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**RACE/ETHNICITY, SOCIAL STRUCTURE, AND VIOLENCE: MOVING BEYOND
BLACK-WHITE COMPARISONS TOWARD AN UNDERSTANDING OF HISPANIC
VIOLENCE**

A Thesis in

Sociology

by

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ABSTRACT

It is widely recognized that poverty, disadvantage, and other structural conditions shape racial/ethnic patterns of violence. However, ecological research on race/ethnicity and violence has been limited almost exclusively to black-white comparisons and has overlooked Hispanics and other race/ethnic groups. Additionally, studies on race/ethnicity, social structure, and violence have been limited in that they (1) continue to debate whether the structural sources of violence are “racially invariant” (similar), (2) have focused on the effects of disadvantage while often overlooking how segregation, immigration, and other structural factors influence violence across race/ethnic groups, and (3) have faced methodological limitations that may have biased prior findings about racial/ethnic differences in violence and the structural predictors of violence.

In light of its recent population growth and the paucity of research in the area, the primary objective of this project is to expand ecological research on race/ethnicity and violence by examining the structural sources of Hispanic violence – both alone and compared to whites and blacks. Three key questions about the relationship between race/ethnicity, social structure, and violence are addressed. First, this project tests the racial invariance hypothesis, which argues that the structural sources of violence are similar across race/ethnicity. Specifically, I examine whether the structural predictors of violence and especially the effects of disadvantage on violence are the same for whites, blacks, and Hispanics, and also whether support for the racial invariance argument depends on how invariance is defined (Chapter 2). Second, moving beyond the effects of disadvantage, this project examines whether racial/ethnic isolation influences black and Hispanic violence and whether the effects of segregation on violence are similar/invariant across race/ethnicity (Chapter 3). Third, focusing specifically on Hispanics, I

examine whether immigration influences Hispanic violence and whether immigration disorganizes or stabilizes Hispanic communities.

To address these questions, I use arrest data on violent crime and measures of social structure for whites, blacks, and Hispanics for more than 200 census places across California and New York during the 1999 to 2001 period. Data on white, black, and Hispanic violent crime are drawn from the California Arrest Data (CAL) and the New York State Arrest Data (NYSAD). Race/ethnicity-specific measures of social structure are drawn from 2000 U.S. Census data for each race/ethnic group at the census place-level. Seemingly Unrelated Regression techniques are used to compare the structural sources of violence across race/ethnic groups, and structural equation models are used to identify the total, direct, and indirect effects of immigration on Hispanic violence rates.

Findings from Chapter 2 provide mixed support for racial invariance arguments and indicate that disadvantage contributes to violence for whites, blacks, and Hispanics. However, the effects of particular structural predictors and the magnitudes of structural effects on violence vary widely across race/ethnicity. Thus, the racial invariance hypothesis is not supported when using narrowly-defined interpretations and receives modest support when using the broadest possible definitions of “invariance.”

Chapter 3, which examines the effects of racial/ethnic segregation on black and Hispanic violence, also provides mixed evidence for the racial invariance hypothesis and reveals that being residentially isolated (from whites and from all other race/ethnic groups) contributes to Hispanic violence and black homicide but appears to reduce black Violent Index rates. Additionally, findings suggest that segregation effects on violence for both blacks and Hispanics are mediated by concentrated disadvantage.

Chapter 4 relies on social disorganization theory and community resource arguments drawn from the social capital perspective to examine the effects of immigration on Hispanic violence. The findings from this chapter suggest that immigration has little direct effect on Hispanic violence. However, immigration appears to have multiple, offsetting *indirect* effects on Hispanic violence that work through social disorganization and community resource/social capital measures. The combination of these direct and indirect effects shows that immigration has little total effect on Hispanic violence. Chapter 5 concludes by discussing important implications of this project for research and theory on the ecology of crime and the relationship between race/ethnicity, social structure, and violence.

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CHAPTER 1:

INTRODUCTION

Dating back to the Chicago school of criminology, scholars have relied on ecological and structural approaches to explain aggregate patterns of violence. Research has shown that structural characteristics and social-ecological factors, such as community rates of poverty, inequality, segregation, and immigration, help explain general patterns of violence across places (Bellair 1997; Blau and Blau 1984; Land et al. 1990; Sampson and Groves 1989; Shaw and McKay 1942; Silver 2000) and across race/ethnic groups (Bellair and McNulty 2005; Harer and Steffensmeier 1992; Krivo and Peterson 1996; 2000; Morenoff, Sampson, and Raudenbush 2001; Parker and McCall 1999; Sampson 1987; Shihadeh and Steffensmeier 1994; Shihadeh and Shrum 2004; Velez, Krivo, and Peterson 2003).

Structural and ecological explanations generally view race/ethnicity as a marker for external social contexts and conditions that are differentially distributed across race/ethnic groups (Sampson et al. 2005). According to these arguments, race/ethnicity itself is not a direct source of violence. Rather, race/ethnic differences in crime stem from race/ethnic groups' differential exposure to structural and social conditions that may contribute to violence.

Structural and ecological research has often focused on black-white differences in violence, arguing that the harsh social conditions and high levels of disadvantage and isolation found in black communities are largely responsible for higher rates of black violence and for black-white gaps in violence. These ecological approaches and structural explanations of racial/ethnic patterns of violence have received substantial attention and support. However, a critical limitation of this research is that it has focused almost exclusively on black-white comparisons and has overlooked other race/ethnic groups.

In particular, one of the most glaring shortcomings of prior ecological/structural research on race/ethnicity and violence is the paucity of research on Hispanic crime. The oversight of Hispanic violence in prior research is particularly unfortunate considering that (1) Hispanics are now the largest and fastest growing minority group in the U.S. (Healey 2006; U.S. Census Bureau 2005; Pew Hispanic Center 2006a; 2006b), (2) despite having similar levels of disadvantage, Hispanic rates of violence tend to be lower than black rates (Martinez and Lee 1998; Martinez 2002; Sampson and Bean 2006; Velez 2006), and (3) several scholars suggest that the violence-generating process may differ for Hispanics compared to blacks and whites (Moore and Pinderhughes 1993; Riedel 2003; also see Martinez and Nielsen 2006; Nielsen et al. 2005; Velez 2006).

Research indicates that while Hispanics and blacks are often exposed to similar levels of disadvantage and poverty, Hispanic enclaves face some unique structural conditions and processes that are unparalleled among white and black communities and which may help insulate Hispanic residents from the crime-producing effects of disadvantage (Healey 2006; Martinez 2002; Martinez and Lee 2000; Velez 2006). Drawing from the social capital perspective and the ethnic economies literature (Coleman 1988; Light and Gold 2000; Portes 1998; Portes and Sensenbrenner 1993; Steffensmeier and Ulmer 2005; 2006), Hispanic communities have been shown to have exceptionally strong social capital networks and kinship/familial bonds that provide community residents with resources and support (e.g., financial, child care, social support, job networking) (Healey 2006; Martinez and Lee 1998; Martinez 2002). Hispanic neighborhoods also tend to have a strong sense of unity and social cohesion based on shared heritage, language, and traditions. Additionally, Hispanic communities and enclaves may benefit from active ethnic economies which contribute resources, employment opportunities, and a

vibrant sense of community and street life to Hispanic populations (Healey 2006; Klinenberg 2002; Light and Gold 2000; Martinez and Lee 1998; Martinez 2002). Furthermore, research suggests that immigration may help stabilize Hispanic communities by strengthening community cohesion, family and social networks, and key resources and social institutions (Lee et al. 2001; Martinez and Lee 1998; 2000; Nielsen et al. 2005; Riedel 2003; Sampson and Bean 2006; Velez 2006).

In light of these protective factors in Hispanic communities, structural conditions like disadvantage and segregation may have somewhat different effects on Hispanic violence than on white and black violence (Moore and Pinderhughes 1993; Riedel 2003). That is, these protective factors may serve as a “buffer” to reduce the harmful, crime-producing effects of disadvantage in Hispanic communities (Martinez and Nielsen 2006; Nielsen et al. 2005; Velez 2006). High rates of immigration and other structural conditions unique to Hispanic communities may also impact Hispanic violence in ways that are not found among other race/ethnic populations. However, due to the scarcity of empirical research on Hispanic crime, little is known about the patterns and predictors of Hispanic violence - either alone or compared to other race/ethnic groups. Thus, the primary goal of this dissertation is to extend ecological and structural research on race/ethnicity and violence by examining the structural predictors of Hispanic crime and by examining whether the ecological processes used to explain black and white patterns of violence apply to Hispanics.

Additionally, prior ecological research on race/ethnicity and violence has several other key limitations that will be addressed in this project. First, it is unclear whether structural factors have similar effects on violence across race/ethnic groups. There is considerable debate in sociological literature over whether the structural sources of violence and the violence-generating process are “racially invariant” (similar) for all race and ethnic groups (Harer and

Steffensmeier 1992; Krivo and Peterson 2000; Peterson and Krivo 2005; Sampson and Bean 2006; Sampson et al. 2005; Sampson and Wilson 1995; Velez 2006). Drawing from structural theories of crime, researchers have often favored the *racial invariance hypothesis*, which claims that poverty, income inequality, disadvantage, and other structural factors have the same effects on violence across race/ethnic groups (Krivo and Peterson 2000; Peterson and Krivo 2005; Sampson 1987; Sampson and Wilson 1995; Sampson et al. 2005; Velez 2006). These researchers argue that the same set of structural factors should lead to violence for whites, blacks, and other race/ethnic groups and that structural characteristics should not have different effects on violence across racial/ethnic groups.

However, empirical research testing the racial invariance hypothesis has provided mixed findings. On the one hand, some studies comparing the structural predictors of black and white violence support racial invariance arguments and show that disadvantage and other social conditions have similar effects on black and white violence (Krivo and Peterson 2000; Land et al. 1990; Sampson 1987; Sampson and Wilson 1995; Sampson et al. 2005). On the other hand, several other studies indicate that the structural predictors of violence vary considerably across race/ethnic groups and that structural factors are able to predict white violence better than black violence (Harer and Steffensmeier 1992; Lafree et al. 1992; Matsueda and Heimer 1987; Peterson and Krivo 1999; Phillips 2002; Shihadeh and Ousey 1996; see review in Harris and Shaw 2000).

In addition, researchers have further complicated the racial invariance debate by using different interpretations and definitions of “invariance” when comparing the structural predictors of black and white violence. Studies supporting racial invariance arguments tend to use *broadly-defined* interpretations of invariance and focus on the overall, underlying effects of structural

disadvantage. In contrast, studies that provide little support for invariance arguments use more *narrowly-defined* interpretations of invariance and focus on whether particular structural factors (e.g., poverty, unemployment, family structure, income inequality) have varying effects (in direction and magnitude) on violence across race/ethnicity. Thus, empirical evidence for the racial invariance hypothesis is somewhat mixed, and it is unclear whether the structural sources of violence are similar across race/ethnicity.

