in the 1970's was preceded by perceived immorality, normlessness, and social disorder of the 1960's (Cullen & Jonson, 2016). Each of these historical circumstances led many to believe that informal social institutions had failed to establish normative order, and therefore control was abdicated to the state. While social histories provide substantial evidence, there is a lack of quantitative evidence linking the product of informal social institutions—norms—to punitive state practices.

A defensible measure of informal social control should incorporate self-reported norms from nationally representative surveys. In countries where people hold more permissive normative attitudes regarding violence, theft, and other questionable conduct, informal social control is lower, because citizens have not internalized some disapprobation of those behaviors through their social environment. This can be considered good evidence of low informal social control. Another measure relevant to the internalization of norms might consider normative

consensus—a measure of dispersion. Nations where citizens more broadly agree about normative conduct arguably demonstrate more effective systems of informal social control.

Level of Analysis

As mentioned in preceding sections, *The Behavior of Law* has been applied to quantitative macrosociological tests just seven times out of 34 theory tests. There is little doubt, however, that Black intended that the theory explain the application of law to societies, as well as to individuals. For instance, Black is explicit about the aggregate effects of economic inequality on the volume of law within nations: "the more stratification a society has, the more law it has" (p. 13). On the morphological dimension, intimacy may be measured at both the individual and macrosocial level of analysis, according to Black: "Just as it is possible to measure the stratification of many people in relation to one another...so the intimacy of a larger setting may be measured by the relational distance, on the average, between each person *or group* and every other" (p. 41, emphasis added). Cultures, as symbolic systems of knowledge and expression, are inherently collective. Black also states that "a society may be more or less organized" (1976, p. 86), because organization, too, involves social aggregation. Finally, informal social control is inherently a collective function; normative behavior requires some collective norm as a reference point. Black makes it clear that the dependent variable may also be measured at the macrosocial level: "[T]he quantity of law is known by the number and scope of prohibitions, obligations, and other standards to which people are subject, and by the rate of legislation, litigation, and adjudication" (p. 3). All of this suggests that researchers are remiss to apply the theory almost exclusively to individual-level phenomena, such as the decision to report a crime or make an arrest.

Given that Black's theory draws inspiration from, or parallels, several macrosocial theories in the sociology of law (see Chapter 2), macrosocial tests appear to be especially applicable. Nonetheless, the dearth of macrosocial research means there is an even greater need to attend to the issues presented—or unanswered—by the macrosocial research. The present study adds to this very limited body of macro-level research testing *The Behavior of Law*.

Misspecification

Regression analysis of cross-sectional data is by far the most common method of analysis in research on *The Behavior of Law*. Regression analysis requires careful attention to model specification, which involves calculating unbiased and efficient estimates of the relationships involved. Misspecification (or specification error) is generally attributed to omitted variable bias or use of the wrong functional form. These two specification errors tend to produce biased estimates, large error terms, and ineffecient parameter estimations (Asteriou & Hall, 2016). Unfortunately, a substantial body of research testing Black's theory suffers from problems of model misspecification.

Omitted variables.

Omitted variable bias involves the exclusion of a relevant predictor variable in a regression model. When this occurs, the omitted variable becomes part of the error term in the regression formula. The result tends to be regression coefficients for the remaining variables which are biased and inconsistent (Asteriou & Hall, 2016). This has been particularly problematic in research on *The Behavior of Law*: of the 34 tests identified in this study, seventeen used classic regression techniques, but failed to incorporate all five social dimensions said to predict formal social control (see Appendix A).

Functional form.

Functional form refers to the mathematical relationship between two variables—usually, a predictor variable and an outcome variable. Donald Black is very explicit about the functional form of the relationships in his theory, such as when he says, "law varies directly with stratification" (p. 13) or "the relationship between law and relational distance is curvilinear" (p. 41). However, not a single test of Black's theory has yet evaluated the proposed quadratic relationship between law and morphological variables. Unfortunately, estimating linear regression parameters when the true relationship is quadratic results in incorrect estimates of the true population parameters, including parameters of other variables in the regression equation (Asteriou & Hall, 2016). The implications cannot be understated: *The Behavior of Law* has not been properly specified in empirical tests, leading to regression coefficients that are likely to be inconsistent and biased, and the theory has therefore not been subjected to proper scientific falsification.

Conclusion

This section has summarized three major problems with existing tests of Black's theory of law. First, conceptualization and operationalization have been inconsistent at best. Nonetheless, measures that are theoretically consistent with Black's theory and the underlying constructs may be informed by other theories in the sociology of punishment with conceptual overlap. Furthermore, although most tests of Black's theory have involved individual-level analyses, further macrosocial tests are warranted. Finally, there are specification problems with existing tests that this study address—including omitted variables and the functional form of the

relationships. The following chapter describes the methods used in this study, which overcome many of these limitations.

CHAPTER FOUR:
METHOD

Cross-national incarceration rates vary substantially, but limited systematic effort has been made to explain this international variation. The sociology of punishment has produced a number of theoretical frameworks useful for understanding punishment generally, but demonstrates several shortcomings: a lack of cross-national research; a related lack of truly "general" theory; a lack of coherent synthesis or integration; and a chiefly discursive, historical approach that has lacked quantifiability. Donald Black's *The Behavior of Law* (1976) appears to overcome many of these shortcomings: it is derived from, and applicable to, variously differing countries and societies; it provides a coherent and parsimonious synthesis and integration of multiple theoretical traditions; and it is radically quantifiable. Unfortunately, empirical research on *The Behavior of Law* has been wanting, and has suffered from its own shortcomings, including a dearth of macrosocial examination, questionable conceptualization of its key dimensions, and major problems with model specification in quantitative tests.

The current study explicitly connects *The Behavior of Law* to the broader sociology of punishment and determines whether it predicts cross-national variation in incarceration rates. I use several regression models to estimate the influence of Black's five broad social dimensions on national prison rolls.

In this Chapter, I present a clear, objective methodology applying Black's theory to the study of varying incarceration rates worldwide. While superficially this study may appear similar

to prior tests of Black's theory, I intend to present several methodological improvements to the current body of literature. First, I carefully attend to issues of conceptualization and operationalization, identifying measures that are informed by Black's own statements, although also informed by the sociology of punishment literature more broadly. Second, I include all of the social dimensions included in Black's theory, limiting the likelihood of omitted variable bias. Third, I explore nonlinear relationships between formal social control and certain key variables, as Black's theory explicitly predicts.

Sample and Data Sources

The sampling frame for this study consists of all the world's independent nation-states[17]. 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 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,

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[17] 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.

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there are approximately 200 nations worldwide, the final sample size being determined by data availability.

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 Factbook; the World Bank; the Encyclopedia Britannica; the World Values Survey (WVS); Freedom House; the United Nations Office on Drugs and Crime; and the World Prison Brief. Of these sources, the World Values Survey has the smallest sample of nations, and therefore presents the most significant limits on the final sample size. Wave 5 of the WVS contains data for 58 nations; Wave 6 contains 60 nations, but 38 of these nations are not unique, having appeared in Wave 5. Thus, the limiting data set provides information for 80 unique nations, setting the upward bound of the sample size. A list of these nations is provided in Appendix B.

The sample therefore consists of the population of nations, less those nations with missing data. Nations with missing data are expected to be disproportionately smaller, poorer, developing nations, and/or involved in serious martial or social conflict. The results of this study, therefore, may not be generalizable beyond those under study, but can provide an important basis to test Black's theory of law. Although inferential statistics and significance tests are reported, it is important to note that inferential statistics are only applicable to random samples, and the results are relatively less meaningful for the non-random sample presented here. The direction and magnitude of coefficients are emphasized instead.

It is important to note that many challenges exist with cross-national data, but this should not be considered a reason to forego cross-national research (Sorokin, 1937). It must be acknowledged at the outset that nations differ with respect to how they measure and define key constructs. For instance, not all nations may agree on where the line between justifiable and non-justifiable homicide is drawn, introducing error into measures such as the homicide rate (Soares, 2004)—and worse, some regimes may themselves engage in extrajudicial killings, blurring the lines between crime and punishment (Ellis-Petersen, 2018). It is also important to note that this study does not attempt to explain variation over time—there is no shortage of single-nation historical process theories that connect the penal institution to social change over time (Foucault, 2012; Garland, 1990; Rothman, 1971; Rusche & Kirchheimer, 2003), but this study's singular focus is to apply such predictions to a broader geographic context. Reliable cross-national longitudinal data is much more limited, especially for cultural and normative (rather than structural) indicators, and so cross-sectional methods are used to ensure a larger sample of nations. Where possible, predictors are gathered for several years prior to the outcome variable, under the assumption that temporal order is required to establish causality. Nonetheless, it is also assumed that variation *between* nations is much greater than variation *within* nations; that is to say, structural, cultural, and normative differences between Algeria and Zimbabwe are presumed to be much more substantial than the within-nation differences between, say, 2005 and 2015. All of this is said to anticipate an objection: that the following measures have often been gathered from different years, subject to international data availability. Until these measures can be reliably and systemically collected—and re-collected—over a decade or more, longitudinal analysis is implausible for anything but the smallest samples of wealthy nations, limiting our

broader understanding of these phenomena. This study, then, deliberately sacrifices precision for generality.

Dependent Variable

The dependent variable used in this study is a nation's incarceration rate as reported by the World Prison Brief in the *World Prison Population List* (Walmsley, 2018). This prison population 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) divided by the estimated national population. This measure provides a clear, objective, macrosocial indicator of the extent to which a nation uses incarceration to punish law violators.[18] A nation's incarceration rate is principally determined by two factors: the number of people sentenced to prison; and the length of each sentence (Zimring & Hawkins, 1993). Therefore, the national incarceration rate appears to provide a relatively valid and reliable indication of the extent to which a nation formally punishes its citizens, including both how many people are punished, as well as how seriously they are punished. In addition to known errors in the data, there are likely to be unknown errors as well, including deliberate or unintentional manipulation of the data by the reporting authorities. Nonetheless, there appears to be no suitable alternative measure of punishment which is more comparable across nations nor more reliable.[19] Incarceration rates have been used in tests of *The Behavior of Law* (Lessan &

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[18] Data is unavailable for North Korea, Eritrea, and Somolia; data is known to be incomplete for China and Guinea Bissau.

[19] Alternatives such as police stops, arrests, and convictions are subject to national variations in police and judicial customs, definitions, and record-keeping; furthermore, these measures tend to reflect processes rather than punishment outcomes. There can be less dispute about the number of human bodies housed in detention facilities or whether holding a prisoner constitutions detention.

Sheley, 1992; Massey & Myers, 1989) as well as theories and tests in the sociology of punishment (Garland, 1990, p. 17; Zimring & Hawkins, 1993).

Independent Variables

Donald Black argues that incarceration rates will vary according to five broad dimensions of social life. The variables used in this study are consistent with his conceptualization of each of these dimensions, and are also informed by sociological theories of punishment more broadly.

Stratification.

Stratification is a straightforward concept. Donald Black defines stratification as the distribution of material resources. Today, the material resource that is variously distributed is money, as all recognized nations have money economies. Money may be distributed both within and between nations. The two stratification variables used in this study include a measure of income inequality within a nation, as well as each nation's adjusted GDP.

Income inequality is measured by a national GINI index of income inequality obtained from the CIA World Factbook (CIA, 2011a). The GINI index is literally a measure of the statistical distribution of income, calculated from the Lorenz curve. Where the frequency distribution is flat—all citizens earn the same income—the GINI index is zero. Where this frequency distribution is characterized by dramatic inequality—perhaps one or a few people have nearly all income—the GINI index approaches one. The GINI index has commonly been used in studies of incarceration and punishment (Healy, Mulcahy, & O'Donnell, 2013; Killias, 1986; Krus & Hoehl, 1994; Lappi-Seppälä, 2008; Lappi-Seppälä, 2010; Miller, 2013; Van Kesteren, 2009; Wilkins & Pease, 1987; Wilkinson & Pickett, 2007), and has also appeared in several tests of *The Behavior of Law* (Kuo et al., 2010; S. K. Wong, 2010; Wooditch, 2012).

Black writes, "Apart from the distribution of wealth among its inhabitants, the total wealth of a society or community predicts the quantity of its law: the more wealth it has in relation to other societies or communities, the more law it has" (1976, p. 20). To measure a nation's overall wealth—and the corresponding financial means to build and maintain prisons—this study uses a measure of Gross Domestic Product (GDP) based on Purchasing Power Parity (PPP) from the CIA World Factbook (CIA, 2011b). GDP represents the total value of all goods and/or services that a nation produces, and is an overall indication of a nation's wealth. GDP (PPP) is an adjusted value that accounts for exchange-rates and regional values, and is preferred by economists when making cross-national comparisons (Rogoff, 1996). GDP has been used to predict incarceration rates in applications of *The Behavior of Law* (Lu & Miethe, 2007) as well as other theories of punishment (Jacobs & Helms, 1996; Jacobs & Kleban, 2003), but further examinations are warranted. While it has been acknowledged that prisons require a substantial amount of money to build and operate (Schmitt, Warner, Gupta, & Others, 2010), relatively few tests have examined the relationship between per-capita wealth and per-capita incarceration.