Second, research on race/ethnicity, social structure, and violence has focused primarily on the effects of disadvantage and has overlooked other key structural factors that are likely to influence violence across race/ethnic groups. In particular, surprisingly few studies have examined how racial/ethnic patterns of violence are influenced by *segregation* and *immigration* – two of the most influential structural factors shaping the social conditions of black, white, and Hispanic communities in recent years. Research indicates that racial/ethnic segregation and especially black-white segregation persists at such extreme levels that blacks have become “hypersegregated” and that black residential circumstances reflect an American Apartheid (Massey 2001; Massey and Denton 1989; 1993: 83; see also Peterson and Krivo 1999). With respect to immigration, research also indicates that increasingly large numbers of Hispanic and especially Mexican immigrants have entered the U.S. in recent decades and have tended to settle in predominantly Hispanic neighborhoods (Healey 2006; Pew Hispanic Center 2006a; 2006b). These high levels of racial/ethnic segregation and immigration are likely to have substantial influences on violent offending across race/ethnic groups, especially for blacks and Hispanics. However, research has largely overlooked the effects of segregation and immigration on violence, especially among Hispanic populations.

Last, research on race/ethnicity and violence has faced several methodological limitations. Prior research has often relied on race/ethnicity-specific crime measures drawn from the Uniform Crime Reports (UCR), which combine Hispanic arrest figures with black and especially with white figures (see Steffensmeier and Demuth 2000; 2001). Therefore, prior white-black violence comparisons are likely to be confounded with Hispanic crime figures and are possibly biased. Prior research has also typically relied on city-level data and has often examined only the 100-125 largest cities in the U.S., which may be problematic for comparing the structural predictors of violence across race/ethnic groups. In particular, city-level data provide little variation or overlap across race/ethnic groups in measures of violence and social structure. Additionally, city-level analyses are likely to contain a great deal of “noise” (Peterson and Krivo 2005). That is, because cities are such a high level of aggregation and have so much internal heterogeneity, city-level analyses may not capture structural processes and effects on violence that occur among neighborhoods or communities (see Chapter 2 for a more detailed discussion of city-level data limitations).

RESEARCH PLAN AND CONTRIBUTIONS OF THE DISSERTATION

Drawing on ecological and structural research and theory, and especially from research comparing black and white violence, this dissertation addresses the limitations identified above and extends research on race/ethnicity and crime by identifying the structural sources of Hispanic violence and by examining whether the ecological processes used to explain black and white patterns of violence apply to Hispanics. Three key questions are addressed concerning the relationship between race/ethnicity, social structure, and violence:

1. Is there invariance in the structural sources of white, black, and Hispanic violence, and does support for the racial invariance hypothesis depend on how invariance is defined?

2. How does segregation influence black and Hispanic violence, and are the effects of racial/ethnic residential segregation on violence racially invariant?
3. How does immigration influence Hispanic rates of violence, and does immigration disorganize or stabilize Hispanic communities?

To address these questions, I use race/ethnicity-disaggregated violent arrest rates and measures of structural conditions for California and New York census places for the 1999-2001 period. Data on white, black, and Hispanic violent crime were drawn from the California Arrest Data (CAL) and the New York State Arrest Data (NYSAD), which are described in greater detail in Chapter 2. CAL and NYSAD provide individual-level arrest counts for a variety of offenses, disaggregated by race/ethnicity, age, gender, and arresting agency. These data sources are particularly well-suited for this project because, unlike the Uniform Crime Reports (UCR) and many commonly used sources of crime data, they identify arrests of “Hispanic” offenders. From these data, white, black, and Hispanics arrest counts were combined with year 2000 population figures for each census place (U.S. Census Bureau – STF 4) to create the dependent measures for the analysis: white, black, and Hispanic arrest rates/100,000 for homicide and the Violent Index (sum of arrests for homicide, robbery, rape, and aggravated assault). To create the independent variables, year 2000 U.S. Census data were used to create measures of structural disadvantage, racial/ethnic segregation, immigration, and other structural conditions for each race/ethnic group at the census place-level (See Chapter 2 for further discussion census data and measures).

The *unit of analysis* is the census place which, as I briefly describe here and explain in greater detail in Chapter 2, as a geographic unit avoids some of the problems of city-level analyses identified above and is advantageous for several reasons described below. Census places include two types of non-overlapping geographic units: incorporated places and non-incorporated census designated places (CDPs). Incorporated places account for more than 80

percent of all census places and include a variety of geographic units, such as cities, towns, villages, and boroughs, that vary widely in terms of structural conditions and size. Incorporated places are legally-recognized under the laws of their respective states and typically have active governments (U.S. Bureau of the Census 1994). Non-incorporated census designated places are tracked by the U.S. Census Bureau but are not officially incorporated/recognized by their respective states, typically do not have their own active governing bodies, and face no minimum population or density requirements to be recognized as a CDP. Otherwise, they closely resemble incorporated places and typically have distinct boundaries and include large concentrations of people, housing, and commercial structures that are recognizable by name.

Though the census place has rarely been used as a unit of analysis in criminological research, it has several potential advantages for this project. First, they are large enough to provide reliable measures of violence and social structure for each racial/ethnic group but small enough to preserve a large sample size (number of census places) for the analysis. Second, unlike the largest 100-125 cities, census places vary widely in terms of size, structural characteristics, and rates of violence and thus avoid problems associated with truncating variation in independent and dependent measures. Third, the greater variation in structural characteristics across census places provides more potential overlap in structural conditions across race/ethnic populations.

Taken together, this dissertation makes important contributions to research on race/ethnicity and violence and extends ecological studies of crime in that it (1) moves beyond white-black comparisons and examines the structural sources of violence for Hispanics – both alone and compared to whites and blacks; (2) refines our understanding of the racial invariance hypothesis by using both narrowly-defined and broadly-defined interpretations of invariance to

discern whether evidence for racial invariance arguments depends on how invariance is defined; (3) moves beyond structural disadvantage to examine how segregation and immigration influence violence among Hispanics (and how segregation influences black violence); (4) uses census place-level analyses to overcome the limitations of city-level data; (5) separates Hispanic, black, and white crime figures to provide cleaner comparisons of the structural sources of violence across race/ethnic groups; and (6) illustrates the importance of examining both direct and indirect effects of structural factors on violence across race/ethnic groups.

This dissertation unfolds as follows. Chapter 2 tests the racial invariance hypothesis and compares the structural predictors of violence for blacks, whites, and Hispanics to discern whether the structural sources of violence are similar across race/ethnic groups. In this chapter, I also describe the different definitions used in racial invariance arguments and examine whether support for racial invariance depends on whether one uses a broadly-defined or narrowly-defined interpretation of racial invariance. Additionally, this chapter provides a more detailed discussion of the data and methods used throughout the dissertation. Chapter 3 focuses specifically on blacks and Hispanics and compares the effects of racial/ethnic segregation on black and Hispanic rates of violence. Chapter 4 examines the impact of immigration on Hispanic homicide and Violent Index rates. In particular, Chapter 4 examines the indirect effects of immigration on violence to test competing theoretical arguments (social disorganization versus the community resource argument drawn from social capital perspectives) on the immigration-violence relationship.

Chapter 5 summarizes and discusses the findings and conclusions from the earlier empirical chapters, discusses important implications of the research, and further highlights the contributions that this project makes to research on race/ethnicity, social structure, and violence.

Chapter 5 concludes by raising several caveats of the empirical analyses and discussing important directions for future research.

CHAPTER 2:

RACIAL INVARIANCE IN THE STRUCTURAL SOURCES OF VIOLENCE

As noted in Chapter 1, a key objective of this project is to extend theory and research on the social ecology of crime, particularly that dealing with black-white differences in violence, toward an understanding of Hispanic violence. A secondary objective is to also extend the ecological research on black-white differences in violence and in the structural sources of violence more generally (for example, by using census places as the unit of analysis). The particular focus of this chapter is to address the racial invariance hypothesis by assessing whether the structural predictors of violence and especially the effects of disadvantage on violence are similar for whites, blacks, and Hispanics.

This chapter unfolds as follows. I first provide some brief background on research examining the race/ethnicity-violence relationship and provide a detailed description of the assumptions of the racial invariance hypothesis and the different interpretations of racial invariance that have been used in prior literature. Next, the limitations of prior research on racial invariance and the research plan and contributions for the current chapter are discussed. I provide a detailed discussion of the data and methods used to address the racial invariance hypothesis, with particular focus on Hispanic-white and Hispanic-black comparisons. I then discuss the findings of the analysis and conclude by highlighting the contributions of this chapter and directions for future research on the racial invariance hypothesis.

BACKGROUND

Although violence in the United States has declined in recent decades, violent offending continues to be spread unevenly across race/ethnic groups. Crime statistics and research indicate that blacks, and Hispanics to a lesser degree, are overrepresented among serious forms of

violence. In 2005, blacks made up less than 15 percent of the total U.S. population but accounted for 48.6 percent of all arrests for homicide and 56.3 percent of robbery arrests (Federal Bureau of Investigation 2006; United States Census Bureau 2005). In 2004, black homicide offending and victimization rates were more than 6 times higher than white rates. Recent incarceration statistics show that approximately 9 percent of the black population was incarcerated throughout the 1990s compared to only 2 percent of the white population and 1 percent for other races. Furthermore, blacks were about 3 times more likely than Hispanics and 5 times more likely than whites to be in jail in 2005 (Bureau of Justice Statistics 2006).

These race/ethnic disparities in crime and especially the black-white differences in violence have received a great deal of attention from sociologists and criminologists. To explain these disparities, scholars have often drawn on structural theories of crime (i.e., anomie/strain, social disorganization, and opportunity theories) and have proposed that racial and ethnic differences in social structure and community characteristics (e.g., poverty, unemployment, disadvantage) help explain current racial/ethnic patterns of violence. Many argue that the harsh social conditions and highly-concentrated levels of disadvantage found in black communities are largely responsible for higher rates of black violence and for black-white gaps in violence (see Harris and Shaw 2000; Krivo and Peterson 2000; Peterson and Krivo 2005; Sampson and Wilson 1995). Although numerous studies show that social structure influences racial/ethnic patterns of violence, it is unclear whether structural factors have similar effects on violence across race/ethnic groups.

Drawing from key structural theories of crime, researchers have sought to examine the *racial invariance hypothesis* – which argues that the violence-generating process and the structural sources of violence are similar for all race/ethnic groups (Krivo and Peterson 2000;

Peterson and Krivo 2005; Sampson and Bean 2006; Sampson et al. 2005; Velez 2006).

However, empirical evidence addressing this hypothesis has been somewhat mixed. On the one hand, a number of studies provide support for the racial invariance hypothesis and indicate that community characteristics and especially structural disadvantage measures have similar effects on both black and white violence (Krivo and Peterson 1996; 2000; Land et al. 1990; McNulty 2001; Sampson 1987; Sampson et al. 2005). However, many other studies show that the structural predictors of violence vary across race/ethnicity, with many reporting that structural factors (e.g., income inequality, structural disadvantage, poverty rates) are able to predict white violence better than black violence (Harer and Steffensmeier 1992; Lafree et al. 1992; Messner and Golden 1992; Nielsen et al. 2005; Ousey 1999; Parker and McCall 1999; Parker et al. 2005; Phillips 2002; Shihadeh and Steffensmeier 1994; Shihadeh and Ousey 1996).

In addition to these mixed findings, prior research on racial invariance has faced several additional limitations. First, a key problem is that researchers have used different interpretations and definitions of “invariance” when testing the racial invariance hypothesis, which may account for the mixed findings in prior studies. Research that provides the strongest support for the racial invariance hypothesis has used a *broadly-defined* interpretation of racial invariance – i.e., focusing on whether structural disadvantage generally contributes to violence across race/ethnic groups (Krivo and Peterson 2000; Peterson and Krivo 2005; Sampson and Bean 2006; Sampson et al 2005). This perspective focuses on the broad, underlying effect of disadvantage on violence and argues that racial invariance arguments are supported as long as structural disadvantage is a key part of the violence-generating process for all race/ethnic groups.