This study uses year 2010 or nearest available data for these two economic measures, which at time of writing varies from the year 1995 to 2017. This year was chosen because carceral punishment is presumed to lag economic arrangements (including time to enact policies and build prisons). Data on income inequality and GDP is available for 158 nations.

In modern economies, the unemployment rate is another indication of the distribution of wealth and income. Unemployed people, excluded from labor markets, are eliminated from the primary source of income for most people. Labor markets stratify the "haves" from the

"have-nots." Donald Black makes no mention of unemployment. Nonetheless, it is a central feature in theories of incarceration focusing upon social structure and economic stratification (Rusche and Kirchheimer 2003). This study includes a third measure of social structure: the unemployment rate is measured using the CIA World Factbook (CIA, 2011a). This measure refers to the percentage of a nation's labor force without work.

Morphology.

The concept of morphology refers to the distribution and differentiation of people in relation to each other. For this study, morphology is measured using the Ethnic Fractionalization Index, which is a measure of social heterogeneity (Alesina et al., 2003). It is a measure of the number of distinct racial/ethnic groups in each country. 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 distinctions worldwide. A score near 0 indicates homogeneity; a score near 1 reflects heterogeneity. Data is provided for about 190 countries.

It has been proposed that social control and morphology have a curvilinear relationship. In order to examine nonlinear effects of ethnic heterogeneity on punishment, an exponential term

is also computed for this analysis. Specifically, the ethnic fractionalization index is squared in order to estimate a quadratic (inverse U-shape) relationship between ethnic diversity and incarceration rates, which is expressed in the formula $Y = a - b(F) + b(F)^2$ where Y indicates the national incarceration rate and F indicates ethnic fractionalization.

Culture.

Culture is an elusive concept (Adkisson, 2014; Esmer & Pettersson, 2007), and therefore deserves special care toward conceptualization and operationalization in a way that is theoretically and empirically consistent with the phenomenon under study. Donald Black defines culture as a symbolic dimension, referring to the various systems of understanding that societies develop to make sense of the world. These symbolic systems may include language, art, science, and religion. Of these, science and religion appear in other social theories or social histories of punishment; as Chapter 3 illustrated, punishment has been associated with the informal social control that religion produces, and it has also been associated with widespread faith in sciences which treat social pathologies such as crime. It is important to consider both of these cultural factors simultaneously; a move away from religious authority will not necessarily lead to reduction in punishment if it simultaneously leads to a pathologizing scientism. And the cultural measure that Donald Black himself tends to emphasize is that of education. Therefore, this study captures culture using five variables, including one measuring educational attainment; another measuring religious faith; a variable measuring faith in science (or "scientism"); and two measures of urbanism.

Educational attainment is based upon the CIA World Factbook school life expectancy (CIA, 2011a). This measure is the estimated total number of years of schooling a child is expected to receive based on the current age-based enrollment.

Religious sentiment is measured using an item from the World Values Survey (Inglehart et al., 2014) that asks respondents to "indicate how important religion is in your life." Responses are captured using a 4-point scale, which is then reverse-coded so that 4 indicates that religion is "very important" and 1 indicates that religion is "not at all important". For each nation, a mean is calculated to indicate that country's overall religiosity.

To measure faith in science and technology, two items from the World Values Survey are averaged into a composite scale. Respondents are asked whether they agree or disagree with a series of statements regarding science and technology. Each item uses a ten-point scale, where higher scores indicate more agreement with the statement. The items are:

1. "Science and technology are making our lives healthier, easier, and more comfortable."

2. "Because of science and technology, there will be more opportunities for the next generation."

Both wave 5 (2005-2009) and wave 6 (2010-2014) of the World Values Survey are used to increase the total nation sample size, because some countries appear in only a single wave. (Waves 1-4 are not considered because they lack these measures.) Across the two waves, data is available for 80 nations and territories. Reliability analysis of individual-level surveys indicates that these two items are unidimensional, where $\alpha = .80$, Spearman-Brown $= .80$, and $r = .700$.

Black also claims that urban areas have more culture than other areas. Therefore, two measures from the CIA World Factbook are used. Two measures of urbanization are also included: the percentage of a nation's citizens residing in urban areas, as defined by the country; as well as the rate of urbanization, which is an estimate of the speed at which a country is urbanizing, calculated as the rate of change in size of urban areas over time. Both measures are based on estimates from the CIA World Factbook (2011).

Organization.

Donald Black defines organization as the "capacity for collective action," (1976 p. 85) but such a broad concept is imprecise. In Chapter 3 of this study, it was noted that Black gives extra attention to political or state organization, suggesting that when power is concentrated (such as during wartime or authoritarian rule), law will increase. Several theories in the sociology of punishment make similar claims, observing that punishment is a function of the concentration of power. A highly organized (absolutist) state precludes an ability of the citizenry to organize. Conversely, in nations where assembly, association, and organization are widely practiced rights of the citizenry, power is more diffuse and government is less organized. For purposes of this study, then, the concept of organization (the "capacity for collective action") incorporates political liberties and civil liberties: the right to participate in the political process; the right to vote in free and fair elections; the right to compete for office; the right to join political parties, organizations, and associations; the right to think and believe what one wishes; and the right to associate and organize freely with others who think and believe similarly (or differently). An organized citizenry is thus opposite an absolutist state, as when Black argues, "a society may be more or less organized as a state, for instance, and its people may be more or less

organized into smaller groups" (1976, p. 86), and furthermore, "democracy varies inversely with organization." All of this is to suggest that a sociology of punishment must attend to issues of the centralization and diffusion of organized political power.

The concept of "organization" for this study is thus measured using indices of political and civil liberties originally devised by Raymond Gastil (Karatnycky, 2018). The most recent version contains data for 195 countries and 14 territories (Freedom House, 2018). Each nation is evaluated against 25 indicators of civil and political freedom, resulting in an aggregate score from 0 to 100, where higher scores indicated greater freedoms and associated rights of association and political participation. Reversing these scores converts the variable into a measure of the organization and centralization of the government, that entity responsible for formal social control, and permitting a clearer test of Black's hypothesis that "law varies directly with organization."

Informal Social Control.

Informal social control is another vague and elusive concept, operating at a level of abstraction that is not immediately amenable to operationalization. The institutions responsible for it vary from place to place and time to time; meanwhile, new institutions of socialization emerge while others fade away. This is particularly problematic for a cross-national study, where an institution such as the school provides much more social control in advanced Western nations than in pastoral societies where folk religion may dominate. For these reasons, it is probably more prudent to consider measures not of the institutions of informal social control themselves, but of its outcomes—the internalization of norms and values. All this besides, it probably would

not be possible or desirable to simply count up the number of informal social institutions to which one is accountable—let alone to quantify their relative influence.

Therefore, this study attempts to directly quantify the internalization of conduct norms, especially those which harm others. The World Values Survey asks respondents to indicate, on a scale from 1-10, whether the following behaviors are justifiable:

- Claiming government benefits to which you are not entitled

- Avoiding a fare on public transport

- Cheating on taxes if you have a chance

- Someone accepting a bribe in the course of their duties

- Homosexuality

- Prostitution

- Abortion

- Divorce

- Euthanasia—ending of the life of the incurably sick

- Suicide

Presumably, informal social control internalizes one's norms regarding these particular acts. These behaviors are coded so that 10 indicates a behavior is "never justifiable" and a 1 indicates a behavior is "always justifiable." Mean composite scales are produced, indicating how strongly citizens in that society condemn arguably deviant behaviors, providing an indication that informal social institutions have instilled strong moral prohibitions for certain behaviors. Reliability analysis suggests that these 10 items form a unidimensional construct ($\alpha = .817$). This variable is titled normative convictions.

One problem with an aggregate scale, however, is that while high scores indicate strong disapproval of certain behaviors, they do not truly capture socialization to a normative standard. It is quite possible, for instance, that every citizen in a country would indicate that divorce is "always justifiable"; so while the score on this measure would be low, there would actually be nationwide normative consensus, and thus a strong indication that informal institutions had socialized all members similarly. Therefore, a measure of dispersion is considered as well. The use of a standard deviation—rather than a mean—will indicate to what extent citizens generally agree (or disagree) about justifiable and appropriate behavior. Low standard deviations are indicative of value consensus, and therefore suggest very effective institutions of informal social control and socialization. Large standard deviations, however, indicate widespread disagreement about what constitutes deviance, and therefore suggest that institutions of informal social control have diminished influence. In Georgia, for instance, the standard deviation is .69, suggesting that citizens widely agree about what is justifiable/unjustifiable. In Mali, the standard deviation is 2.49, indicating that citizens more widely *disagree* about normative standards of conduct.

A transformation is necessary to ensure that larger values indicate normative *consensus*, rather than dissensus. Therefore, the values are standardized, and the resultant z-scores are multiplied by -1. Thus, after transformation, Mali falls 3.21 standard deviations below the average nation on normative consensus; Georgia falls 2.01 standard deviations above the average normative consensus.

The concept of informal social control can be difficult to operationalize and measure. For that reason, many prior studies have used the homicide rate as a reverse proxy measure, arguing that homicide rates are highest in places where there has been a breakdown of the sort of

informal social controls that would otherwise suppress it (Borg & Parker, 2001; Massey & Myers, 1989; S. K. Wong, 2010; Wooditch, 2012). Although this study considers the homicide rate as a control variable—a factor which could conceivably *directly* influence incarceration rates—it is worth briefly noting here that this measure might be considered an alternative measure of informal social control, and is included in this study.

Control Variables

Several covariates identified in prior literature on cross-national incarceration rates (e.g. (Jacobs & Carmichael, 2001; Ruddell & Urbina, 2004) have been included here as control variables. Because (male) gender is strongly correlated with both crime and incarceration, the proportion of male to female residents was compiled from the CIA Factbook (CIA, 2011a). This ratio refers to the number of males per 100 females in each nation. Age is also highly correlated with crime and punishment; therefore, this study controls for the nation's median age (CIA, 2011a). Because incarceration rates are likely to be at least somewhat influenced by serious crime, this study controls for a nation's homicide rate per 100,000 citizens using data from the United Nations Office of Drugs and Crime (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 calculated for up to 10 years for each nation between the years 2006-2015.

Hypotheses

Donald Black (1976) presents several clear and distinct hypotheses regarding his theory of law. The five that speak to macrosocial phenomena and are directly relevant to this study include:

"Law varies directly with stratification" (p. 13)

"Law varies directly with rank" (p. 17)

"The relationship between law and differentiation is curvilinear" (p. 39).

"Law varies directly with culture" (p. 63).

"Law varies directly with organization" (p. 86).

"Law varies inversely with other social control" (p. 107).

However, these hypotheses are further refined for this study for greater clarity and precision. This study tests the following hypotheses:

1. Incarceration rates are higher in nations with higher income inequality.

2. Incarceration rates are higher in nations with higher GDP.

3. Incarceration rates are higher in nations with higher unemployment rates.

4. The relationship between incarceration rates and ethnic heterogeneity is curvilinear, with an inverse-U-shaped function—initially rising, then falling.

5. Incarceration rates are higher in nations with higher school life expectancies.

6. Incarceration rates are higher in nations where citizens place a stronger emphasis on religion.

7. Incarceration rates are higher in nations where citizens express higher levels of scientism.

8. Incarceration rates are higher in nations with more organized, centralized, absolutist governments. (Or: Incarceration rates are *lower* in nations with more civil and political liberties.)

9. Incarceration rates are higher in nations where citizens have higher average levels of normative prohibitions.

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10. Incarceration rates are higher in nations where citizens have less normative consensus.

More broadly, these specific hypotheses and the analyses will help answer the following broad research question: How well does Donald Black's *The Behavior of Law* predict cross-national incarceration rates?

Analytic Strategy

To assess the influence of stratification (wealth, inequality, and unemployment), morphology (ethnic heterogeneity), culture (education, religiosity, scientism, and urbanism), organization (political absolutism), and informal social control (normative convictions and consensus) on incarceration rates, this study proceeds in several stages. First, I describe summary and bivariate statistics for study variables.

Second, I use ordinary least squares regression to establish the influence of each variable on the natural log of incarceration rates, net controls, over a variety of model specifications. Because there are concerns that each of Black's social dimensions may not be entirely orthogonal or independent of others, I present a unique model for each dimension (plus controls) before finally presenting a full theoretical model including all measures from all five dimensions. Furthermore, separate models are presented for both linear and curvilinear relationships between incarceration rates and morphology. Each regression predicts the natural log of incarceration rates as the outcome variable; this log transformation normalizes the dependent variable and residuals, which demonstrates substantial right-skew before transformation.