In contrast, research providing the least support for the invariance hypothesis has tended to use *narrowly-defined* interpretations of racial invariance (Harer and Steffensmeier 1992;

Lafree et al. 1992; Messner and Golden 1992; Nielsen et al. 2005; Ousey 1999; Parker and McCall 1999; Phillips 2002). Rather than focusing exclusively on the violence-generating effects of disadvantage, the narrow approach examines how a variety of specific community characteristics and structural factors (e.g., poverty, income inequality, residential mobility, family structure, population size) influence violence and whether these factors have similar effects and similar *magnitudes* of effects on violent offending across race/ethnicity. Thus, a potential source of the mixed evidence on racial invariance could be the different ways that invariance has been defined in prior literature.

Second, research on race/ethnicity and violence has focused almost exclusively on black-white comparisons and has often overlooked Hispanics and other race/ethnic groups. The inattention to Hispanic violence is particularly troubling because Hispanics are now the largest minority group in the U.S. Yet we know relatively little about the patterns and predictors of Hispanic violence, either alone or compared to whites and blacks (Martinez 2002; Martinez and Nielsen 2006; Peterson and Krivo 2005; Velez 2006; Sampson et al. 2005).

Third, prior racial invariance research has been limited by its reliance on city-level analyses. City-level data rarely provide comparable black and white populations and generally describe black populations that are far more disadvantaged than white populations. Thus, prior tests of racial invariance have rarely compared similarly-situated black and white populations, which may lead to biased results and conclusions regarding racial invariance (see reviews in Krivo and Peterson 2000; Peterson and Krivo 2005; Sampson and Wilson 1995; Shihadeh and Shrum 2004). Fourth, prior research on race/ethnicity and violence has often relied on Uniform Crime Report (UCR) arrest figures, which combine Hispanic arrest figures with black and especially with white crime figures. As a result, prior comparisons of black and white violence

are likely to be confounded with Hispanic crime figures and are potentially biased (Steffensmeier and Demuth 2000; 2001).

THE PRESENT STUDY

Using 1999-2001 race/ethnicity-disaggregated arrest data on violent crime (i.e., homicide and Violent Index rates) for California and New York census places, this chapter seeks to extend research on race/ethnicity, social structure, and violence by testing the racial invariance hypothesis and addressing key limitations of prior research. In particular, this project makes key contributions to the racial invariance literature and to research on race/ethnicity and crime in that it (1) moves beyond white-black comparisons and examines whether the structural sources of violence are similar for three racial/ethnic groups: whites, blacks, and *Hispanics*, (2) examines whether evidence for racial invariance depends on whether one uses a narrowly-defined or broadly-defined interpretation of invariance, (3) uses a census place-level analysis to provide comparable race/ethnic populations for testing the racial invariance hypothesis, and (4) separates Hispanic, black, and white crime figures to provide cleaner comparisons of the structural sources of violence across race/ethnic groups. Thus, the objectives of this chapter are to first – identify whether disadvantage and other structural factors have similar effects on violence across white, black, and Hispanic groups, and second – to discern whether support for racial invariance arguments depends on how “racial invariance” is defined.

CONCEPTUAL FRAMEWORK AND PRIOR RESEARCH

Dating back to the work of Shaw and McKay (1942) and the Chicago school of criminology, scholars have relied on ecological and structural approaches to explain aggregate patterns of violence. Research has shown that structural characteristics and social-ecological factors, such as community rates of poverty, inequality, education, and residential stability, help

explain general patterns of violence across places or localities (Bellair 1997; Blau and Blau 1984; Land et al 1990; Sampson and Groves 1989; Sampson et al. 2002; Silver 2000). Additionally, researchers have often relied on ecological and structural approaches to explain the relationship between race/ethnicity and violence (Bellair and McNulty 2005; Harer and Steffensmeier 1992; Krivo and Peterson 1996; 2000; Morenoff et al. 2001; Parker and McCall 1999; Sampson 1987; Shihadeh and Steffensmeier 1994; Shihadeh and Shrum 2004; Velez et al. 2003). Structural explanations for the race/ethnicity and violence relationship generally view race/ethnicity as a marker for a number of external social contexts and conditions that are differentially distributed across race/ethnic groups (Sampson et al. 2005). According to these arguments, race/ethnicity itself is not a direct source of violence. Rather, race/ethnic differences in crime stem from race/ethnic groups' differential exposure to structural and social conditions that may contribute to violence.

Focusing largely on black-white differences in crime and violence, many scholars argue that blacks have higher rates of violence than whites because blacks are exposed to much harsher social conditions than white populations. Research shows that sizable portions of the black population have been segregated from whites and isolated in central city areas marked by few jobs or resources and high levels of structural disadvantage, family dissolution, and crime (Healey 2006; Massey and Denton 1993; Massey 1996; 2001; Peterson and Krivo 1993; 1999; Sampson 1987; Sampson and Wilson 1995; Quillian 1999). These residential patterns, combined with the exodus of jobs and middle-class black residents, have served to concentrate poverty in many inner-city black communities and socially isolate their residents (Sampson and Wilson 1995; Wilson 1987; Quillian 1999). As a result, black disadvantage has become so severe that even the poorest white communities are typically more advantaged than the average black

communities (Krivo and Peterson 2000; Peterson and Krivo 2005; Sampson et al. 2005; Sampson and Wilson 1995).

Structural theories of crime argue that these social conditions are largely responsible for high rates of black violence and for black-white differences in violence. Scholars argue the scarcity of resources and extreme levels of disadvantage in poor, black communities may contribute to violence by creating greater levels of social disorganization (Kornhauser 1978; Morenoff et al. 2001; Sampson and Groves 1989; Shaw and McKay 1942), anomie and strain (Agnew 1999; Merton 1938; 1964), and weaker family structures (Sampson 1987; Sampson and Wilson 1995; Sampson et al. 2005) than is typically found in more advantaged communities. Additionally, some scholars argue that these structural conditions and patterns of social isolation may also facilitate the emergence of subcultural adaptations that are more tolerant of violence than mainstream culture. Once established, these subcultural adaptations may further contribute to violent crime rates in black communities (Anderson 1997; 1999; Harer and Steffensmeier 1992; Sampson and Wilson 1995).

THE RACIAL INVARIANCE HYPOTHESIS

On both theoretical and empirical grounds, there is widespread agreement among social scientists that racial/ethnic patterns of violence are shaped by structural conditions. However, there is a considerable debate over whether these structural factors have similar effects on violence across race/ethnicity.

Drawing from key structural theories of crime, such as anomie/strain and social disorganization theories, researchers have generally assumed that poverty, income inequality, disadvantage, and other structural factors have the same effects on violence across race/ethnic groups. This “racial invariance” hypothesis (Sampson and Lauritsen 1997; Sampson and Bean,

2006; Peterson and Krivo 2005; Velez 2006) argues that the violence-generating process is the same across race/ethnic categories. Thus, the same set of structural factors should lead to violence for whites, blacks, and other race/ethnic groups. Focusing largely on disadvantage and on black-white comparisons, the racial invariance hypothesis posits – first, that blacks have higher rates of violence because they have much higher *levels* of disadvantage (Krivo and Peterson 2000; Peterson and Krivo 2005; Sampson and Wilson 1995; Sampson and Bean, 2006), and second, that whites would have similar levels of violence as blacks if white and black disadvantage levels (and other structural conditions) were comparable (Sampson and Wilson 1995).

Overall, the racial invariance hypothesis has received substantial scholarly attention and has been accepted by many scholars. In fact, some consider the debate on racial invariance to be largely settled (see Krivo and Peterson 2005; Velez 2006). These scholars argue that the structural theories that serve as the foundation for the racial invariance hypothesis provide few reasons why structural factors would have varying effects on violence across race/ethnic groups. Additionally, racial invariance proponents note that several studies provide empirical support for the racial invariance hypothesis and indicate that black, white, and Hispanic violence result from similar sets of structural conditions. These studies focus primarily on the effects of structural disadvantage and show that disadvantage contributes to violence for both whites and blacks (Krivo and Peterson 1996; 2000; McNulty 2001; Sampson 1987; Sampson et al. 2005). For example, Krivo and Peterson (2000) and McNulty (2001) find that concentrated disadvantage is positively related to both black and white violence but only when blacks and whites have similar levels of disadvantage. Sampson (1987) finds that family disruption increases both black and white arrest rates for violent crime. Additionally, research by Sampson and colleagues shows

that both individual-level factors (e.g., family structure, SES, immigration status) and neighborhood-level characteristics (e.g. community immigrant concentration, collective efficacy, percent of the population in managerial/professional occupations) have similar effects on violent offending for whites, blacks, and Hispanics (Sampson et al. 2005). Based on these findings and drawing from key structural theories of crime, researchers often conclude that black and white violence stem from similar processes and structural conditions (Krivo and Peterson 1996; 2000; Sampson 1987; Sampson and Wilson 1995; Sampson et al. 2005; Sampson and Bean 2006; Velez 2006).

However, while they claim to support the racial invariance hypothesis, these studies also provide evidence at odds with the racial invariance hypothesis – i.e., they show that some of the structural predictors of violence vary across race/ethnicity (Sampson 1987; see review in Krivo and Peterson 2000). For example, Sampson (1987) finds that per-capita income significantly reduces white but not black rates of juvenile robbery. He also reports that mean welfare payments are positively related to black but not white juvenile robbery rates. Additionally, McNulty (2001) acknowledges that while disadvantage has similar effects on violence for blacks and whites with low levels of disadvantage, disadvantage has much smaller effects on violence for blacks in high-poverty areas.

Furthermore, many other studies comparing the structural predictors of black and white violence provide little to no support for the racial invariance hypothesis. These studies show that the structural predictors of violence vary substantially across race/ethnicity and that income inequality, disadvantage, and a variety of other structural characteristics have different effects on black and white violence (Harer and Steffensmeier 1992; LaFree et al. 1992; Messner and Golden 1992; Ousey 1999; Parker and McCall 1999; Parker et al. 2005; Peterson and Krivo

1999; Phillips 2002; Shihadeh and Ousey 1996). This line of research generally shows that income inequality and other structural factors are more strongly related to white violence than to black violence (Harer and Steffensmeier 1992; LaFree et al. 1992; Phillips 2002; Ousey 1999). For example, Harer and Steffensmeier (1992) find that total inequality and within-race inequality increase white rates of violence but have little impact on black rates of homicide, robbery, rape, or assault. Messner and Golden (1992) find that racial income inequality has similar effects across race/ethnicity and contributes to black, white, and total rates of homicide. However, they also find that deprivation and affluence influence white but not black homicide rates. Phillips (2002) shows that measures of both socioeconomic status and family structure have varying effects on homicide rates among whites, blacks, and Hispanics and are best able to explain white homicide. Additionally, LaFree et al. (1992) find that family income levels, family stability, and educational attainment decrease white crime but surprisingly increase black rates of homicide, robbery, and burglary. Based on these findings, some scholars now argue that the violence-generating process varies across race/ethnic groups. Thus, the empirical evidence on the racial invariance hypothesis is mixed, and it remains unclear whether the structural sources of violence are invariant across race/ethnicity.