The third stage involves several forms of supplemental analyses. I conduct missing data analysis and sensitivity analysis in order to assess the potential for biased parameters due to sampling anomalies. A single data source—the World Values Survey—accounts for a majority of

the missing data. Therefore, I conduct a comparison of means (t-tests) to determine whether sampled and unsampled nations differ on other available measures. Sensitivity analysis then proceeds, wherein a partial-theory model (excluding measures of religiosity, scientism, and normative convictions or consensus from the WVS) with a larger sample size differs from the full theoretical model with all measures. Additionally, I evaluate the influence of outliers using regression analysis with outliers excluded. Finally, because there is a risk of model over-fit given a large number of independent variables and modest sample sizes, I present a reduced model incorporating only those relationships found to be statistically significant in earlier models.

CHAPTER FIVE:
RESULTS

The current study sought to determine whether five social dimensions—stratification, morphology, culture, organization, and informal social control—predict cross-national variation in incarceration rates, as predicted by Donald Black's theory of law and related theories in the sociology of punishment. This chapter reports the results of analyses in several stages. First, I briefly summarize the results of descriptive and bivariate analyses. Next, I present a series of OLS regression models. Initially, partial models are presented, focusing on one of Black's social dimensions at a time; this is done because some critics have questioned whether his social dimensions are truly distinct and orthogonal, or whether they may overlap in ways that a full model might mask. Next, the full model is presented. Finally, I conduct missing data analysis and sensitivity analysis to explore whether sampling bias might bias the results.

Descriptive Statistics and Correlations

Table 1 reports summary statistics of study variables. The average incarceration rate of sampled nations is about 175 prisoners per 100,000 citizens. Economically, these nations have an average real GDP of about $15,000 per capita, an unemployment rate around 12.2%, and a GINI index of 38.199. The "average" nation has an ethnic heterogeneity score of .388, indicating that there is about a 38.8% chance that two randomly chosen individuals belong to different ethnic groups. The mean urban population is about 61%, with an urbanization rate that averages about 1.5%. School life expectancy was, on average, just over 13 years. Religiosity in each nation

averaged 1.927 on a 4-point scale. Scientism, which measured the sum of citizens' attitudes about the benefits of science and technology for society, averaged 7.5 on a 10-point scale. The average Gastil Democracy Index score, on a 100 point scale, averaged 62.25 in this sample of 66 nations.

Table 1: Descriptive Statistics of Nations in Full Theoretical Model (N = 66)

Variable	Minimum	Maximum	Mean	S.D.
Incarceration Rate	33	655	175.080	120.492
Ln Incarceration Rate	3.497	6.485	4.943	.696
Gini Index	23	65	38.199	8.873
Real GDP per capita	400	59,100	15,174.242	13,937.821
Unemployment Rate	.900%	95%	12.068%	15.481
Ethnic Heterogeneity	.000	.851	.388	.241
Percent Urban	13%	100%	60.803%	20.997
Urbanization Rate	-1.500%	5%	1.509%	1.465
School Life Expectancy	6	21	13.318	3.019
Religiosity	1.060	3.300	1.929	.678
Scientism Scale	6.340	8.730	7.507	.542
Gastil Democracy Index	7	100	62.230	28.547
Normative Convictions	6.280	9.330	8.166	.736
Normative Consensus	-3.21	2.01	0	1.000
Male to Female Ratio	84	108	97.333	4.900
Median Age	16.200	44.600	31.356	8.401
Homicide Rate	.375	33.988	5.698	7.507

Table 2: Pearson Correlations (N=66)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Incarceration Rate (natural log)															
2. Gini Index	.388*														
3. Real GDP per capita	-.087	-.286*													
4. Unemployment Rate	-.232*	.202	-.281*												
5. Ethnic Heterogeneity	.114	.303*	-.485*	.212*											
6. Percent Urban	.195	.036	.588*	-.332*	-.402*										
7. Urbanization Rate	-.240*	.296*	-.437*	.308*	.378*	-.520*									
8. School Life Expectancy	.217*	-.263*	.743*	-.458*	-.474*	.752*	-.671*								
9. Religiosity	-.020	-.350*	.652*	-.318*	-.515*	.424*	-.571*	.652*							
10. Scientism Scale	.004	-.145	-.401*	-.139	-.001	-.331*	.178	-.277*	-.130						
11. Gastil Democracy Index	-.189	-.113	.644*	-.105	-.200	.500*	-.424*	.632*	.381*	-.594*					
12. Normative Convictions	.067	.137	-.565*	.021	.206*	-.457	.354*	-.530*	-.553*	.555*	-.551*				
13. Normative Consensus	.142	-.188	.136	-.268*	-.273*	.085*	-.180	.139	.095	.301*	-.061	.560*			
14. Male to Female Ratio	-.283*	.148	-.109	-.025	.118	-.210*	.648*	-.317*	-.374*	-.026	-.052	.225*	-.065		
15. Median Age	.058	-.420*	.735*	-.417*	-.510*	.530*	-.808*	.788*	.759*	-.240*	.579*	-.475*	.186	-.456*	
16. Homicide Rate	.310*	.566*	-.215*	.040	.421*	-.088	.147	-.185	-.293*	-.078	-.067	.064	-.205	.035	-.288*

Using 11 items from the World Values Survey, a normative scale was produced. Normative convictions indicates how strongly these norms are held—that is, how disapproving citizens are of certain forms of conduct (such as theft and fraud, violence, and certain expressions of sexuality). Normative consensus indicates how widely these norms are held—that is, the dispersion of the scale in each nation. In this sample, the national mean value for normative convictions was 8.166 on a 10-point scale, indicating that respondents were generally more disapproving than approving of the 11 behavior. Normative consensus—a z-score derived from the standard deviation of the normative convictions scale—ranges from -3.21 to 2.01.

The nations under study had a Male to Female ratio of .973, indicating that there were slightly more women than men, on average. The median age in each country averaged 31 years, and the average homicide rate was 5.7 murders per 100,000 citizens.

Bivariate Pearson correlations are reported in Table 2. Six of the sixteen variables demonstrate significant and substantive correlations with incarceration rates: the Gini index (.388); the unemployment rate (-.232); the urbanization rate (-.240); school life expectancy (.217); the male to female ratio (-.283); and the homicide rate (.310). It is worth noting that two of these defy theoretical expectations: the unemployment rate corresponds with a *lower* incarceration rate, as does urbanization.

OLS Regression

Before reporting the full theoretical model, OLS regression is performed using one social dimension at a time, in order to consider the isolated and spurious relationships between social dimensions which may demonstrate overlap. For each model, the dependent variable (incarceration rates) has been log-transformed using the natural log.

Stratification.

Table 3 displays OLS regression results for the natural log of incarceration rates on measures of economic stratification, plus controls Both unstandardized (b) and standardized (B) coefficients are reported. The results indicate that two of the three stratification variables are associated with incarceration rates, although one of these operates in a direction contrary to theory. Income inequality is positively associated with incarceration (b = .036, B = .461, p < .001). This indicates that a 1 point increase on the GINI Index is associated with a 3.67% increase in the incarceration rate. National wealth—GDP per capita—does not significantly predict incarceration rates (b = -.055, B = -.110, p = .503). Higher unemployment rates are actually associated with *lower* incarceration rates (b = -.016, B = -.349, p < .01). A 1-point increase in the unemployment rate is associated with a 1.59% decrease in the incarceration rate. Among control variables, only the male to female ratio is significant (b = -.050, B = -.354, p < .01). Overall, this model explains about one-third of the variance in cross-national incarceration rates.[20]

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[20] An additional model, not shown, also evaluated an interaction effect between inequality and wealth per capita, consistent with hypotheses from IAT theory. No such relationship was observed. The results are available from the author upon request.

Table 3: OLS Regression of (ln) Incarceration Rates on Stratification

Variable	b	SE	B
GINI Index	.036***	.010	.461
Real GDP Per Capita[†]	-.055	.082	-.110
Unemployment Rate	-.016**	.005	-.349
Male to Female Ratio	-.050**	.019	-.354
Median Age	.004	.017	.044
Homicide Rate	.006	.012	.064
Intercept	8.586	2.200	
		Adjusted R^2 = .330	

[†]Re-scaled to $10,000 per capita, **p < .01, ***p < .001

Morphology.

Table 4 reports ordinary least squares regression for two models exploring the relationship between incarceration rates and morphology—that is, the distribution of people in relation to each other. The two models differ only in the functional form of the relationship between ethnic heterogeneity and incarceration rates. More specifically, the first model explores a linear relationship between heterogeneity and incarceration, whereas the second model introduces a squared term for ethnic heterogeneity, which permits the modeling of an hypothesized curvilinear relationship.

The results provide strong evidence that the distribution of ethnic groups in a nation is associated with incarceration rates, and that this relationship is curvilinear. While ethnic fractionalization has no *direct* relationship with incarceration rates (b = .096, B = .415, p = .817), a quadratic model indicates that both the linear and squared terms are significantly associated

with imprisonment (ethnic heterogeneity: b = 5.079, B = 1.760, p < .001; ethnic heterogeneity^2: b = -6.350, B = -1.801, p < .001). This indicates that incarceration rates are lowest for very homogeneous and very diverse nations, but that incarceration rates are highest for nations with moderate diversity. Overall, the curvilinear model explains nearly one-third of the variation in incarceration rates, an improvement from the linear model that is significant according to an F-test (F = 16.488, p < .001). (Interestingly, the homicide rate attains significance in this model, suggesting that it may be confounded with stratification variables reported in the previous section.)

Table 4: OLS Regression of (ln) Incarceration Rates on Morphology

Variable	Linear Model			Quadratic Model		
	b	SE	B	b	SE	B
Ethnic Heterogeneity	.096	.415	.033	5.079***	1.282	1.760
Ethnic Heterogeneity^2	—	—	—	-6.350***	1.564	-1.801
Male to Female Ratio	-.040*	.019	-2.81	-.020	.017	-.142
Median Age	.003	.013	.038	.003	.011	.035
Homicide Rate	.029*	.012	.317	.030**	.011	.320
Intercept	8.518	2.081		5.993	1.960	
	Adjusted R^2 = .130			Adjusted R^2 = .306		

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

Culture.

Table 5 reports OLS regression results for several variables that measure aspects of culture, according to Donald Black, including urbanism, education, religiosity, and scientism. Overall, these measures do a poor job of predicting incarceration rates, with the exception of

school life expectancy (b = .109, B = .475, p < .05). Each additional year of school life expectancy is associated with an 11.5% increase in the incarceration rate. Incarceration rates are not associated with the portion of residents residing in urban areas (b < .000, B = -.011, p = .951), nor the urbanization rate (b = -.115, B = -.243, p = .305). Religiosity is both negatively and non-significantly associated with incarceration rates (b = -.163, B = -.159, p = .375). Although faith in science and technology is associated with increases in incarceration, the relationship is non-significant (b = .101, B = .079, p = .520). Overall, the model explains less than one-fifth of the variance of incarceration rates.

Table 5: OLS Regression of (ln) Incarceration Rates on Culture

Variable	b	SE	B
Percent Urban	.000	.006	-.011
Urbanization Rate	-.115	.111	-.243
School Life Expectancy	.109*	.055	.475
Religiosity	-.163	.183	-.159
Scientism	.101	.156	.079
Male to Female Ratio	-.031	.022	-.220
Median Age	-.032	.023	-.384
Homicide Rate	.027*	.011	.289
Intercept	7.123	2.583	
		Adjusted R^2 = .130	

*p < .05

Organization.

Table 6 reports the regression results of logged incarceration rates on organization—specifically, democracy as a form of political organization, measured by the Gastil

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Democracy Index. The results indicate that democracy has a significant, negative association with incarceration rates (b = -.008, B = -.330, p < .05). Every 1-point increase on the 100-point democracy scale is associated with a .8% decrease in the incarceration rate. The model explains approximately one-fourth of the variation in cross-national incarceration rates.

Table 6: OLS Regression of (ln) Incarceration Rates on Organization

Variable	b	SE	B
Democracy Index	-.008*	.004	-.330
Male to Female Ratio	-.027	.019	-.190
Median Age	-.022	.014	-.269
Homicide Rate	.034**	.011	.372
Intercept	7.180	2.034	
		Adjusted R^2 = .247	

*p < .05, **p < .01

Informal Social Control.

Table 7 reports regression results for Donald Black's fifth and final social dimension: informal social control. Normative convictions appear to have no association with incarceration rates (b = -.017, B = -.018, p = .927). Normative consensus demonstrates a somewhat substantial, though non-significant, positive association with incarceration rates (b = .146, B = .210, p = .240). Because the concept of "informal social control" can be difficult to conceptualize and operationalize, some prior research has used homicide rates as an inverse proxy measure, arguing that the homicide rate reflects the degree to which institutions of normative control have broken down; to the extent the homicide rates are a valid and reliable proxy (which is debatable), the

partial model supports Black's hypothesized inverse relationship (b = .033, B = .359, p < .01). Overall, this model explains 15.5% of the variance in incarceration rates.

Table 7: OLS Regression of (ln) Incarceration Rates on Informal Social Control.

Variable	b	SE	B
Normative Convictions	-.017	.185	-.018
Normative Consensus	.146	.123	.210
Male to Female Ratio	-.041*	.018	-.285
Median Age	-.001	.015	-.017
Homicide Rate	.033**	.011	.359
Intercept	8.406	2.509	
		Adjusted R^2 = .155	

*p < .05

Full Models.

Table 8 reports ordinary least squares regression for full models, which incorporate measures of all five social dimensions. The two models differ only in the functional form of the relationship between ethnic heterogeneity and incarceration rates. The first model explores a linear relationship between heterogeneity and incarceration, whereas the second model introduces a squared term for ethnic heterogeneity, modeling the hypothesized curvilinear relationship. As with the partial models, due to positive skew the dependent variable is log-transformed (using the natural log), which normalizes the distribution and residuals.[21]

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[21] A Shapiro-Wilk W test indicates normality (W = .984, p = .528).

Table 8: OLS Regression of (ln) Incarceration Rates on all Study Variables (N=66)

Variable	Linear Model			Quadratic Model		
	b	SE	B	b	SE	B
GINI Index	.041***	0.010	.526	.040***	.009	.509
Real GDP Per Capita[†]	-.106	.093	-.212	-.029	.089	-.058
Unemployment Rate	-.005	.005	-.102	-.005	.005	-.117
Ethnic Heterogeneity	.547	.332	.190	3.803***	1.043	1.318
Ethnic Heterogeneity^2	—	—	—	-4.206**	1.288	-1.193
Urban Population	-.008	.005	-.240	-.008	.005	-.249
Urbanization Rate	-.093	.092	-.195	-.062	.085	-.130
School Life Expectancy	.193***	.046	.836	.165***	.043	.715
Religiosity	-.264	.165	-.257	-.015	.003	-.270
Scientism	-.221	.163	-.172	-.216	.149	-.168
Democracy Index	-.017***	.004	-.685	-.015***	.003	-.602
Normative Convictions	.301	.212	.319	.286	.194	.303
Normative Consensus	.251*	.114	.360	.242*	.104	.349
Male to Female Ratio	-.008	.019	-.056	-.007	.018	-.053
Median Age	.010	.021	.121	.006	.019	.071
Homicide Rate	.005	.010	.049	.005	.010	.056
Intercept	5.220	2.752		5.075	2.520	
	Adjusted R^2 = .547			Adjusted R^2 = .620		

†Re-scaled to $10,000 per capita, *p < .05, ** p < .01, ***p < .001

Overall, the linear model provides mixed support for Black's theory of law. Income inequality (the Gini index) is significantly associated with incarceration rates, consistent with expectations (b = .041, B = .526, p <.001). However, the other stratification variables—real GDP per capita and the unemployment rate—are not significant. Ethnic heterogeneity does not demonstrate a linear relationship with incarceration (b = .547, B = .190, p = .105). Of the five measures of culture, only one—school life expectancy—demonstrates significant effects (b = .193, B = .836, p < .001). The significant effect of the Gastil democracy index (b = -.017, B = -.685, p < .001) indicates that more democratic nations also tend to be less carceral. Finally, the linear model indicates that a mean measure of normative values bears no relationship with incarceration rates, but a measure of normative dispersion does (b = -.251, B = .360, p < .05). The direction of the relationship indicates that nations with more value disensus—where citizens tend to disagree about the justifiability of certain types of behaviors—incarceration rates are actually lower. The negative direction of this relationship suggests that informal social control is *directly*—not inversely—related to formal social control, which contradicts hypotheses derived from Black's theory of law and Pound's theory of social control, but rather supports Durkheim's theory that informal and formal social control are mutually reinforcing expressions of social cohesion.

The second model re-examines these relationships after accounting for the curvilinear effects of ethnic heterogeneity on incarceration. Compared to the linear model, several observations are noteworthy. First, while there is no linear relationship between ethnic heterogeneity and incarceration, there is strong support for a curvilinear function; both the linear and squared terms are statistically significant (ethnic heterogeneity: b = 3.803, B = 1.318, p <

.001; ethnic heterogeneity^2: b = -4.206, B = -1.183, p < .01). The most homogenous and most diverse societies demonstrate the smallest incarceration rates, whereas nations with a moderate degree of diversity demonstrate the highest.

Second, the overall fit of the model significantly improves: adjusted R^2 jumps from .547 in the linear model to .620 in the curvilinear model, a change which is statistically significant according to an F-test (F = 10.655, p < .01). This reiterates the importance of model specification in theory tests; to date, no other study has specified the curvilinear relationship between morphology and legal outcomes, as proposed by Black.

The patterns of significance and the sizes of the coefficients in the curvilinear model remain similar to the linear model for the other covariates. Economic inequality (b = .040, B = .509, p < .001), but not other measures of stratification, significantly predicts higher incarceration rates. A one-point increase in the Gini coefficient is associated with a 4.1% increase in the incarceration rate. School life expectancy (b = .165, B = .715, p < .001), but not other measures of culture, significantly predicts higher incarceration rates. A one-year increase in school life expectancy is associated with a substantial 17.9% increase in the incarceration rate. Democracy is inversely related to incarceration rates (b = -.015, B = -.602, p < .001). A 1-point increase in the 100-point democracy scale is associated with a 1.5% decrease in incarceration rates. Normative consensus (b = .242, B = .349, p < .05) is associated with significantly higher incarceration rates, but normative convictions are not significant. A one standard deviation increase in normative consensus is associated with a 27.4% increase in incarceration rates.

Model diagnostics suggest no violations of OLS assumptions. All VIF values fall below 10, indicating that multicollinearity is not a problem (Hair et al. 1995).[22] Visual examination of P-P plots indicate normally distributed errors, and visual examination of the scatterplot of the residuals indicates homoskedasticity (see Appendix D). A Breusch-Pagan Test also indicates homoskedasticity, where $\chi^2 = 0.01$, p = .914 for the curvilinear model.

Table 9 summarizes the results from both partial models and full models, and serves to illustrate where partial/full-models converged/diverged, as well as whether core hypotheses were supported or refuted. For the most part, partial and full models tell similar stories. There are two notable exceptions: the unemployment rate was significant in a partial model, but non-significant in the full model; and the normative consensus measure was non-significant in a partial model, but significant in the full model. This suggests that these variables are confounded with other theoretically-relevant variables appearing in the full model. For instance, the unemployment rate is rather strongly, negatively associated with school life expectancy (r = -.458); that is, nations with longer student tenures also demonstrate lower unemployment rates. Likewise, normative consensus and ethnic heterogeneity are moderately correlated (r = -.273), indicating that ethnic diversity is also associated with less normative consensus—which comes as little surprise. After controlling for such diversity—especially its nonlinear effects on incarceration rates—normative consensus *does* demonstrate an association with incarceration rates. That is, normative consensus demonstrates explanatory power only when considering its effects *independent* of any consensus/dissensus produced by ethnic heterogeneity.

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[22] One exception is for models with quadratic terms; ethnic heterogeneity and its square demonstrate large VIFs. Multicollinearity is only a problem when attempting to estimate the independent effect of predictors which happen to be correlated; the present study does not attempt to estimate a change in ethnic heterogeneity *independently* of its square, but only in *conjunction* with a change in its square.

Table 9: Summary of key findings, partial and full models

Dimension	Variable	Hypothesized Relationship with Incarceration Rates	Observed Relationship—Partial Model	Observed Relationship—Full Model
Stratification	GINI Index	+	+	+
	Real GDP Per Capita	+	X (-)	X (-)
	Unemployment Rate	+	-	X (-)
Morphology	Ethnic Heterogeneity	∩	∩	∩
Culture	Percent Urban	+	X (-)	X (-)
	Urbanization Rate	+	X (-)	X (-)
	School Life Expectancy	+	+	+
	Religiosity	+	X (-)	X (-)
	Scientism	+	X (+)	X (-)
Organization	Gastil Democracy Index	-	-	-
Informal Social Control	Normative Convictions	-	X (-)	X (+)
	Normative Consensus	-	X (+)	+

+ positive association; - negative association; ∩ curvilinear relationship; X non-significant relationship

Supplemental Analyses

As described in the previous chapter, the limiting data source used in this study is the World Values Survey, which is not conducted in all nations. The results obtained from the full theoretical model, which include a sample of 66 out of a total of over 200 world nations, may be affected by sampling bias. In this section, I explore the potential for sampling bias by conducting missing data analysis, and re-examining regression models among a larger sample of nations with some limiting variables removed. I also examine the effects of outliers on regression results. Finally, I present a reduced model in order to reduce threats of model overfit.

Missing data analysis suggests some modest differences between the 66 nations included in the full theoretical model and other nations that are excluded. Table 10 summarizes the descriptive statistics and t-tests for these nations. Incarceration rates do not differ between included and excluded nations (175.08 vs 176.78, $p = .929$). There are also no significant differences with regard to real GDP, unemployment rates, ethnic heterogeneity, urban population, democracy, or homicide rates. However, nations excluded from the full theoretical model do tend to demonstrate more income inequality (Gini: 38.1985 vs. 41.638, $p < .05$) a higher rate of urbanization (1.51% vs 2.15%, $p < .01$), a lower school life expectancy (13.32 years vs 11.93 years, $p < .01$), a higher ratio of males to females (97.3 vs. 101.5, $p < .05$), and a lower median age (31.36 years vs. 27.81 years, $p < .01$).

Table 10: Descriptive Statistics and t-tests of Included and Excluded Nations in Full Theoretical Model

		Nations included in Full Theoretical Model				Nations Excluded from Full Theoretical Model			Comparison of Means		
Variable	N	Range	Mean	S.D.	N	Range	Mean	S.D.	Mean diff.	|t|	S.E.
Incarceration Rate	66	33 - 655	175.080	120.492	145	10 - 618	176.780	130.994	1.704	.090	18.980
Incarceration Rate (Ln)	66	3.497-6.485	4.943	.696	145	2.303-6.426	4.890	.805	.053	.467	.115
Gini Index	66	23 - 65	38.199	8.873	100	26-71	41.638	9.669	3.440	2.317*	1.485
Real GDP per capita	66	$400 - 59,100	$15,174	13,937.821	158	$300 – 145,300	$15,848	20,875	673	.241	2,800
Unemployment Rate	66	.900 – 95%	12.068	15.481	134	0 – 90%	14.442	15.228	2.374	1.031	2.303
Ethnic Heterogeneity	66	0 - .851	.388	.241	141	0 - .930	.398	.291	.010	.242	.041
Percent Urban	66	13 - 100%	60.803%	20.997	156	0 – 100%	56.071%	26.053	-4.733	1.307	3.622
Urbanization Rate	66	-1.500 - 5%	1.509%	1.465	156	-.8 – 6.80%	2.146%	1.579	.636	2.803**	.227
School Life Expectancy	66	6 - 21	13.318	3.019	120	5 - 18	11.933	2.958	-1.385	3.033**	.457
Gastil Democracy Index	66	7 - 100	62.230	28.547	131	3 - 98	58.640	30.099	-3.586	.803	4.467
Male to Female Ratio	66	84 - 108	97.3	4.9	161	86 – 220	101.5	14.4	4.1	2.262*	1.8
Median Age	66	16.200 - 44.600	31.356	8.401	161	15.000 – 48.900	27.808	8.289	-3.549	2.918**	1.216
Homicide Rate	66	.375 - 33.988	5.698	7.507	144	0 – 65.428	8.261	11.255	2.563	1.685	1.521

*p < .05 ** p < .01

Sensitivity analysis is conducted by re-evaluating the full OLS regression models among a larger sample of nations, though necessarily consists of only a partial theoretical model. Variables collected from the World Values Survey (including religiosity, scientism, and normative scales) are responsible for most of the missing cases in the full theoretical models presented earlier due to listwise deletion, so these variables are not included. The exclusion of these 4 variables nearly doubles the sample size to N = 127. Table 11 reports the results of the sensitivity analysis. The results largely reinforce the results observed in the full theoretical model with the smaller sample. Comparison of linear and curvilinear models once again indicate that the correct model specification involves a curvilinear relationship between ethnic heterogeneity and incarceration rates, evidenced by the statistically significant quadratic term (ethnic heterogeneity: b = 3.202, B = 1.150, p < .001; ethnic heterogeneity^2: b = -3.594, B = -1.090, p < .001) as well as the improved R^2 (.417 vs .481, F = 15.217, p < .001). For that reason, the results that follow focus exclusively on the curvilinear model, which correctly specifies this quadratic relationship.