LIMITATIONS OF PRIOR RESEARCH

There are a number of limitations in prior research on racial invariance that this project addresses – first, scholars have used different definitions of “racial invariance” when comparing the structural sources of black and white violence; second, tests of racial invariance have rarely moved beyond black-white comparisons to include other race/ethnic groups; third, research has relied on data that confound Hispanic and white crime figures; fourth, tests of racial invariance have rarely examined comparable race/ethnic populations; and fifth, research has relied on visual

observation of effects sizes, rather than formal tests of significance, to determine whether the sources of violence vary across race/ethnic groups.

Definitions of Invariance: “Broad” Vs. “Narrow” Interpretations

Research that has provided the most consistent support for the invariance hypothesis has typically used a *broadly-defined* interpretation of racial invariance (Krivo and Peterson 1996; 2000; McNulty 2001; Peterson and Krivo 2005; Sampson and Bean, 2006; Sampson et al 2005; Sampson and Wilson 1995; Velez 2006). This approach focuses on whether the underlying effects of structural disadvantage are similar across groups, rather than examining whether particular structural factors and specific structural measures have similar/different effects on violence across race/ethnic groups. Based on this interpretation, researchers note that there may be some variation in the predictors of violence across race/ethnicity when one closely examines a wide range of predictors and particular structural factors (e.g., poverty, income inequality, residential mobility, population size, etc.). Additionally, the magnitude of structural effects on violence may differ across race/ethnic groups. However, they argue that these differences are not critical and that the more important point is that disadvantage has similar effects on violence for blacks and whites. For example, as Peterson and Krivo (2005:337) state:

“One consistent pattern emerges from race-specific studies irrespective of the outcomes, predictors, and units under consideration: Structural disadvantage contributes significantly to violence for both blacks and whites (or nonblacks). This finding is resilient to the exact configuration of factors representing disadvantage, e.g., differing combinations of poverty, income, family disruption, and joblessness/unemployment.”

Thus, despite some differences in the specific structural predictors of violence across race/ethnicity, researchers explain that there is racial invariance in the violence-generating process as long as structural disadvantage is a key, underlying source of violence for all race/ethnic groups.

In contrast, research that provides weaker support for racial invariance arguments has typically used a more *narrowly-defined* interpretation of racial invariance. Researchers using this approach argue that there may be subtle variations in the structural sources of violence across race/ethnicity. Thus, rather than focusing on the overarching effects of disadvantage, the narrow approach focuses more closely on whether particular structural measures have different effects (in both direction and magnitude) on violence across race/ethnicity.

Research using the narrowly-defined approach shows that particular structural factors like poverty, unemployment, segregation, residential mobility, and family disruption have different effects on violence for blacks and whites (Harer and Steffensmeier 1992; Lafree et al. 1992; Messner and Golden 1992; Ousey 1999; Parker and McCall 1999; Parker et al. 2005; Peterson and Krivo 1999; Phillips 2002). Additionally, the strength or magnitude of these effects on violence has been shown to vary across race/ethnicity. Therefore, even though many structural measures can be grouped under the broad concept of “structural disadvantage,” the narrowly-defined approach argues that it is important to examine many of these particular factors separately. Each measure captures distinct and important features of social structure that may have varying effects on violence for whites and blacks. Additionally, the list of structural measures that can be grouped under the concept of “structural disadvantage” is so extensive that there are few measures of social structure that could not be classified as disadvantage measures. For example, community levels of poverty, income, income inequality, unemployment, education, family disruption, discrimination, segregation, and even percent black have been used as measures of disadvantage in prior research (Blau and Blau 1982; Harer and Steffensmeier 1992; Krivo and Peterson 2000; Phillips 2002; Sampson 1987; Shihadeh and Steffensmeier 1994; Shihadeh and Ousey 1996). Grouping these factors into one concept of disadvantage may

support a broad interpretation of racial invariance, but it may also overlook important nuances and variations across race/ethnicity in the violence-generating process. Thus, simply by using different interpretations of racial invariance (i.e., broadly- versus narrowly-defined), researchers have reached drastically different conclusions about the racial invariance hypothesis.

Black-White Comparisons

One of the most glaring shortcomings of prior research is the nearly exclusive focus on white and black crime and the sparse attention given to the patterns and predictors of violence among other race/ethnic groups. The scarcity of research on Hispanic crime is particularly unfortunate considering that Hispanics are now the largest minority group in the U.S. (Healey 2006; United States Census Bureau 2005). Yet, scholars have provided little information about the patterns and predictors of Hispanic violence - either alone or compared to other race/ethnic groups.

Black and Hispanic populations share a number of similarities and have often faced similar structural conditions. Like blacks, Hispanic groups in the U.S. are often fairly disadvantaged and face higher rates of poverty, lower incomes, and are exposed to worse school systems than whites. Additionally, both Hispanics and blacks have faced limited opportunities due to prejudice and discrimination (Healey 2006; Martinez 2002; Martinez et al. 2004; Portes and Rumbaut 2001). Yet, despite these structural similarities, research indicates that Hispanic rates of violence tend to be lower than black violence rates and typically fall much closer to whites rates of violence (Martinez and Lee 1998; Martinez 2002; Sampson and Bean 2006; Velez 2006).

To explain these lower rates of Hispanic violence, researchers commonly point to the fact that Hispanic communities and enclaves also have some unique structural conditions and some

important structural differences from white and black populations. Disadvantage is often less concentrated and discrimination is less severe among Hispanics than among blacks (Healey 2006; Sampson et al. 2005; Velez 2006). Hispanics also tend to have higher employment rates than blacks (Martinez 2002; Velez 2006). Additionally, while Hispanics and blacks are often exposed to similar levels of disadvantage and poverty, Hispanic communities are benefited by some protective factors that may help insulate residents from the harmful, crime-producing effects of disadvantage.

Drawing from the social capital perspective and the ethnic economies literature (Coleman 1988; Light and Gold 2000; Portes 1998; Portes and Sensenbrenner 1993; Steffensmeier and Ulmer 2005; 2006), Hispanic communities have been shown to have exceptionally strong social capital networks and kinship/familial bonds that provide community residents with resources and support (e.g., financial, child care, social support) (Healey 2006; Martinez and Lee 1998; Martinez 2002). Hispanic neighborhoods also tend to have a strong sense of unity and social cohesion based on shared heritage, language, and traditions. Additionally, Hispanic communities and enclaves may benefit from active ethnic economies which contribute resources, employment opportunities, and a vibrant sense of community and street life to Hispanic populations (Healey 2006; Klinenberg 2002; Light and Gold 2000; Martinez and Lee 1998; Martinez 2002).

Research suggests that these ethnic economies and social capital/kinship networks are strengthened in part due to high levels of immigration in Hispanic communities. The influx of new immigrants is likely to increase community cohesion and strengthen community bonds by reestablishing shared traditions and providing a fresh infusion of Hispanic culture in the community (Lee et al. 2001; Martinez and Lee 1998; Martinez et al., 2004; Nielsen et al. 2005;

Riedel 2003; Velez 2006; also see Sampson et al. 2005; Sampson and Bean 2006). Additionally, patterns of “chain migration” help widen familial and social capital networks as new immigrants settle in areas where they share familial/friendship or ethnic ties with other residents (Healey 2006; Martinez 2002; Martinez et al. 2004). Furthermore, immigration may help strengthen important institutions (e.g., schools, churches, social services) and draw new resources into Hispanic communities (Martinez and Lee 1998; Riedel 2003; Velez 2006).

In light of these protective factors in Hispanic communities, structural conditions like disadvantage may have somewhat different effects on Hispanic violence compared to their effects on violence for whites and blacks (Moore and Pinderhughes 1993; Riedel 2003). That is, these protective factors may serve as a “buffer” to reduce the harmful, crime-producing effects of disadvantage in Hispanic communities (Martinez and Nielsen 2006; Nielsen et al. 2005; Velez 2006). However, due to the scarcity of empirical research on Hispanic crime, it is unclear whether disadvantage and other structural factors have similar/different effects on Hispanic violence compared to their effects on white and black violence.

Only a handful of studies have compared the structural sources of Hispanic violence with the predictors of black and/or white violence (Lee et al. 2001; Martinez 2002; 2003; Martinez and Lee 1998; Martinez and Nielsen 2006; Martinez et al. 2004; Nielsen et al. 2005; Phillips 2002; Sampson et al. 2005). Additionally, these studies have typically focused on only one or two cities and have often provided mixed evidence for racial invariance arguments (Martinez and Lee 1998; Lee et al. 2001; Martinez and Nielsen 2006; Riedel 2003; Sampson et al. 2005; Velez 2006; see the review in Peterson and Krivo 2005). These studies generally show that structural disadvantage contributes to violence for Hispanics, whites, and blacks (Martinez 2003; Phillips 2002; Sampson et al 2005). However, this research also shows that the predictors of Hispanic

violence vary somewhat from those of whites and blacks (Lee et al. 2001; Martinez 2003; Phillips 2002; Nielsen et al. 2005). As a result, comparisons of Hispanics with whites and blacks have yielded fairly mixed findings and conclusions for the racial invariance hypothesis. Thus, further research is needed to address whether the structural sources of Hispanic violence are similar to the predictors of black and white violence.

Confounded Race-Specific Measures of Violence

Prior research comparing black and white violence has often relied on race-specific crime measures from the FBI's Uniform Crime Report (UCR) that are confounded with Hispanic crime figures and could lead to biased conclusions about racial invariance. While UCR data have several strengths, they provide limited information on the race of offenders and currently provide no Hispanic identifiers. As a result, Hispanic arrest figures are combined with black and especially with white crime figures and cannot be separated from the white and black categories (Steffensmeier and Demuth 2000; 2001). Therefore, prior white-black violence comparisons are likely to be confounded with Hispanic crime figures and are possibly biased due to the reliance on UCR data and other official data sources with limited race/ethnic categories.

Reliance on City-Level Data

Prior tests of racial invariance have often used city-level analyses (i.e., the 100-125 largest cities in the U.S.), which present problems for comparing the structural sources of violence across race/ethnicity. First, city-level comparisons rarely provide data on comparable race/ethnic populations. For example, black and white populations at the city-level rarely face similar structural conditions, and black disadvantage is typically much worse and more concentrated than white disadvantage. This is problematic for testing racial invariance arguments because several scholars argue that disadvantage has similar effects on black and

white violence, but only when black and white communities have similar levels of disadvantage (Krivo and Peterson 2000; McNulty 2001; Peterson and Krivo 2005). Thus, some of the mixed findings from prior racial invariance studies may stem from use of city-level data that do not describe similarly-situated race/ethnic populations.

Second, cities are so large that it can be difficult to observe community-level processes and structural effects on violence. Large cities have a great deal of internal diversity and do not closely reflect “communities” or cohesive social units. For example, the white population within a city is likely to vary substantially across neighborhoods. Thus, structural analyses at the city-level that examine a race/ethnic population are likely to contain a great deal of “noise” and may not capture influences on violence that are found among smaller communities or neighborhoods (Peterson and Krivo 2005).

Third, city-level analyses tend to truncate variation in measures and predictors of violence and therefore, provide a limited picture of the race/ethnicity-violence relationship. Structural conditions like poverty, education, population size, and violence are not likely to vary much across the 100-125 largest cities in the U.S. For example, black structural disadvantage is likely to be high and fairly similar across the 100 largest cities. Thus, it is more difficult to estimate and compare structural effects on violence across race/ethnicity using city-level data that contain little variation in structural conditions.