The pattern of significance observed in the sensitivity analysis mostly mirrors the full theoretical model presented in Table 8. The GINI index predicts significantly more incarceration (b = .030, B = .426, p < .001), where a 1-point increase on the GINI index is associated with a 3% increase in the incarceration rate. Ethnic heterogeneity once again predicts an inverse-U-shaped relationship with incarceration rates (ethnic heterogeneity: b = 3.202, B = 1.150, p < .001; ethnic heterogeneity^2: b = -3.594, B = -1.090, p < .001). School life expectancy (but not two measures of urbanism) predicts higher incarceration rates (b = .093, B = .396, p < .01); a 1-year increase in school life expectancy is associated with a 9.7% increase in the

incarceration rate. More democratic nations are less punitive (b = .006, B = -.249, p < .01), where each point on the democracy scale is associated with an increase of .6% in the incarceration rate. For the most part, the pattern of results suggests that the full theoretical model is unbiased.

Table 11: OLS Regression Sensitivity Analysis: Partial Model with Larger Sample (N=127)

Variable	Linear Model b	SE	B	Curvilinear Model b	SE	B
GINI Index	.032***	.006	.457	.030***	.006	.426
Real GDP Per Capita[†]	-.136***	.040	-.348	-.124***	.038	-.316
Unemployment Rate	-.009*	.004	-.212	-.006	.004	-.130
Ethnic Heterogeneity	.382	.222	.137	3.202***	.753	1.150
Ethnic Heterogeneity^2	—	—	—	-3.594***	.921	-1.090
Urban Population	.001	.003	.021	.002	.003	.062
Urbanization Rate	-.095	.060	-.208	-.063	.057	-.137
School Life Expectancy	.096**	.032	.411	.093**	.030	.396
Democracy Index	-.007**	.002	-.276	-.006**	.002	-.249
Male to Female Ratio	-.001	.014	-.008	.002	.013	.014
Median Age	.012	.014	.148	.009	.013	.107
Homicide Rate	.005	.005	.094	.003	.005	.054
Intercept	2.897	1.460		2.237	1.387	
	Adjusted R^2 = .417			Adjusted R^2 = .481		

†Re-scaled to $10,000 per capita, *p < .05, ** p < .01, ***p < .001

A notable divergence from the full theoretical model involves the significance of real GDP per capita; with the larger sample, this variable attains significance (b = -.124, B = -.316, p < .001). Every $10,000 increase to real GDP per capita is associated with a 12.7% decline in the incarceration rate. With regard to real GDP and incarceration rates, the difference observed between the model with all covariates and the restricted model with a larger sample may be a result of sampling bias, or because real GDP is confounded with religiosity, scientism, or normative values. The latter appears more likely; there are no significant differences in incarceration rates and GDP between included and excluded nations (Table 10), but there are significant and sizable correlations between GDP and religiosity (.652), scientism (-.401) and the strength of normative convictions (.565); see Table 2.

The influence of outliers was examined in a model appearing in Table 12. Three nations were identified as potential outliers (defined as having incarceration rates outside 1.5 times the interquartile range) due to their very high incarceration rates: the U.S. (655); Thailand (553); and Rwanda (464). The model in Table 12 re-introduces the World Values Survey measures and otherwise reproduces the model appearing in Table 8, but without these three outliers. The results show the same patterns of statistical significance, the direction of coefficients do not change (with the exception of the non-significant Male to Female ratio), and the model fit remains high. This provides good evidence that outliers do not bias the full model appearing in Table 8.

Table 12: OLS Regression of (ln) Incarceration Rates, Outliers Removed (N=63)

Variable	b	SE	B
GINI Index	.029**	.009	.403
Real GDP Per Capita[†]	-.169	.096	-.356
Unemployment Rate	-.002	.005	-.053
Ethnic Heterogeneity	2.492*	1.040	.950
Ethnic Heterogeneity^2	-2.707*	1.283	-.844
Urban Population	-.003	.005	-.106
Urbanization Rate	-.073	.080	-.166
School Life Expectancy	.159***	.041	.758
Religiosity	-.178	.145	-.192
Scientism	-.226	.144	-.191
Democracy Index	-.014	.003	-.611
Normative Convictions	-.247	.195	-.287
Normative Consensus	.646*	.311	.350
Male to Female Ratio	.015	1.660	.001
Median Age	.012	.019	.154
Homicide Rate	.014	.009	.168
Intercept	5.607	2.393	

Adjusted R^2 = .620

†Re-scaled to $10,000 per capita, *p < .05, ** p < .01, ***p < .001

Finally, a reduced model is presented in Table 13. Given the large number of variables in the full model, and the modest sample size, there is risk of overfitting the model (Babyak, 2004). Both single-dimension models and full-theoretical models presented earlier demonstrate a rather consistent pattern of results. Guided by these results, the reduced model incorporates only those variables found to be statistically significant in previous models and removes the several non-significant variables. The results reinforce the pattern of observations found earlier. Economic inequality, ethnic heterogeneity (in a curvilinear form), school life expectancy, democracy, and normative consensus are significant predictors of incarceration rates. Overall model fit falls by 2.4% compared to the full model ($R^2 = .596$).

Table 13: OLS Regression of (ln) Incarceration Rates, Reduced Model (N=66)

Variable	b	SE	B
GINI Index	.037***	.007	.473
Ethnic Heterogeneity	4.480***	.963	1.552
Ethnic Heterogeneity^2	-4.753***	1.203	-1.348
School Life Expectancy	.158***	.028	.684
Democracy Index	-.011***	.003	-.467
Normative Consensus	.112*	.058	.161
Intercept	1.384	.444	

Adjusted $R^2 = .596$

†Re-scaled to $10,000 per capita, *p < .05, ***p < .001

Overall, the missing data analysis, sensitivity analysis, outlier analysis, and reduced model suggest that the full theoretical model tested in Table 8 is satisfactory. In fact, the full

model predicts nearly two-thirds of cross-national variation in incarceration rates. In sum, the results provide qualified support for Black's theory of law as an explanation for cross-national variation of incarceration rates. At least one measure from each of Black's five dimensions of social life demonstrates a statistically significant relationship with (natural log) incarceration rates. Problematically for Black's theory, one of these operates in an opposite direction than hypothesized: normative consensus (as evidence of the efficacy of informal social control) is associated with *more* incarceration, rather than the inverse relationship that Black proposes. Furthermore, many variables presumed to measure stratification and culture (including real GDP, unemployment, urbanicity, religiosity, and scientism) do not demonstrate significant relationships with incarceration rates. A full discussion of these results, as well as their implications, proceeds in the following chapter.

CHAPTER SIX:
DISCUSSION

This study evaluated the structural and cultural factors that predict differences in incarceration rates throughout the world. Using Black's *The Behavior of Law* as its starting point, and informed by other theories with conceptual overlap (including theories of class conflict, minority conflict, political power, cultural symbolism, and informal social control), this study evaluated the association of twelve measures within five social "dimensions" (plus several control variables) with incarceration rates in 66 nations. The study addressed how well five social dimensions from Donald Black's The Behavior of Law predict cross-national incarceration rates.

The discussion is separated into several sections. First, I provide an overview of the results and implications for Black's theory of law. Second, I review each dimension in more detail, and discuss the implications for analogous theories in the sociology of punishment. Third, I discuss "American exceptionalism" regarding incarceration rates. Finally, in a broader discussion of this study's limitations, I identify implications for data collection and analysis in cross-national criminal justice research.

The Behavior of Law

The results of this study provide support for some predictions made by Black's theory of law, but provide no support for many others. In the subsections that follow, I describe how the study results and their overall comportment with Black's theory, their implications for

macrosocial and cross-national research, and the implication of model specification in theory tests.

Theoretical Evidence.

Donald Black identifies five broad domains of social life, which he calls "dimensions": stratification, morphology, culture, organization, and informal social control. The results of this study suggest such a broad theory may cogently synthesize a number of areas of scholarship. In one form or another, *each of his dimensions is associated with the scale of carceral systems throughout the world*. Consistent with his hypotheses, the following relationships emerge:

- Nations with higher economic inequality demonstrate higher incarceration rates.

- Ethnic diversity demonstrates a curvilinear relationship with incarceration rates—lowest in nations with substantial homogeneity and substantial diversity.

- A nation's school life expectancy (a measure of educational tenure) is positively associated with its incarceration rate.

- Democracy is negatively associated with incarceration rates—when political organization is structured around organization of citizens rather than concentrated central organization, incarceration rates are lower.

- Normative consensus as associated with higher incarceration rates—the more citizens agree with each other that some behaviors are unjustifiable, the more criminals are incarcerated.

The results, however, do not provide support for many of Black's claims. It is noteworthy that, for social dimensions with multiple measures (including stratification, culture, and informal social control), many measures do not operate as hypothesized. For instance, national wealth and

unemployment are unrelated to incarceration rates. So are most measures of culture, including urbanism, scientism, and religiosity. Normative convictions are not associated at all with incarceration rates, and normative consensus operates contrary to Black's claims. (A more detailed discussion of each dimension and measure will follow in another section. The unsupportive results regarding informal social control, especially, have implications for a number of theories, and are therefore given a more in-depth examination later.)

Despite these discrepancies, some claims appearing in *The Behavior of Law* appear defensible based on the results of this study. It is worth noting that the measures attaining significance in this study are often the ones Black particularly emphasizes. For instance, this study incorporated three measures of social stratification: inequality; national wealth; and unemployment rates. Black emphasizes the role of inequality in the construction of law and punishment, and indeed defines stratification as "inequality of wealth" (1976, p. 11). He says much less about the influence of national wealth, and nothing specifically about the role of unemployment. Similarly, Black's discussion of culture emphasizes education as an indication of culture more than its various other indicators, such as urbanism and religion (1976, Ch. 4). In short, although Black may overstate his case by suggesting a myriad of measures getting at each dimension, areas of special emphasis are supported in this study.

Level of Analysis.

The results suggest Black's theory of law shows promise as a macrosocial theory of law and punishment. Currently, only 7 extant studies have tested Black's theory at the macrosocial level, whereas 27 have used an individual level of analysis. Of the 7 macrosocial tests, only one (examining antitraffiking statutes; Wooditch, 2012) has made cross-national comparisons. The

lack of macrosocial and cross-national research is somewhat surprising, given that *The Behavior of Law* heavily cites from macrosocial theories in the sociology of law and punishment, and also provides evidence from a large cross-national anthropological literature. Furthermore, macrosocial tests, few as they are, have generally provided more consistent support for Black's hypotheses than have micro-level tests. The present study provides further evidence that Black's theory provides a suitable, systematic, macrosocial framework for the study of punishment systems across societies. In fact, the total variance explained—nearly two-thirds—suggests that, as a model, Black's theory of law has good explanatory power. Implications for ethnocentric theory and American Exceptionalism will be discussed further in a following section. For now, it is simply important to note that this study has theoretical implications relevant to the understudied area of cross-national criminology.

Specification.

This study also has research implications regarding model specification in tests of Black's theory of law. As noted in Chapter 2, most prior tests suffer from two significant challenges. First, fully half of prior studies have involved partial tests, omitting one or more of the social dimensions central to the theory. Second, *none* of the prior tests have modeled the hypothesized curvilinear relationship between morphology and social control. The results of this study provide evidence that these problems are non-trivial. For instance, models that include stratification measures but omit cultural or normative measures (see Tables 3 and 11) find statistically significant relationships between incarceration rates and GDP or unemployment. Nonetheless, when such variables are included, these relationships disappear (see Table 8). Consider also that there is no relationship between incarceration rates and normative consensus in a partial model,

but this relationship becomes significant after controlling for ethnic diversity, which accounts for at least some portion of normative variation (compare Tables 7 and 8). These results provide evidence of spurious relationships, and suggests that omitted variable bias may be a legitimate specification problem.

The problem of misspecification is also evident in models comparing the functional form of the relationship between incarceration rates and morphology (or the distribution of a nation's citizens). The models in Tables 4, 8, and 11 all indicate that ethnic diversity bears no *direct* relationship with incarceration rates, but rather bears an inverse-U-shaped relationship. Given that no prior test of Black's theory has attempted to model this relationship, this study provides crucial evidence not only for the support of a key theoretical proposition, but also implications for the importance of model specification in tests of the theory. A significant jump in total explained variance is also observed, speaking to the importance of specification when considering models of social behavior. As Chapter 2 indicated, some scholars have dismissed Black's theory; in light of the fact that every one of these models has been misspecified, and given the results of the present study, such dismissals may be premature.

In response to the question, "How well does Donald Black's *The Behavior of Law* predict cross-national incarceration rates?," this study finds mixed or limited support. Black's theory, at its core, argues that five broad dimensions of social structure influence law and punishment, including incarceration. The results of this study indicate that each dimension is relevant to incarceration rates. Furthermore, overall model fit suggests that the theory, overall, establishes a rather good model of the scale of incarceration. However, Black identifies a number of indicators that purportedly measure each of these dimensions, and many of them bear no relationship with

incarceration rates. Critically, one measure—a measure of normative consensus—appears to have substantial and significant effects in a direction opposing theoretical propositions.