Failure to Provide Formal Tests of Racial Invariance

A final limitation in prior research is that conclusions about racial invariance have often been based on visual observation of effect sizes. Research has rarely used formal significance tests (i.e. Z-tests or F-tests) to determine whether structural factors have *significantly* different effects on violent offending across race/ethnic groups (Patternoster et al. 1998; Clogg et al.

1995). Instead, scholars have argued that black and white predictors of violence vary if structural factors significantly predict violence for one group but not the other. For example, if poverty is significantly and positively related to white homicide but has no significant effect on black homicide, researchers have often argued that poverty does not have similar effects on black and white violence (Harer and Steffensmeier 1992; LaFree et al. 1992; Phillips 2002). However, this difference in effects for blacks and whites may not be significantly different. Thus, there may have been a tendency in prior research to claim that structural sources of violence vary across race/ethnicity when they actually do not. Additionally, by failing to use significance tests, prior research has rarely been able to discern whether the *magnitude* of effects varies across race/ethnic groups.

The research described in this chapter addresses the limitations of prior research identified above and extends research on racial invariance and the race/ethnicity-violence relationship in several ways. First, this research moves beyond the standard white-black comparisons of prior studies and compares the structural sources of violence for three race/ethnic groups: blacks, whites, and *Hispanics*. This added focus on Hispanic violence is advantageous because it broadens our understanding of racial invariance beyond a basic black and white picture and also adds to the underdeveloped literature on Hispanic crime. Second, I examine whether support for the racial invariance hypothesis depends on how racial invariance is defined. Specifically, the structural sources of violence for blacks, whites, and Hispanics are examined using both *narrowly-defined* and *broadly-defined* interpretations to see if evidence on racial invariance depends on whether one focuses on particular structural effects or on the general, underlying effects of disadvantage on violence. Third, a census place-level analysis is used to provide greater variation in measures of violence and social structure and to provide more

similarly situated race/ethnic populations for testing the racial invariance hypothesis. Fourth, this research separates Hispanic, black, and white crime figures to provide measures of black and white violent crime that are not confounded with Hispanic crime figures and are therefore less likely to produce biased results. Last, this project extends prior research by using formal significance tests to compare the structural effects and the *magnitude* of these effects on violence across race/ethnic groups.

DATA AND METHODS

The current study compares the structural predictors of black, white, and Hispanic arrest rates for homicide and the Violent Index. Information on race/ethnicity-disaggregated violence is drawn from California Arrest Data (CAL) and New York State Arrest Data (NYSAD) for the 1999-2001 period. Information on the structural characteristics of white, black, and Hispanic populations is drawn from 2000 U.S. Census data. The *unit of analysis* is the census place, which is described in greater detail in the following paragraphs.

CENSUS PLACES

Census places include two types of non-overlapping geographic units: incorporated places and non-incorporated census designated places (CDPs). The majority of census places are classified as incorporated places (approximately 82 percent in the current study; 83 percent across the U.S.). Incorporated places include a variety of geographic areas that are recorded by the U.S. census bureau (e.g., cities, villages, towns, and boroughs) and may vary greatly in terms of size, ranging from several hundred to several million residents. Incorporated places are legally-recognized under the laws of their respective states and typically have active governing bodies (U.S. Bureau of the Census 1994). Requirements for incorporation vary across states and may depend on a variety of factors, such as the place's population size, land area, and distance

from other incorporated places. However, these requirements are often loosely defined and may require that places have only 200 or 300 people to be recognized as an incorporated town or city.¹

The second type of census place recorded by the U.S. Census Bureau is the “census designated place.” CDPs are similar to incorporated places in many ways in that they typically include large concentrations of people, housing, and commercial structures that are recognizable by name and typically have distinct geographic boundaries. However, unlike incorporated places, CDPs are not officially incorporated or recognized by their respective states and rarely have their own active governing bodies. Additionally, there are no minimum population or density requirements to be recognized as a CDP. Otherwise, they are quite similar to incorporated places. As a result, the U.S. Census Bureau recognizes them as distinct places and records their populations and community characteristics.

Though rarely used as a unit of analysis in criminological research, census places are well-suited for this analysis and have several advantages. First, they are large enough to provide reliable measures of violence and social structure for each racial/ethnic group (using some selection criteria) but small enough to preserve a large sample size for the analysis. Second, as described above, census places vary widely in terms of size, structural characteristics, and rates of violence. Prior aggregate research on race/ethnicity and violence has typically used city-level analyses, which tend to truncate variation in independent and dependent measures. For example, studies examining the largest 100-125 cities provide a limited picture of the race/ethnicity and violence relationship and do not offer information about violent offending and the structural

¹ In California, cities and towns may be considered for incorporation if they meet the state requirement of 500 registered voters. To be incorporated in New York, villages must have at least 500 people and at least 100 people per square mile. Incorporation of cities requires a special act of the New York state legislature, but there are no population requirements for incorporated cities in New York (U.S. Bureau of the Census 1994).

conditions of smaller black and white populations. By including a wider range of variation in size and structural characteristics, census places avoid problems associated with truncating variation in independent and dependent measures.

Third, the greater variation in structural characteristics across census places provides greater overlap in the structural conditions across race/ethnic populations. As discussed earlier, city-level studies rarely provide data on comparable, similarly-situated race/ethnic populations. As a result, prior research has generally been unable to compare black and white populations that have similar levels of disadvantage, which some argue may explain the mixed findings of prior racial invariance studies (see Krivo and Peterson 2000; McNulty 2001; Peterson and Krivo 2005). Census place-level analyses avoid this problem to a greater degree by providing more potential overlap in black, white, and Hispanic measures of disadvantage and social structure. For example, as shown later, mean census place rates of unemployment, poverty, education, family structure, and residential mobility for blacks, whites, and Hispanics are within approximately 1 standard deviation of each other. Thus, even though white populations do not experience the most extreme levels of disadvantage found among blacks and Hispanics, census places provide sizable overlap in the structural conditions for each race/ethnic groups and more opportunity for comparing “similarly situated” race/ethnic groups.²

Several selection criteria were used to select census places for the analysis in order to provide greater reliability in the race- and ethnicity-specific measures of violence and social structure. Census places were included only if they had a total population of at least 10,000 and

² For example, the average percentage of blacks who are unemployed/not in the labor force (29 percent) is higher than either the white (25 percent) or Hispanic (22 percent) unemployment rates (see Table 2.2). However, the standard deviations for the black, white, and Hispanic unemployment measures (11.2, 6.7, and 6.9, respectively) indicate that there is considerable overlap in census-place unemployment rates across race/ethnic groups. This pattern of variation and overlap is similar for other structural measures of the analyses but is somewhat less prominent for poverty measures, particularly for black-white comparisons.

1,000 black, white, and Hispanic residents in the year 2000, resulting in a final sample of 234 census places.³ The census places meeting these criteria have an average population of approximately 133,000, with approximately two-thirds of census places in the sample having populations between 10,000 and 485,000 people.

DEPENDENT VARIABLES

Data on black, white, and Hispanic violent crime were drawn from the California Arrest Data (CAL) and the New York State Arrest Data (NYSAD).⁴ The CAL and NYSAD provide agency-level arrest counts for a variety of offenses, disaggregated by race, ethnicity, age, and gender. These data sources are particularly well-suited for this project because, unlike the Uniform Crime Reports (UCR) and many commonly used sources of crime data, they provide separate “Hispanic” identifiers. Thus, the data offer essential information for analyzing Hispanic violence and allow comparisons of black and white violence that are not confounded with Hispanic crime figures. Agency-level arrest counts for whites, blacks, and Hispanics were compiled and combined with year 2000 race/ethnicity-disaggregated population figures for each census place (U.S. Census Bureau – STF 4) to create the dependent measures for the analysis: white, black, and Hispanic arrest rates/100,000 for homicide and Violent Index offenses.⁵

³ Approximately 440 census places met the criteria of having a total population of at least 10,000. However, Seemingly Unrelated Regression analysis requires that the same sample of census places is used to predict violence for all 3 race/ethnic groups. Thus, the final sample of census places required at least 1,000 of each group in order to use SUR analysis, leaving a sample of 234 census places.

⁴ The California arrest data were obtained from the California Bureau of Criminal Information and Analysis (1999-2001). The New York State Arrest Data were obtained from the New York State Division of Criminal Justice Services (1999-2001).

⁵ Agency-level arrest counts were linked to UCR Crosswalk Data (U.S. Department of Justice 2000) to further aggregate arrest data to the census place-level. This final aggregation was necessary because independent variables drawn from U.S. Census data were available at the census place-level but not for each arresting agency. Arrest counts for each racial/ethnic group include only offenders ages 10-64. Violent Index offenses include arrests for homicide, rape, robbery, and aggravated assault. Following the procedures used in prior demographic research (Logan et al. 2004), population counts for the “black alone or including any other race” are used as a proxy for the black population. Alternative measures of the black population produced similar population estimates.

Research has often noted potential problems with using arrest data to measure race- and ethnicity-specific violence. To address these criticisms, the current analysis focuses on index-violent arrests (i.e., homicide and Violent Index) – which are considered “serious” offenses and are more reliably reported across demographic groups (Hindelang 1978; 1981; LaFree et al. 1992; Sampson 1987; Steffensmeier et al. 2005; Steffensmeier and Feldmeyer 2006). To add stability to measures of violent offending and to ensure the data include adequate arrest counts for statistically rare offenses (e.g. homicide), year 2000 arrest rates were calculated using 3-year averaged arrest figures for the 1999-2001 period. Both dependent variables had positively skewed distributions and required square-root transformations to impose normal distributions for each measure of violence.⁶

INDEPENDENT VARIABLES

The independent variables were drawn from prior communities and crime research and include black, white, and Hispanic measures of structural characteristics at the census place-level. These structural measures were drawn from 2000 U.S. Census data (Summary Tape File 4) and include the following place-level variables: poverty rates, unemployment rates, education levels, family structure, the size of the young-male population, residential mobility, immigration, racial/ethnic heterogeneity, population size, and population density. Excluding population size, density, and heterogeneity, all of the independent variables are disaggregated by race/ethnicity. Table 2.1 provides the reader with more detailed descriptions of the independent variables and their operationalizations.

Poverty is measured as the percentage of residents in a census place with income levels below the poverty line. *Unemployment* reflects the percentage of males in each census place

⁶ Log transformations are frequently used to transform positively skewed measures of violence in aggregate-level studies of crime. However, preliminary analyses revealed that square root transformations produced more normal distributions in the dependent measures than logarithmic transformations (for similar procedures, see Phillips 2002).

who were at least 16 years old and were either unemployed or not in the labor force in the year 2000. *Education* is measured using the percentage of the population age 25 and over that has at least a high school degree (or equivalent). Additionally, these three measures were combined using principal components analysis to create disadvantage indices for each race/ethnic group. For each race/ethnic group, the measures of poverty, unemployment, and education loaded strongly on one dimension, indicating that they were related to a single construct that is referred to as the *structural disadvantage index*. As discussed in the next section, the disadvantage indices are used in place of the three individual measures of structural disadvantage to examine whether general disadvantage measures and particular disadvantage measures have different effects on violence across race/ethnicity.

In addition to these disadvantage measures, the analysis includes several other structural predictors of black, white, and Hispanic violence. *Family structure*, which is also commonly considered a measure of community disadvantage, is measured using the percentage of families that had female heads and children less than 18 years of age.⁷ The relative size of the *young-male population* is measured using the percentage of males age 15-24 for each race/ethnic group. *Residential mobility* reflects the percentage of households that did not have the same residents throughout the 5-year period from 1995 to 2000. *Immigration* is measured using the percentage of each race/ethnic group that is foreign-born. A 3-group (black, white, and Hispanic) entropy index was calculated to measure *racial/ethnic heterogeneity*. The entropy index (E) is a multi-group measure of the diversity of a geographic area calculated as:

⁷ Poverty, unemployment, and education had factor loadings greater than .70 for each race/ethnic group. Family structure was excluded from the structural disadvantage index because principal components analysis results indicated that it did not load strongly (less than .50) onto the same factor as measures of poverty, unemployment, and education for all race/ethnic groups. Therefore, family structure is used as a separate predictor in the multivariate models.

$$E = \sum_{m=1}^M \pi_m \ln(1 / \pi_m)$$

where, π_m is the proportion of people in race/ethnicity m (e.g., proportion black) and M is the total number of racial/ethnic groups (Reardon and Firebaugh 2002). The minimum value of E approaches 0 when a census place has no diversity and is composed entirely of one racial/ethnic group. The maximum value of E is approximately 1.099, which occurs when blacks, whites, and Hispanics are equally represented in a census place. *Population size* is measured using the logged total population for the census place. Additionally, *population density* reflects the number of persons per square mile of land.⁸

Multicollinearity among structural predictors is a common concern among macro-level studies using multiple measures of structural disadvantage. Thus, several steps were taken to identify and manage potential multicollinearity problems among the independent variables. First, variables were carefully selected with close attention being given to correlations among the measures. With one exception (i.e., the relationship between unemployment and education for whites), none of the independent variables included in the analysis are correlated above $r = .65$ (see Tables 2.3 through 2.5). Second, in addition to the full models, each of the structural disadvantage measures (poverty, unemployment, education, and family structure) were entered into separate regression models with the set of control variables (e.g. population size, density). The substantive findings for racial invariance from these separate models were similar to those

⁸ In several supplemental models, dummy variables are included to control for the state in which census places were located (New York or California) (results not shown). Violent index arrest rates for all three race/ethnic groups were shown to be lower in New York than in California census places. Homicide rates in New York census places were similar for whites, lower for Hispanics, and higher for blacks than California rates. Inclusion of the *state* dummy variable had little impact on the substantive results presented below or conclusions about the racial invariance hypothesis.

shown in the full models.⁹ Third, regression diagnostics revealed that variance inflation factor (VIF) scores were at acceptable limits (below 4.0) for all of the variables included in the final models.

ANALYTIC PROCEDURES

This analysis uses seemingly unrelated regression (SUR) models to compare the structural sources of violence for whites, blacks, and Hispanics for the 1999 to 2001 period. SUR models are well-suited for this analysis because, unlike OLS models, they can account for the fact that the white, black, and Hispanic samples used in this analysis are not drawn from independent samples and actually include the same set of census places (Ousey, 1999; Peterson and Krivo, 1999; Phillips, 2002; Steffensmeier and Haynie, 2000). Because the black, white, and Hispanic models rely on the same sample of census places, the coefficients for each model are likely to be correlated, and OLS regression is likely to produce inefficient estimates of the predictors of violence for each race/ethnic group. As a result, statistical tests comparing the predictors of violence across race/ethnicity are likely to be biased using OLS regression (King 1989; Schwartz 2006; Zellner 1963).

SUR techniques address these problems by simultaneously estimating models for each race/ethnic group and accounting for the similar samples and correlated errors across the white, black, and Hispanic models. SUR regression calculates a covariance of errors across the race/ethnicity-specific models and then uses generalized least squares to weight estimates appropriately for each race/ethnic group based on the correlated error terms (King, 1989; Schwartz 2006). This procedure results in more efficient estimates for each race/ethnic group

⁹ The significance levels of several predictors (poverty and family structure) were somewhat reduced in the full models compared to the individual models, especially for whites. However, the *differences* in effects across race/ethnic groups remained substantial in both the separate and full models. Thus, interpretations for racial invariance were similar for both the reduced and full models.

and reduces potential bias in statistical tests (*Z*-tests, *F*-tests) used to compare the predictors of violence across groups.

Z-tests described by Clogg et al. (1995) and Paternoster et al. (1998) are used to compare the predictors of violence across race/ethnicity and test for statistically significant variation in the predictors of black, white, and Hispanic violence.¹⁰

RESULTS

DESCRIPTIVE STATISTICS

Table 2.2 provides the means and standard deviations for the independent and dependent variables and reveals several noteworthy patterns in violence and structural characteristics among white, black, and Hispanic populations. Table 2.2 shows that for both homicide and Violent Index offenses, year 2000 arrest rates are the highest for blacks and lowest for whites. Hispanic rates consistently fall between black and white arrest rates but are somewhat closer to white rates of violence. For example, the average homicide rates/100,000 are 15.5 for blacks, 6.3 for Hispanics, and 2.9 for whites. Similarly, mean Violent Index arrest rates/100,000 are 1282.5 for blacks, 502.7 for Hispanics, and 321.6 for whites. Table 2.2 also shows that there is substantial variation in violence rates across census places for all three groups. For example, the standard deviations indicate that for 95 percent of the census places, homicide rates range from approximately zero to approximately 14/100,000 for whites, 24/100,000 for Hispanics, and slightly more than 56/100,000 for blacks. Thus, as seen in prior research, violence rates vary widely across race/ethnicity and place. Additionally, Hispanics and especially blacks appear to be overrepresented among arrests for serious violent offenses compared to whites.

¹⁰ The formula for the *Z*-test used to compare coefficients across black, white, and Hispanic models is as follows: $Z = (b_1 - b_2) / (\sqrt{SEb_1^2 + SEb_2^2})$, where b_1 = the coefficient of a predictor for group 1, and b_2 = the coefficient of the same predictor for group 2.

Table 2.2 also reveals that structural disadvantage is more severe among blacks and Hispanics than among whites. Black and Hispanic poverty levels are similar, with about 19 percent of the black and Hispanic populations living below the poverty line. In contrast, the white poverty rate (8.7 percent) is less than half of black and Hispanic poverty levels. Poverty rates vary across census places, especially for Hispanics and blacks. The standard deviations indicate that the percentage of people in poverty ranges from near zero for all three groups to as much as 19 percent for whites and close to 40 percent for blacks and Hispanics across 95 percent of census places. Thus, while poverty rates are higher for minorities, the wide variation in poverty across census places provides substantial overlap in the structural conditions of whites, blacks, and Hispanics.

Whites also enjoy higher education levels than blacks and Hispanics. On average, more than 86 percent of whites have at least a high school education, while 81 percent of blacks and only 58 percent of Hispanics have high school degrees. The standard deviations indicate that education levels vary across census places for all three groups. Specifically, the percentage of whites with high school degrees ranges from approximately 73 percent to close to 100 percent for 95 percent of the sample. There is even greater variation in Hispanic and black education, with the percentage of residents with high school degrees ranging from approximately 30 to 86 percent for Hispanics and 55 to nearly 100 percent for blacks.

Unemployment shows a slightly different pattern, with Hispanics having the lowest percentage of unemployed males (21.7 percent), followed by whites (25.0 percent) and then blacks (29.2 percent). The standard deviations indicate that the percentage of unemployed males ranges from about 12 to 38 percent for whites, 8 to 36 percent for Hispanics, and 7 to 51 percent for blacks across 95 percent of census places in the sample. The percentage of female-headed

families with children was lowest among whites (8.3 percent) followed by Hispanics (15.1 percent) and blacks (24.6 percent). Similar to the other measures of disadvantage, family structure varies widely across places for blacks (std. dev. = 11.0), Hispanics (std. dev = 8.2), and much less so for whites (std. dev. = 3.6).

Several of the remaining structural variables also reveal interesting patterns across race/ethnicity. Table 2.2 shows that the size of the young male population (ages 15-24) varies slightly across race/ethnic groups, with Hispanics having the largest percentage of young males (9.7 percent), followed by blacks (8.1 percent) and then whites (5.9 percent). The relative sizes of the young, male populations vary only slightly across census places based on the standard deviations for whites (2.8), Hispanics (3.0), and blacks (3.9). As one might expect, immigration rates - measured as the percentage of foreign-born residents – are more than five times higher among Hispanics (36.5 percent) than among blacks and whites (7.1 and 7.3 percent respectively). Additionally, Hispanic immigration rates vary more than white and black rates across census places. The standard deviations indicate that the percentage of foreign-born residents is as low as 0 for all three groups but is as high as 65 percent for Hispanic, 18 percent for whites, and 21 percent for blacks across 95 percent of census places. Lastly, residential mobility is the lowest among whites (44.1 percent), while slightly more than half of black and Hispanic households experienced turnover from 1995 to 2000.

RACIAL INVARIANCE IN THE STRUCTURAL SOURCES OF VIOLENCE

Bivariate Results

Tables 2.3, 2.4, and 2.5 display the bivariate correlation matrices for whites, blacks, and Hispanics, which are used to examine and compare the relationships between structural predictors (e.g., structural disadvantage, poverty, unemployment) and violence across

race/ethnicity. First examining the particular/specific predictors, the bivariate findings show that poverty is positively correlated with homicide and Violent Index rates for all three race/ethnic groups. This indicates that places with relatively more residents in poverty tend to have higher homicide and Violent Index rates. Additionally, Tables 2.3, 2.4, and 2.5 show that the percentage of residents in poverty has some of the strongest correlations with violence of all the structural predictors.

The bivariate results indicate that male unemployment is positively related to white violence, but is not linked strongly to Hispanic or black violence. Table 2.3 shows that the percentage of unemployed males is strongly and positively correlated with white homicide ($r = .25$) and Violent Index rates ($r = .413$), which indicates that white violence is higher in places with higher white, male unemployment rates. Tables 2.4 and 2.5 show that male unemployment is positively related to Hispanic and black homicide ($r = .17$ and $r = .21$, respectively) but has almost no relationship with Violent Index rates for Hispanics ($r = -.04$) or blacks ($r = .04$).

Turning next to the education-violence relationship, the percentage of high school graduates is negatively correlated with white and Hispanic rates of homicide and Violent Index offenses, which suggests that white and Hispanic violence rates are lower in census places with larger percentages of white and Hispanic high school graduates (Tables 2.3 and 2.4). Table 2.5 shows that the percentage of high school graduates is also negatively related to black homicide ($r = -.21$) but has a positive relationship with black Violent Index rates ($r = .15$). This suggests that black homicide is lower but that black Violent Index rates are higher in place with higher black education levels.

The bivariate relationships between family structure and violence vary widely across race/ethnicity. Table 2.5 shows that the percentage of female-headed families with children is

strongly and positively related to black homicide ($r = .32$) and Violent Index rates ($r = .36$), indicating that black violence is higher in census places with relatively more black female-headed families. Additionally, the family structure-violence correlations are among the strongest bivariate relationships with violence observed for blacks. In contrast, the percentage of female-headed families with children has much weaker relationships with homicide for whites ($r = .08$) and Hispanics ($r = .13$) and actually has a negative relationship with Hispanic Violent Index rates ($r = -.12$). Thus, the bivariate results provide little support for *narrowly-defined* racial invariance arguments and show that the relationships between particular structural measures and violence and the magnitudes of these relationships vary widely across whites, blacks, and Hispanics.