The Sociology of Punishment

This study speaks to a number of broad social dimensions and their association with punishment. While the previous section speaks to Black's theory *in toto*, this section provides a more nuanced discussion of the results, and the implications of these results for other theories. This section is organized around the five social dimensions Black identifies, and their related or analogous theories.

Stratification and Class Conflict.

This study considered ways nations may be economically structured or stratified: income inequality, GDP per capita, and unemployment. Each of these measures speaks to economic conditions that structure the relationships within and between societies. The results of this study indicate that economic inequality is significantly associated with incarceration rates in a variety of model specifications (see Tables 3, 8, 11, and 12). In addition to providing support for Black's theory of law, the results speak to other critical theorists of class, conflict, and social control. A number of theorists suggest that the criminal justice system is a tool utilized by the wealthy, powerful, and influential to exercise control over the poor and powerless (Quinney & Sheldon, 2018; Chambliss & Seidman, 1971; Garland, 1990). In short, wealth equates to power, and such power is used to promote special interests while suppressing the interests of the lower classes. Where the distance between the wealthy and the poor is greatest, there is also a greater distance in power, conflict, and control. Indeed, this study joins a chorus of others which find that economic inequality is a consistent predictor of incarceration as social control (Healy, Mulcahy,

& O'Donnell, 2013; Killias, 1986; Krus & Hoehl, 1994; Lappi-Seppälä, 2008; Lappi-Seppälä, 2010; Miller, 2013; Van Kesteren, 2009; Wilkins & Pease, 1987; Wilkinson & Pickett, 2007).

Other measures of economic structure, however, do not demonstrate the same support regarding economic structure and punishment. For instance, the results of this study indicate that real GDP per capita—a measure of economic output—demonstrates a *negative* or *null* relationship with incarceration rates (see Tables 11 and 8, respectively). This seems to contradict some conflict theorists' claims that punishment will be higher in societies where capitalism is most developed (e.g., Chambliss, 1964; 1968). Furthermore, while wealthier nations might plausibly have higher incarceration rates simply because they have more economic resources to house prisoners, such a phenomenon does not bear out in this study.

The results of this study also challenge Rusche and Kirchheimer's (2003) hypothesis regarding unemployment and incarceration. Consistent with other studies (Chiricos and Delone, 1992; Neapolitan, 2001), this study finds that unemployment rates demonstrate a *negative* or *null* relationship with incarceration rates (see Tables 2 and 8, respectively). Rusche and Kirchheimer suggested that incarceration rates are positively associated with unemployment rates because unemployment contributes to surplus labor and drives down wages. When labor is plentiful and cheap, the social and economic costs of incarceration are relatively lower. When labor is scarce and wages are high, high incarceration rates work against the interests of the controlling classes. Rusche and Kirchiemer also suggested an underlying "principle of less eligibility," which posited that punishment tended to improve or worsen with the general conditions of society; that is, when conditions for the general public deteriorate, punishment tends to become harsher, and vice versa.

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One possible explanation for the unexpected results obtained here may relate to decommodification. A number of societies provide social safety nets that provide income or other benefits to unemployed individuals. This serves to smooth out fluctuations in the value of labor and reduces economic inequality (which, as mentioned previously, is associated with incarceration rates). Furthermore, such social welfare may nullify any "principle of less eligibility" by minimizing drastic deteriorations to living conditions during bouts of high unemployment. While this study did not measure or address such forms of decommodification, it may be a fruitful avenue of inquiry. Existing theories of social control which relate to economic structure may require elaboration in light of these newer forms of social governance that may moderate the hypothesized stratification effects of economic conditions.

The results of this study indicate that the most direct measure of economic stratification—income inequality—is associated with incarceration rates, but that more indirect measures of such stratification—GDP per capita and unemployment—are not. Why might economic inequality contribute to incarceration rates? Wealth and power are practically synonymous, even in democratic nations (Merton, 1938). Where the differential of wealth is large, so too is the differential of power. Ultimately, incarceration consists of one of the ultimate exercises of governmental power.

Morphology and Ethnic Conflict.

According to Donald Black, morphology refers to the way people are differentiated and integrated in society. Ethnicity is one such form of distribution and differentiation. Analogous sociological theories also speak to this phenomenon. For instance, Blalock's (1967) racial threat theory describes how social control can be a function of minority group size. Horowitz (1990)

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applies similar ideas to international contexts, describing social conflict as a function of ethnic fractionalization. Importantly, all three theorists describe these relationships as nonlinear.

The results of this study indicate that incarceration rates are associated with ethnic composition, lending support to minority conflict theories. The results also indicate strong support for a nonlinear relationship. Incarceration rates are lowest for the most homogeneous and most diverse nations, and highest for nations with moderate diversity. Two figures graphically demonstrate the nature of this relationship. Figure 1 displays the bivariate relationship between ethnic heterogeneity and log incarceration rates. The U.S. has been labeled. Although it is an outlier, it is noteworthy that the U.S., with its exceptionally high incarceration rate, also falls near the vertex of the parabola. This provides some evidence that the U.S. may not be unique, but demonstrates one of the highest incarceration rates in the world in part 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 further heterogeneity (Frey 2018).
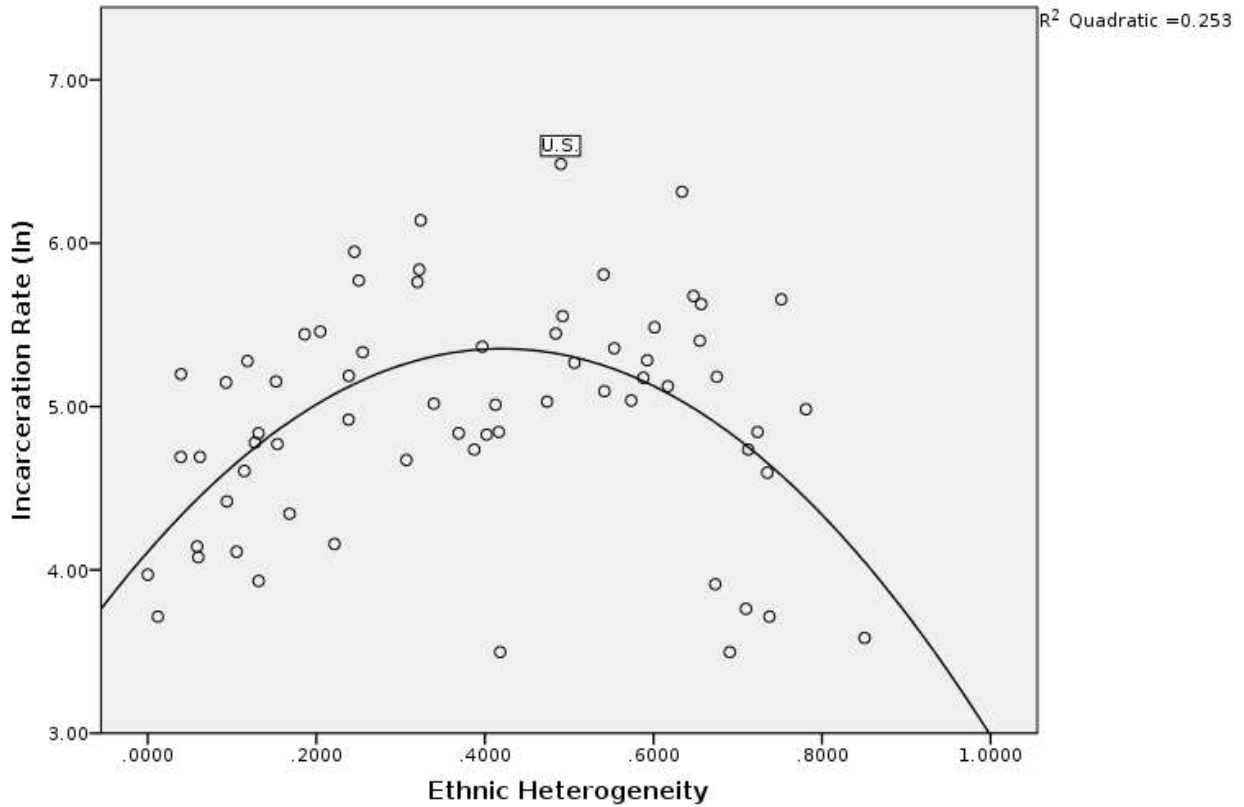
Figure 1: Curvilinear relationship between log incarceration rates and ethnic heterogeneity

Figure 2 uses predicted values, rather than actual incarceration rates, in order to control for various confounders; it compares ethnic fractionalization to the predicted incarceration rate after accounting for all other variables in the model. While the U.S. is no longer an outlier, it is still an above-average incarcerator, and ethnic fractionalization very closely predicts its incarceration rate after accounting for other variables. (Further discussion of American Exceptionalism follows in a subsequent section.)
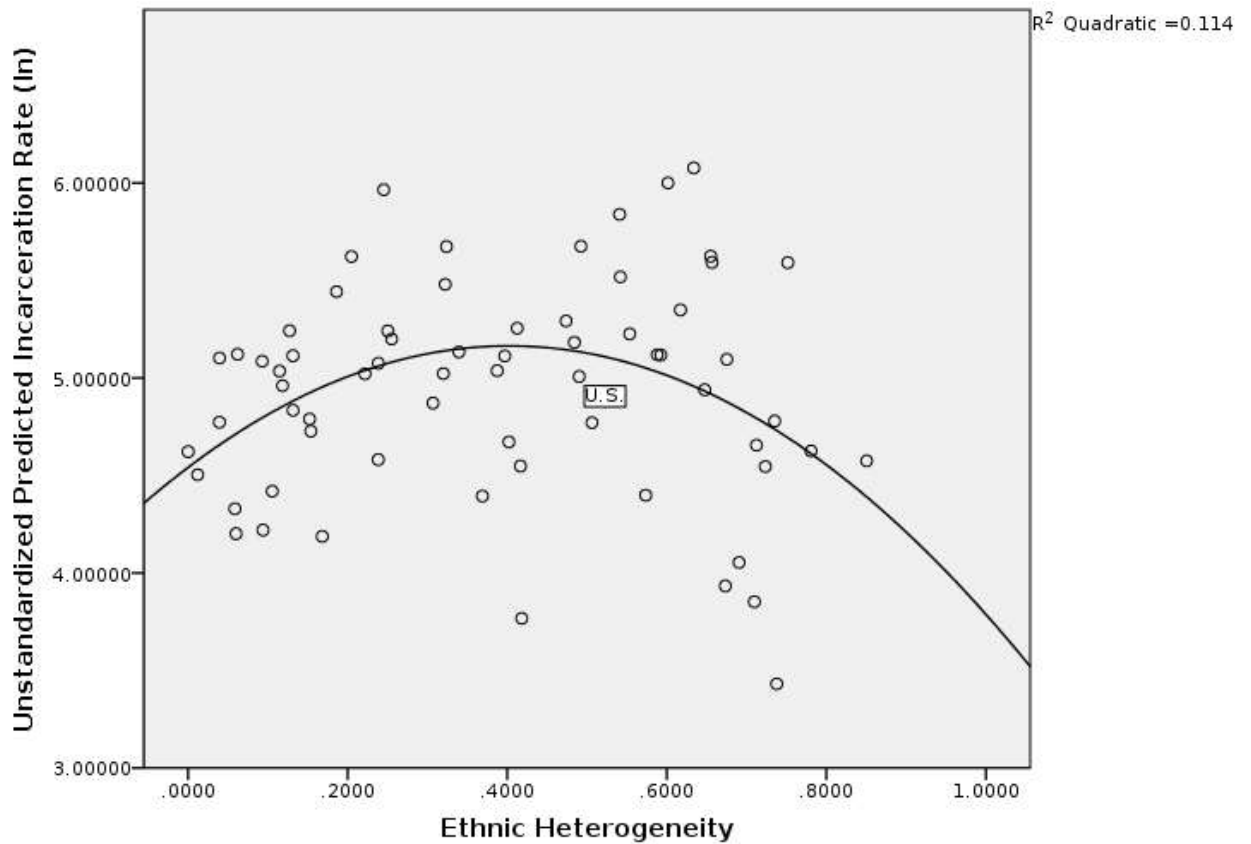
Figure 2: Curvilinear relationship between predicted log incarceration rates and ethnic heterogeneity

Such a curvilinear relationship may be due to the way ethnic composition contributes to power and conflict. In homogenous nations, minority groups are small or absent, presenting little to no opportunity for social conflict between ethnic groups. As diversity increases, conflict becomes increasingly likely: minority groups are not only more visible, but compete for economic resources, political power, and normative influence. Nonetheless, this trend ultimately reverses: eventually, diversity reaches a point where a majority group does not exist, and

therefore reduces the ability for a single ethnic group to dominate social power and subordinate other groups.