Turning next to the structural disadvantage index, the bivariate results indicate that the structural disadvantage index is positively correlated with homicide and Violent Index rates for whites, Hispanics, and blacks. This indicates that violence rates are higher for all three groups in places with more structural disadvantage. However, it is worth noting that the magnitudes of these bivariate relationships vary across race/ethnicity.

In sum, the bivariate results provide some support for *broadly-defined* interpretations of the racial invariance hypothesis and indicate that structural disadvantage contributes to violence for whites, Hispanics, and blacks. However, the results provide little support for *narrowly-defined* interpretations of racial invariance. Specifically, the correlations in Tables 2.3 through 2.5 suggest that specific/particular structural predictors have varying effects (in direction and magnitude) on violence across race/ethnicity. Thus, the bivariate results indicate that evidence for the racial invariance hypothesis *may* depend on how invariance is defined. However, it is unclear whether these bivariate findings and effects persist net of other structural controls. To provide more rigorous tests of these tentative conclusions, we turn next to multivariate models.

Multivariate Results

Tables 2.6 through 2.9 show the results of the seemingly unrelated regression models predicting white, black, and Hispanic rates of homicide and the Violent Index. In each table, separate models are estimated for each race/ethnic group in order to test the racial invariance hypothesis and compare the structural predictors of violence across race/ethnicity. Additionally, each table provides Z-test results comparing the magnitude and direction of the effects of structural predictors of violence across race/ethnic groups (black-white, Hispanic-white, Hispanic-black comparisons). Results are first presented for homicide models and then replicated and discussed for Violent Index models.

In order to examine racial invariance using both a *narrowly-defined* approach and a *broadly-defined* approach, two sets of multivariate tables and results are provided for each offense examined. First, to address the *narrowly-defined* approach, Table 2.6 reports homicide models for each race/ethnic group that test whether particular measures of disadvantage and social structure (e.g., poverty, unemployment, education) have similar/different effects on violence across race/ethnic groups. Then, Table 2.7 presents a second set of homicide models that replicates the earlier models from Table 2.6 but replaces the particular measures of disadvantage with the structural disadvantage indices for each race/ethnic group. This second set of models more closely addresses the *broadly-defined* approach for examining racial invariance and tests whether structural disadvantage generally contributes to violence for all three race/ethnic groups. These steps are then replicated for the Violent Index models, which are shown in Tables 2.8 and 2.9.

Homicide

Table 2.6 shows the results of models estimating black, white, and Hispanic homicide rates using a *narrowly-defined* approach. The results reveal several noteworthy structural effects on violence for each race/ethnic group, but also show several important race/ethnic *differences* in the predictors of violence.

Table 2.6 shows that poverty has a significant and positive effect on black and Hispanic homicides, indicating that places with greater black and Hispanic poverty have higher black and Hispanic homicide rates. In contrast, poverty has no significant effect on white homicide. Additionally, the Z-test results indicate that the black poverty effect on violence is significantly stronger than the null effect for whites ($Z = 2.78, p < .01$). Poverty rates also contribute more strongly to Hispanic homicide than to white homicide, but the difference in these effects is only marginally significant ($Z = 1.80, p < .10$). Thus, the results suggest that the effects of poverty on homicide vary across race/ethnic groups, with poverty contributing most strongly to black homicides, followed by Hispanics, and having no noticeable effect on white homicide.

The results also show that unemployment contributes significantly to white homicide but not to Hispanic or black homicide rates. Thus, high rates of unemployment appear to increase white homicide but not black or Hispanic homicide. Additionally, the difference between the white and black effects is significant ($Z = 2.38, p < .05$), indicating that unemployment has a significantly stronger effect on white homicide than on black homicide. Although the effect of unemployment is non-significant for Hispanics, the difference between the white and Hispanic effects is only marginally significant ($Z = 1.65, p < .10$).

Education has negative effects on homicide for all three race/ethnic groups, indicating that places with greater high school graduation rates are less likely to experience homicide across

race/ethnicity. However, there are significant differences in the magnitude of the education effects across race/ethnic groups. Table 2.6 shows that education has a significantly stronger effect on blacks than it has on Hispanics ($Z = 1.97, p < .05$). Thus, the results suggest that greater education reduces homicide more for blacks than for Hispanics.

Turning to the final disadvantage measure, the results indicate that family structure does not influence homicide rates for whites, blacks, or Hispanics. Table 2.6 shows that the percentage of female-headed families with children has no significant effects on homicide for any of the three race/ethnic groups examined. Additionally, the effects for each race/ethnic group are not significantly different. Thus, family structure appears to have little impact on homicides, net of other disadvantage measures.

Table 2.6 reveals that several of the remaining structural control variables also have noteworthy effects on homicide across race/ethnic groups. Population size has positive effects on homicide rates for whites, blacks, and Hispanics, indicating that census places with more people have higher black, white, and Hispanic homicide rates compared to less populous census places. Additionally, the Z -tests reveal that population size contributes to black homicide significantly more strongly than it contributes to white (and possibly Hispanic) homicide rates. The results indicate that residential mobility reduces Hispanic but not white or black homicide rates. Additionally, this effect is significantly stronger for Hispanics than for either blacks or whites. Last, racial/ethnic heterogeneity has similar positive effects on homicide for all three groups, indicating that racial and ethnic diversity contributes to greater homicide rates for whites, blacks, and Hispanics.¹¹

¹¹ In supplemental analyses, an alternative entropy index that includes whites, blacks, Hispanics, and “other race/ethnicities” was used to estimate the effects of racial/ethnic heterogeneity on each form of violence for whites, blacks, and Hispanics (results not shown). The supplemental results were similar to the homicide and Violent Index results presented here with only 1 exception: the effect of racial/ethnic heterogeneity on homicide was still positive

Overall, these findings provide little support for the racial invariance hypothesis based on a *narrowly-defined* interpretation of invariance. Table 2.6 shows that there are several notable differences in the structural predictors of violence among whites, blacks, and Hispanics. Disadvantage measures – such as poverty, unemployment, and education – as well as other structural factors have different effects on violence across race/ethnicity. Additionally, the results show that the magnitudes of these structural effects on homicide vary across the 3 race/ethnic groups examined. Thus, contrary to racial invariance arguments, the results suggest that specific structural factors have differing directions and magnitudes of effects on homicide across race/ethnicity.

Turning next to *broadly-defined* interpretations of racial invariance, Table 2.7 again predicts white, black, and Hispanic homicide rates but replaces the specific disadvantage measures from Table 2.6 with more general structural disadvantage indices for each race/ethnic group. Outside of the structural disadvantage and family structure effects, the other structural predictors have similar effects on homicide as the models described above. Therefore, the following discussion focuses on the effects of the disadvantage indices and family structure on homicide.

As expected, the structural disadvantage indices have significant, positive effects on homicide for all three groups, which indicates that disadvantage contributes to black, white, and Hispanic homicide. These results provide at least some support for the broadest interpretations of racial invariance arguments and indicate that structural disadvantage plays a central role in the violence-generating process for whites, blacks, and Hispanics.

but just missed significance for blacks in the first series of models (the equivalent of Table 2.3). However, as seen above, the effects of racial/ethnic heterogeneity on homicide (or Violent Index rates) did not differ significantly across race/ethnic groups.

On the other hand, if one considers the magnitudes of these effects, there are substantial racial/ethnic differences in the effects of the disadvantage indices on homicide. Table 2.7 shows that while disadvantage contributes to homicide for all three race/ethnic groups, the disadvantage index has significantly stronger effects on black than on white or possibly Hispanic homicide ($Z = 2.43, p < .05$ and $Z = 1.67, p < .10$, respectively). Thus, disadvantage appears to have the greatest impact on black homicide and contributes to homicide more strongly for blacks than for other race/ethnic groups.

In contrast to the models from Table 2.6, the results in Table 2.7 show that family structure influences black homicide but not white or Hispanic homicide. The percentage of black, female-headed families with children significantly contributes to black homicide, indicating that census places with relatively more black, female-headed families with children are more likely to have high black homicide rates. Additionally, the effect of family structure is significantly stronger for blacks than for either whites or Hispanics, which suggests that family structure influences black homicide more strongly than it influences either white or Hispanic homicide.

In sum, the results from Tables 2.6 and 2.7 provide weak support for the racial invariance hypothesis. Support for the racial invariance hypothesis is found only if one uses the broadest possible interpretation of racial invariance – i.e., that general measures of structural disadvantage contribute to violence for all three race/ethnic groups. However, outside of this broad generalization, there is little support for racial invariance arguments. The racial invariance hypothesis receives little to no support when one uses narrowly-defined interpretations of invariance. Specifically, the results show that (1) the particular structural predictors of homicide (e.g., poverty, unemployment, education, family structure, etc.) vary across race/ethnicity, and

(2) the magnitudes of structural effects on homicide vary widely across race/ethnic groups, even for general disadvantage indices.

Violent Index

Turning next to the Violent Index models (sum of arrests for homicide, robbery, rape, and aggravated assault), Table 2.8 shows the results of models predicting black, white, and Hispanic Violent Index rates using a *narrowly-defined* approach. Although these results differ from the homicide results in several ways described below, there is also considerable similarity between the Violent Index and homicide results.

As seen in the homicide models, Table 2.8 shows that poverty has significant, positive effects on Violent Index rates for blacks and Hispanics but not for whites. This indicates that places with higher black and Hispanic poverty rates have higher black and Hispanic Violent Index rates. Additionally, the *Z*-tests show that the poverty effects are stronger for blacks and Hispanics than for whites ($Z = 4.15, p < .001$ and $Z = 2.88, p < .01$, respectively). Thus, as observed in the homicide models, the effects of poverty on Violent Index rates vary across race/ethnic groups, with poverty having the strongest effects on black and Hispanic violence.

The results show that unemployment contributes significantly to white Violent Index rates but not to Hispanic or black rates. Additionally, the *Z*-test results indicate that the effect of unemployment is significantly stronger for whites than for blacks or Hispanics ($Z = 1.98, p < .05$ and $Z = 3.19, p < .001$, respectively). This finding closely parallels the results observed in the homicide models and indicates that unemployment is a key source of white violence but has little effect on black or Hispanic violence.

In contrast to the homicide models, education has a negative effect on Violent Index rates for whites but not for blacks or Hispanics. Thus, census places with greater white high school

graduation rates are less likely to experience white violence. Additionally, the education effects for whites are significantly stronger than the effects for blacks ($Z = 4.26, p < .001$) and Hispanics ($Z = 2.97, p < .01$), which suggests that education has a stronger impact on white violence than on either black or Hispanic violence.

Family structure is also significantly related to Violent Index rates for blacks and Hispanics. Table 2.8 shows that the percentage of black female-headed families with children has a positive effect on black Violent Index rates, indicating that census places with relatively more black female-headed families have greater black rates of violence. In contrast, the effect of family structure on Hispanic violence is negative, indicating that an increase in the share of Hispanic female-headed families with children leads to a drop in Hispanic violence. Additionally, the Z-test results indicate that the percentage of female-headed families contributes to violence more strongly for blacks and whites than for Hispanics.

In addition to the structural disadvantage effects described above, several other structural predictors have varying effects on violence across race/ethnic groups. For example, Table 2.8 reveals that population size contributes to black and to Hispanic Violent Index rates but not to white rates, and has the strongest effects on black rates. The relative size of the young, male population has a negative effect on black but not white or Hispanic violence rates. Residential mobility contributes to white but not black or Hispanic Violent Index rates. Last, racial/ethnic heterogeneity appears to contribute to greater white and Hispanic violence but does not influence black violence.