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).

Practically, the results suggest that multiculturalism may translate to lower incarceration rates. Indeed, the late twentieth and early twenty-first centuries have been characterized by globalism and migration. Given that the most diverse societies demonstrate the lowest incarceration rates, reductions in incarceration may be a plausible outcome in nations that embrace diverse, multicultural societies, which tend to diffuse power from a single ethnic majority.

Culture, Symbolism, and Meaning-Making.

The results of this study provide rather little support that law and punishment is a function of the symbolic dimension of social life. Donald Black claims that a myriad of indicators provide evidence of culture: education, religion, science and technology, and even urbanism. With the exception of school life expectancy, however, none of the measures of culture used in this study appear to be associated with incarceration rates.

Why might school life expectancy be associated with incarceration rates? On its face, it might appear a contradiction that a society which values its citizens enough to provide more education would simultaneously devalue its citizens such that it incarcerated more of them. However, schools and prisons are both government institutions, and so it may be possible that all core government services grow in tandem. Speaking more directly to the symbolic aspect of social life, the positive association between education and imprisonment observed in this study has implications for Durkheim's (2014) statements on the role of institutions and collective conscience. Writing during a time when many scholars saw rapid modernization as contributing to an erosion of social cohesion, Durkheim argued rather that "organic" societies—those demonstrating increasing specialization and differentiation—actually reinforced social cohesion, albeit in different ways than religious and pastoral ("mechanical") societies. For Durkheim, the differentiation appearing in both economic systems and government systems served to reaffirm collective values. The positive association between education and incarceration observed in this study may be evidence of such a phenomenon: education serves to both represent and reinforce values such as investment in long-term outcomes over short-term gains, care and concern for development of the young, and the holistic development of human potential. Likewise, prisons

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serve to both represent and reinforce collective values: the prohibition and punishment of certain acts reaffirms the human dignity of victims and publicly communicates disapproval of harms that result when people choose short-term and self-interested gains over long-term and social wellbeing. In short, the association observed in this study may simply reflect a broader, underlying phenomenon that represents the way modern societies employ formal institutions that are both a cause and consequence of broader symbols, values, and meanings. The institutions themselves are symbolic expressions, and represent evidence of social solidarity in organic societies.

Relatedly, Durkheim's statements regarding institutional symbolism may be relevant to the null relationships between urbanism and incarceration. The correlations in Table 2 indicate that school life expectancy is highly correlated with both percent urban and the urbanization rate. Note that Black argues that urban areas have "more culture." While urbanism may indeed be associated with symbolic cultural institutions such as the school, the results of this study provide no evidence that urbanism itself is related to incarceration rates. It is also commonly noted that crime rates are highest in urban areas; presumably, urbanism would therefore contribute to incarceration rates indirectly through its contribution to crime. The results of this study challenge such notions, however; indeed, even the bivariate relationship between percent urban and homicide was nearly zero (Table 2).

Several scholars have suggested that scientism—an overconfidence in science and technology—may contribute to higher levels of punishment. For instance, Rothman (1971; 2017) identified emerging social sciences as influencing criminal justice reform in America that led to dramatic expansions of institutionalization of criminals and mentally ill persons. Foucault (2012)

similarly identified scientific disciplines as a source for carceral expansion in France. Salvatore and Aguirre (2010) have argued that the expansion of imprisonment in Latin America was also fueled by the influence of criminological and psychological sciences. However, despite the historical evidence provided by these scholars, no prior study has systematically examined the relationship between scientism and punishment. The results of this study do not lend strong support for these theories, although further examination is warranted. Regression models suggest a modest, positive association between scientism and incarceration rates (Tables 5 and 8). However, the coefficients do not attain statistical significance. Future studies might incorporate at least two improvements. First, a larger sample of nations is desirable; limited by the World Values Survey, this study examines the attitudes of residents in fewer than a third of all world nations. Second, the measure of scientism could be improved. The measures used in this study captured citizens' level of agreement that "Science and technology are making our lives healthier, easier, and more comfortable" and "Because of science and technology, there will be more opportunities for the next generation." These measures are rather indirect, and fail to fully measure the extent to which the advancement of social science, in particular, is associated with social policy.

Religion is the final measure of culture considered in this study. Donald Black argues that more religious societies have more culture, and thus, more law and punishment. Other scholars have also observed an association between religiosity and punitiveness (e.g., Garland, 1990; 2001). The results of this study, however, do not reveal an association between citizens' evaluation of the importance of religion in their lives and the rate of incarceration in their country; the relationship is both negative and non-significant (see Tables 5 and 8). Some research

indicates that religiosity itself may not be related to punitiveness; rather, what matters is the way religious belief is understood and expressed. Unnever, Cullen, and Applegate (2007) note that "those who have a rigid and moralistic approach to religion and who imagine God as a dispassionate, powerful figure who dispenses justice are more likely to harbor punitive sentiments toward offenders. In contrast, those who have a gracious or loving image of God and who are compassionate toward others—that is, those who take seriously the admonition to 'turn the other cheek'—are less supportive of 'get tough' policies" (2007, p. 304). Unfortunately, the secondary data used to assess religiosity in this study are unable to speak to such nuances. Future research may be necessary to determine whether and how religion influences punitiveness, and how such attitudes translate into actual justice outcomes such as incarceration rates.

Organization and Political Conflict.

The central contention of political conflict theories is rather simple. As social beings, people are group-loyal. Common interests and common needs lead to the formation of groups. These groups sometimes conflict with other groups with different common interests and common needs. Formal social control, as an exercise of government, requires formal power. The more concentrated that power, the more formal social control that generally follows for others, absent some organized opposition. Diffusion of power tends to have the opposite effect.

Donald Black has emphasized that social organization predicts the exercise of formal social control; it is highest where power is concentrated in more absolutist governments, and lowest where citizens are organized democratically. Durkheim (1969) similarly observed that punitiveness varied on the scale from autocracy to democracy.

The results of this study indicate that a measure of democracy—the Gastil Index—is inversely associated with incarceration rates. As Vold (2002) has argued, political conflicts in democratic systems are a sign of social order, rather than social disorder. Practically, the results suggest that efforts to promote democracy around the world, if successful, may be associated with reductions in prison populations. Unfortunately, some research suggests that democracy has been ceding ground to authoritarianism for the past decade or so (Freedom House, 2019).

Informal Social Control.

Several theories make competing claims about the relationship between informal social control and formal social control. Durkheim (2014) has argued that the two are mutually reinforcing: formal institutions reflect collective values developed within families, schools and churches, but they also *produce* such values through public and symbolic rituals that reaffirm a collective social order. Ross (2009) similarly argues that law and punishment tend to inform and influence public opinion and collective values, which in turn legitimize and reinforce the formal expression of the law.

On the other hand, Pound (1997) and Black (1976) have argued that informal social control and formal social control operate inversely. The law, fundamentally, serves as a mechanism of conflict resolution. This mechanism is most likely to be invoked where institutions of informal social control—schools, churches, families, etc.—have failed to internalize *collective* values, necessitating law as arbiter.

The results of this study provide more evidence for the claims of Durkheim and Ross than for Pound and Black. The strength of normative convictions is not related to incarceration rates; that is, incarceration rates are not higher in nations where citizens are more disapproving of

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behaviors related to theft, violence, and sex. However, normative consensus demonstrates a significant, positive relationship with incarceration rates in the full theoretical model. This suggests that punishment is a function of the degree to which citizens agree that certain behaviors are unjustifiable—in other words, the degree to which informal institutions have internalized a set of collective values.

Importantly, the relationship between normative consensus and incarceration rates only appeared in the full theoretical model (Table 8). In a model examining only informal social control and several control variables, the relationship was nonsignificant, although it likewise demonstrated a positive association (Table 7). This suggests that the influence of normative consensus is relevant *independent of the effects of other social dimensions.* For instance, it is quite reasonable to assume that normative consensus is a function of ethnic diversity: nations which are more ethnically homogenous are probably also more homogenous with regard to personal values. Indeed, the bivariate correlations presented in Table 2 support this.

The results pertaining to normative consensus and incarceration rates have several implications. First, the novel measure used in this study—derived from the standard deviation of a scale asking citizens to report their attitudes regarding controversial behaviors—demonstrates promise for research attempting to measure the distribution of norms and social solidarity within society. However, the divergence of partial and full theoretical models suggests that researchers must be cognizant of the potential for omitted variable bias in the study of group norms (and the various other factors which may be related to them). Theoretically, the results provide empirical support for Durkheim's claims regarding the relationship between social solidarity and its

expression in law and punishment. They also challenge Donald Black's theoretical proposition that informal social control is inversely related to law and punishment.

The results of this study provide partial support for critical and class conflict theories; support for minority conflict theories; relatively little support for cultural and historical theories of incarceration; support for political conflict theories; and support for Durkheim's hypotheses regarding informal social control. Importantly, some relationships diverge between full and partial models, suggesting that omitted variable bias is an important concern for theories which do not consider or control for competing explanations.

American Exceptionalism and Incarceration

The concept of American Exceptionalism is a common theme in scholarship on incarceration. Is American incarceration truly exceptional? The actual U.S. incarceration rate is, at 698 prisoners per 100,000 citizens, higher than nearly all other nations included in this study. Nonetheless, excluding the U.S. as an outlier does not substantially alter the findings of this study, suggesting that the general structural and cultural phenomena under study are truly general (compare Tables 8 and 12).

Further analysis is warranted. To explore further, the predicted and adjusted predicted incarceration rates were calculated and compared to the actual U.S. incarceration rate. The predicted incarceration rate applies the regression formulae to observed dependent variables to examine what the model would predict as an outcome. The adjusted predicted score calculates the model's ability to predict a nation's incarceration rate when that observation is not factored into the regression equation. The exponentiated predicted incarceration rate is approximately 245 prisoners per 100,000 citizens. This suggests that, when considering the measures appearing in

this study, America would be expected to have an above-average incarceration rate—although it is predicted to be nearly 60% lower than its observed incarceration rate. The exponentiated adjusted predicted U.S. incarceration rate is just 148 prisoners per 100,000. This value is nearly identical to the worldwide average of 144, and much lower than the sampled average of 177. Thus, there is evidence that America's incarceration rate is exceptional: it demonstrates the highest rate of incarceration in the world; it's predicted incarceration rate, after a consideration of twelve measures of social structure, is higher than average; and the divergence between its observed incarceration rate and predicted incarceration rate is even more dramatic when it is based only on relationships established from the rest of the world.

Evidence for American Exceptionalism has important implications for theory, research, and practice. Theories which attempt to primarily or exclusively predict incarceration rates in the U.S. may not be generalizable to other nations; given that most incarceration research focuses on the U.S., this implies substantial blind spots in sociologists' understanding of incarceration as a more general social phenomenon. It also suggests that practical recommendations to reduce prison populations will systematically differ between the U.S. and the rest of the world.

Study Limitations

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. Future studies ought to capitalize on reliable and comparable measures of crimes other than homicide in order to examine their contribution to incarceration rates. Nonetheless, cross-national data limitations should be considered an invitation to improve—rather than forego—cross-national studies such as this one.

The consequence of data limitations also contributes to sampling limitations. Clearly, the sample analyzed in this study does not constitute a *random* sample, which is an important assumption for unbiased inferential statistics and regression analyses. The sample size of 66 nations is also rather modest. While supplemental analyses (including missing data analysis, sensitivity analysis, and reduced model analysis) do not suggest substantial challenges to key relationships, larger samples are nonetheless desirable. In fact, analyses on data from the *population* of world nations may be feasible in coming years (at least on some measures), which would eliminate the need for sampling and inferential statistics altogether. Until then, the results of studies such as this one are much more suggestive than conclusive.

Another challenge of this study involves the measurement of cross-national incarceration rates. The World Prison Brief, from which measures of incarceration are derived, suffers from several limitations. Data is supplied by each nation's central government or prison authority, and is not independently verified; therefore, the reliability of the data may be in question, particularly for nations with human rights abuses who endeavor to hide or diminish certain questionable patterns or practices. There may also be inconsistencies regarding which prisoners are "counted": whether or not the count includes pre-trial detainees, minor offenders held in 'lesser' institutions such as jails, and political prisoners. Prison data is known to be incorrect or incomplete in a

number of nations, including China, North Korea, and others. The results of this study therefore rest on certain assumptions about the reliability and validity of prison data, which suffers from very real challenges.

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.

As mentioned in several places, secondary data analysis has also led to the use of variables which may not measure the underlying constructs as directly as would be desirable. This is especially true of measures of culture. The term "culture" itself is difficult to define and measure. Some of the measures of culture appearing in this study, including scientism and religiosity, may be too broad to address their relationships with punishment and incarceration. Future studies, for instance, may design more narrow survey items which explore attitudes toward *social* sciences (rather than science and technology more generally) and their influence on social policy. Similarly, items measuring the *nature* of religious attitudes, rather than a simple measure of devoutness, may provide more insight into its role in punishment. Furthermore, at the marcrosocial level, it may be prudent to measure the number of religions, the share of the population that is religious, or the presence of religious conflict, all of which may contribute to punishment and policy.

Conclusion

This study sought to determine whether Black's theory of law, informed by analogous theories in the sociology of punishment, predicts cross-national variation in incarceration rates. In other words, the study sought to determine how well several broad dimensions of social life, encompassing structural and cultural characteristics of societies, were associated with the scale of punishment. Overall, the results were mixed. Full models explained a substantial portion of the variance in incarceration, and all five dimensions demonstrated at least some significant association with incarceration rates. Furthermore, the results supported hypothesized nonlinear relationships between morphology and social control—heretofore untested in examinations of Black's theory of law. The results also provided evidence that omitted variable bias warrants legitimate concern, suggesting that partial tests of Black's theory (or single-theory tests which fail to control for competing explanations) may be misspecified.

Nonetheless, many of the measures hypothesized to predict incarceration rates were *not* supported. In particular, several measures of economic structure and several measures of culture were not associated with the scale of incarceration. While the results provided a reasonably well-performing model of incarceration rates, the model did a poor job predicting the particularly high rate of incarceration in the U.S. Overall, this study suggests that the strength of Black's theory rests in its broad scope and synthesis of a variety of socially-relevant domains which ought to be considered simultaneously. Nonetheless, it also finds that many of the proposed measures of these domains—largely latent constructs that escape direct measurement—require reconsideration.

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APPENDICES

Appendix A: Summary of Empirical Research on Black's Theory of Law

	Macro?	**Geographic Context**	**All Five Dimensions?**	**Dependent Variable**
(S. K. Wong, 2010)	Yes	Canada	Yes	Clearance Rates
(Lu & Miethe, 2007)	Yes	China	Yes	Gender-related statutes
(Lessan & Sheley, 1992)	Yes	U.S.	Yes	Police Expenditures, Incarceration Rates, Community Supervision Rates
(Wooditch, 2012)	Yes	Cross-national	Yes	Number and adequacy of antitrafficking laws
(Borg & Parker, 2001)	Yes	U.S.	Yes	Clearance Rates
(Kuo et al., 2010)	Yes	Taiwan	No	Prosecuted Cases and Rate
(Massey & Myers, 1989)	Yes	U.S.	No	Incarceration rate, Execution rate
(Gottfredson & Hindelang, 1979)	No	U.S.	Yes	Reporting Behavior
(Kruttschnitt, 1980)	No	U.S.	No	Court decision
(Myers, 1980)	No	U.S.	Yes	Court decision
(Braithwaite & Biles, 1980)	No	Australia	Yes	Complaint
(Mooney, 1986)	No	U.S.	No	University

				sanction
(Hembroff, 1987)	No	U.S.	Yes	Evaluation of seriousness of hypothetical scenario
(Staples, 1987)	No	U.S.	No	Juvenile referral, screening decision, disposition
(D. A. Smith, 1987)	No	U.S.	No	Police decision: mediate, separate, arrest
(Kerstetter & Van Winkle, 1990)	No	U.S.	No	Complaint
(Doyle & Luckenbill, 1991)	No	U.S.	Yes	Complaint
(Borg, 1998)	No	U.S.	No	Clearance rate
(Copes et al., 2001)	No	U.S.	Yes	Complaint
(Baumer, 2002)	No	U.S.	No	Complaint
(Geiger-Oneto & Phillips, 2003)	No	U.S.	No	Stop, exit, frisk, search, ticket, arrest
(Kan & Phillips, 2003)	No	U.S.	No	Mock death sentence decision
(Litwin, 2004)	No	U.S.	Yes	Clearance rate
(Lee, 2005)	No	U.S.	No	Clearance rate
(Felson & Pare, 2005)	No	U.S.	No	Complaint
(Mastrofski et al., 2002)	No	U.S.	No	Police disrespect

(Norris et al., 2006)	No	U.S., Mexico, and Venezuela	No	Officer use of force to hypothetical scenario
(Paré, Felson, & Ouimet, 2007)	No	Canada	No	Clearance rate
(Chappell & Maggard, 2007)	No	U.S.	No	Prison sentence; felony charge
(Xie & Lauritsen, 2012)	No	U.S.	No	Complaint
(Graham et al., 2013)	No	Brazil	Yes	Complaint
(Kuo et al., 2012)	No	Taiwan	No	Complaint
(Greife, 2012)	No	U.S.	Yes	Corporate sanction
(Chappell, 2018)	No	U.S.	No	Juvenile detention; adjudication

Appendix B: Nations in World Values Survey Wave 5 and 6

Algeria 2014

Andorra 2005

Argentina 2006, 2013

Armenia 2011

Australia 2005, 2012

Azerbaijan 2011

Belarus 2011

Brazil 2006, 2014

Bulgaria 2006

Burkina Faso 2007

Canada 2006

Colombia 2005, 2012

Cyprus 2006, 2011

Chile 2006, 2012

China 2007, 2013

Ecuador 2013

Egypt 2008, 2012

Estonia 2011

Ethiopia 2007

Finland 2005

France 2006

Georgia 2009, 2014

Germany 2006, 2013

Ghana 2007, 2012

Guatemala 2004

Haiti 2016

Hong Kong 2005, 2014

Hungary 2009

India 2006, 2012

Indonesia 2006

Iran 2005

Iraq 2006, 2013

Italy 2005

Japan 2005, 2010

Jordan 2007, 2014

Kazakhstan 2011

Kuwait 2014

Kyrgyzstan 2011

Lebanon 2013

Libya 2014

Malaysia 2006, 2012

Mali 2007

Mexico 2005, 2012

Moldova 2006

Morocco 2007, 2011

Netherlands 2006, 2012

New Zealand 2004, 2011

Nigeria 2012

Norway 2007

Pakistan 2012

Palestine 2013

Peru 2006, 2012

Philippines 2012

Poland 2005, 2012

Qatar 2010

Romania 2005, 2012

Russia 2006, 2012

Rwanda 2007, 2012

Serbia 2006

Singapore 2012

Slovenia 2005, 2011

South Africa 2006

South Korea 2005, 2010

Spain 2007, 2011

Sweden 2006, 2011

Switzerland 2007

Taiwan 2006, 2012

Thailand 2007, 2013

Trinidad and Tobago 2006, 2010

Tunisia 2013

Turkey 2007, 2012

Ukraine 2006, 2011

United Kingdom 2005

United States 2006, 2011

Uruguay 2006, 2011

Uzbekistan 2011

Vietnam 2006

Yemen 2014

Zambia 2007

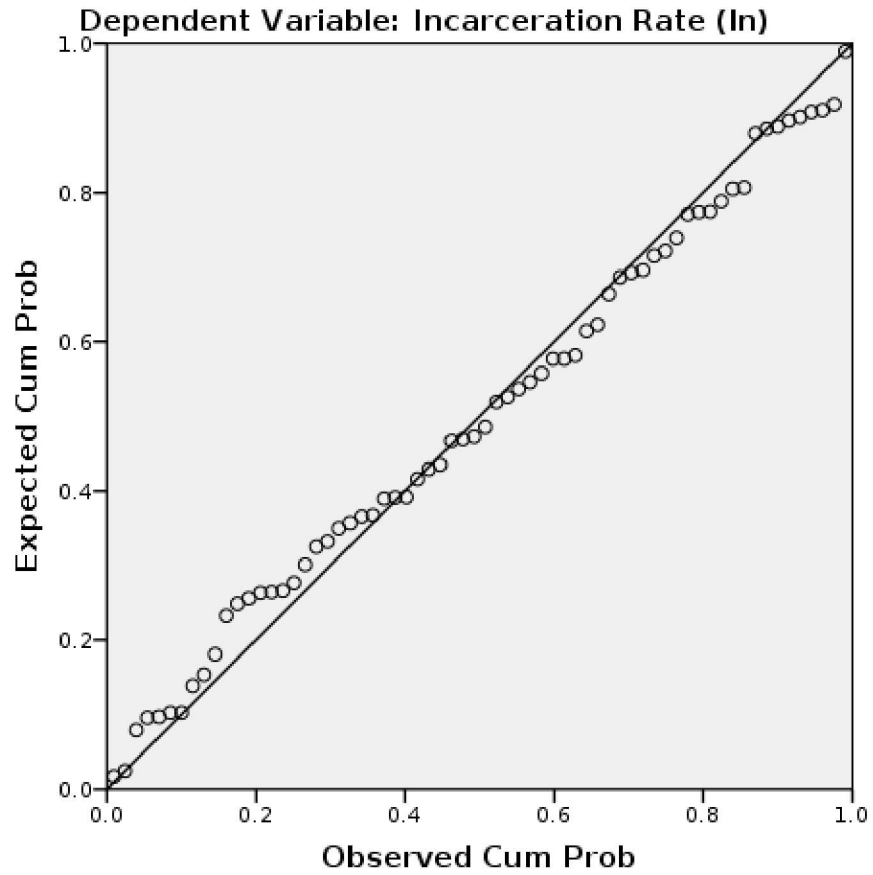Zimbabwe 2012

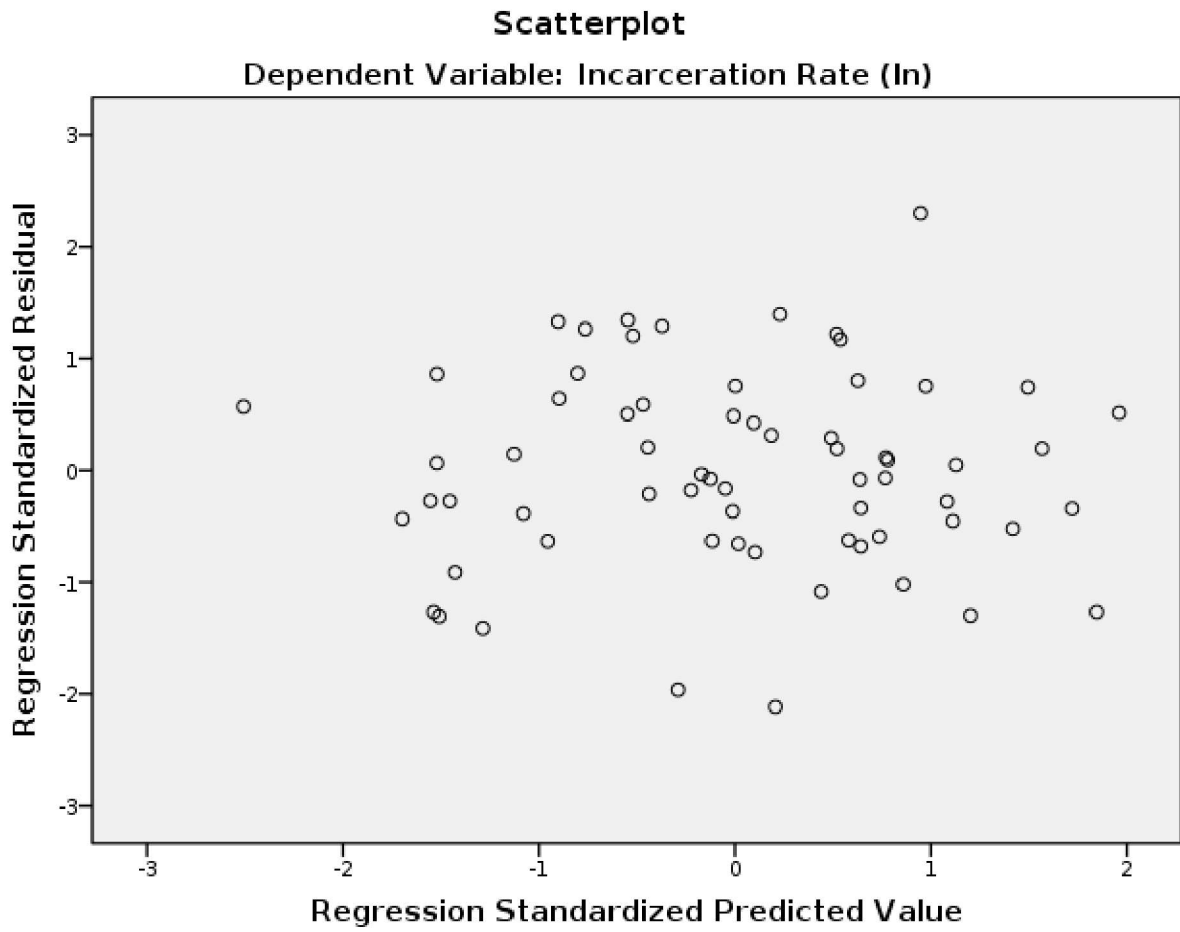**Appendix C: Regression Diagnostic Output**

Figure A1: Normal P-P Plot of Regression Standardized Residual

Figure A2: Scatterplot of Residuals