Similar to the homicide models, the results of the Violent Index models described above provide little support for *narrowly-defined* interpretations of the racial invariance hypothesis. Table 2.8 reveals several notable differences in the particular/specific structural predictors of

violence among whites, blacks, and Hispanics. Additionally, the magnitudes of these structural effects on violence vary across race/ethnic groups.

To examine racial invariance using a *broadly-defined* interpretation, Table 2.9 replicates the models from Table 2.8 but replaces the specific disadvantage measures with more general disadvantage indices for each race/ethnic group. Outside of the structural disadvantage effects, the effects of the structural predictors (e.g., population size, percent foreign born, racial/ethnic heterogeneity) in Table 2.9 generally mirror those found in Table 2.8 and described above. Therefore, the following discussion focuses on the effects of the disadvantage indices on Violent Index rates.

Table 2.9 shows that the structural disadvantage indices are significantly and positively related to Violent Index rates for all three race/ethnic groups. Thus, structural disadvantage appears to be an underlying source of Violent Index rates for blacks, whites, and Hispanics. However, in contrast to the homicide models, the *Z*-tests indicate that the magnitudes of the disadvantage index effects on Violent Index rates are not significantly different across race/ethnicity. The effect of the structural disadvantage index is the largest for whites ($b = 2.894, p < .001$) and is similar for both Hispanics ($b = 1.889, p < .01$) and blacks ($b = 1.882, p < .01$). However, the *Z*-test statistics comparing these effects are not significant, indicating that the effects of disadvantage indices on Violent Index rates do not significantly vary for blacks, whites, and Hispanics. These findings support broadly-defined racial invariance arguments and indicate that structural disadvantage contributes to violence for all race/ethnic groups and that the violence-generating effects of disadvantage are similar for whites, blacks, and Hispanics.

In sum, the Violent Index results (Table 2.8 and 2.9) are generally similar to the homicide results (Tables 2.6 and 2.7) and provide similar conclusions for the racial invariance hypothesis.

As shown in the homicide models, the Violent Index results provide little support for *narrowly-defined* interpretations of racial invariance. There are several racial/ethnic differences in the effects and effect sizes of particular structural predictors on Violent Index rates. Additionally, both the homicide and Violent Index models support the broadest interpretations of racial invariance and show that general structural disadvantage measures contribute to violence for whites, blacks, and Hispanics. However, the Violent Index results provide greater support for *broadly-defined* interpretations of racial invariance than the homicide models because they show that the magnitudes of disadvantage index effects on violence are similar across race/ethnicity.

DISCUSSION AND CONCLUSION

The primary goal of this chapter has been to test the racial invariance hypothesis by comparing the structural predictors of violence across three race/ethnic groups: whites, blacks, and Hispanics. Focusing particularly on the effects of structural disadvantage, this analysis provides several important findings regarding the racial invariance hypothesis.

First, the results provide mixed support for the racial invariance hypothesis, depending on how it is defined. The results illustrate that racial invariance arguments may be interpreted several ways and that support for invariance arguments depends on one's definition or interpretation of "racial invariance." Specifically, there is greater support for racial invariance arguments as one uses broader and more general interpretations of "invariance."

Using a *broadly-defined* interpretation of invariance – which focuses on the underlying influence of structural disadvantage on violence – there appears to be some support for the racial invariance hypothesis. Taken as a whole, structural disadvantage measures generally contributed to homicide and Violent Index rates as expected for whites, blacks, and Hispanics. Poverty and unemployment contributed to violence, while higher education levels helped reduce violence

among the groups examined (Tables 2.6 and 2.8). Composite disadvantage measures increased homicide and Violent Index rates for all race/ethnic groups (Tables 2.7 and 2.9). Additionally, the disadvantage indices had similar magnitudes of effects on Violent Index rates (but not homicide rates) for all three race/ethnic groups (Table 2.9). Thus, the results provide some support for racial invariance, but only if one uses the broadest interpretation of “invariance” and focuses solely on whether structural disadvantage contributes to violence for blacks, whites, and Hispanics.

In contrast, there is little or no support for the racial invariance hypothesis if one examines the results using a *narrowly-defined* interpretation of racial invariance. The findings indicate that the particular structural predictors of violence vary across race/ethnic groups. For example, poverty contributes to black and Hispanic homicide and Violent Index rates but has no significant effect on white violence. A greater presence of female-headed families contributes to black violence but not to white or Hispanic violence. Unemployment rates appear to increase white violent crime but have no effect on black or Hispanic violence. Also, residential mobility appears to decrease Hispanic homicide rates but increases white Violent Index rates.

Furthermore, the results reveal significant differences in the magnitude of structural effects on violence across race/ethnic groups. For example, poverty appears to have stronger effects on black violence than on white or Hispanic violence. Additionally, even though they had positive effects on violent crime for all race/ethnic groups, the general disadvantage indices had much stronger effects on homicide for blacks than for other race/ethnic groups. Thus, when one uses a narrowly-defined interpretation of racial invariance and focuses on the effects of particular predictors on violence as well as the magnitude of these effects, the results provide little support for the racial invariance hypothesis.

Second, comparison of the structural predictors of violence for blacks and Hispanics provides mixed support for social capital and ethnic economies arguments claiming that the sources of Hispanic violence are unique and that Hispanic populations may be protected or “buffered” from the violence-generating effects of disadvantage. Some scholars suggest that structural disadvantage may not have the same severe, crime-producing effects on Hispanic violence that it has on black violence. In particular, researchers have argued that strong social capital/support networks, kinship bonds, and active ethnic economies may provide a buffer that protects Hispanic communities from violence and the effects of disadvantage (Martinez and Nielsen 2006; Nielsen et al. 2005; Velez 2006).

The results support these social capital and ethnic economies arguments in as much as the structural disadvantage measures contribute more strongly to black homicide than to Hispanic homicide rates. Education had a significantly stronger impact on black homicide than on Hispanic homicide (Table 2.6). Female-headed families contributed to black homicide and Violent Index rates but not to Hispanic violence. Additionally, if relaxed significance levels are used ($p < .10$), the disadvantage index had a stronger effect on black homicide than on Hispanic homicide (Table 2.7). Based on these findings, there is some indication that structural disadvantage has a weaker impact on Hispanic violence than on black violence. However, aside from the effects of family structure, the Violent Index models show almost no differences in the effects of disadvantage on black and Hispanic violence. Thus, it is difficult to determine from these results whether structural disadvantage plays a smaller roll in the violence-generating process for Hispanics than for blacks and whether Hispanic communities are more protected/insulated than black communities from the crime-producing effects of disadvantage. However, the fact that Hispanic violence rates are substantially lower than black rates, even

though both groups face high levels of disadvantage, suggests that Hispanic populations are protected or buffered from violence more than blacks.

In sum, this chapter illustrates that support for the racial invariance hypothesis greatly depends on the way we define “invariance” and partly on the measure of “violence.” While there is almost no support for narrowly-defined interpretations of racial invariance, broader interpretations of the racial invariance hypothesis receive some support. In other words, the structural predictors of violence and the magnitudes of structural effects on violence vary substantially across race/ethnic groups, but structural disadvantage appears to be a key component of the violence-generating process for whites, blacks, and Hispanics.

Additionally, this study highlights several areas for future research. Research on race/ethnicity and violence must continue to expand its focus beyond comparisons of white and black violence. As shown here, racial invariance literature and research on race/ethnicity and violence may greatly benefit by incorporating Hispanics and other race/ethnic groups. There is also a need for future research that examines whether the violence-generating process is invariant across “Hispanic” subgroups (e.g., Mexican, Cuban, Puerto Rican). Racial invariance literature may also benefit from examining non-violent forms of crime. Almost no research has examined whether the processes generating property and/or drug offending are invariant across race/ethnic groups.

Future racial invariance research should also make greater efforts to incorporate cultural explanations. Racial invariance literature to date has focused almost exclusively on the *structural* sources of violence and has overlooked whether cultural influences on violence vary across race/ethnic groups. Thus, to better understand whether the violence-generating process is invariant across race/ethnicity, research should examine whether both cultural *and* structural

influences on violence are similar/different across racial/ethnic groups (see Ulmer and Steffensmeier 2005). Last, research has often examined whether structural factors have similar/different *effects* on violence across race/ethnicity, but these racial invariance studies do not actually predict racial/ethnic *gaps* in violence (for exceptions see, Velez et al. 2003; Phillips 2002). Future research should examine the racial/ethnic gaps in violence and attempt to identify the structural sources of racial and ethnic violence disparities. As shown here, Hispanic communities face similar levels of disadvantage as black populations but typically have lower rates of violence. Thus, key questions remain concerning the substantial gaps in violence between black and Hispanic populations.

Table 2.1. Variable Descriptions

VARIABLES	MEASUREMENT
Independent	
Structural Disadvantage Index*	Factor Score that includes poverty, unemployment, and education
Poverty *	Percentage of the population with income below the poverty level
Unemployment *	Percentage of males age 16+ who are unemployed/not in labor force
Education*	Percentage of the total population age 25+ with at least a High School Degree (or Equivalent)
Family Structure*	Percentage of families with female heads and own children under 18
Population Size	Logged total population
Population Density	Persons per square mile of land
Young, Male Population*	Percentage of the population that is male, age 15-24
Immigration*	Percentage of the population that is foreign born
Residential Mobility*	Percentage of households in 2000 that are not occupied by the same residents as in 1995
Racial/Ethnic Heterogeneity	3-Group Entropy index (E)
Dependent	
Homicide*	Place-level Homicide Rate/100,000
Violent Index*	Place-level Violent Index Rate/100,000

* = Measures are race/ethnicity-specific

Table 2.2. Means and Standard Deviations for Variables by Race and Ethnicity

VARIABLES	WHITE		HISPANIC		BLACK	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Dependent - (arrest rates/100,000)						
Homicide	2.9	5.7	6.3	8.9	15.5	26.4
<i>Homicide (sq. root)</i>	1.0	1.2	1.8	1.8	2.6	2.9
Violent Index	321.6	222.9	502.7	334.8	1282.5	817.4
<i>Violent Index (sq. root)</i>	15.7	6.8	21.3	8.6	33.7	12.0
Independent						
Structural Disadvantage Index	0.0	1.0	0.0	1.0	0.0	1.0
% in Poverty	8.7	4.9	19.0	9.9	18.8	10.7
% Unemployed Males	25.0	6.7	21.7	6.9	29.2	11.2
% High School Graduates	86.7	6.6	57.5	14.1	80.7	12.6
% Female-Headed Families with Children	8.3	3.6	15.1	8.2	24.6	11.0
% Male 15-24	5.9	2.8	9.7	3.0	8.1	3.9
% Foreign-Born	7.3	5.5	36.5	14.5	7.1	7.1
Residential Mobility	44.1	9.4	56.4	8.7	56.9	12.8
Total Population Size	133286.7	351027.0	133286.7	351027.0	133286.7	351027.0
Density (people/sq. mile)	5281.7	5932.8	5281.7	5932.8	5281.7	5932.8
Racial/Ethnic Heterogeneity	0.8	0.2	0.8	0.2	0.8	0.2

Table 2.3. Correlations of Dependent and Independent Variables for the White Population

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Homicide rate	1.000												
2. Violent Index rate	0.568	1.000											
3. Structural Disadvantage Index	0.304	0.478	1.000										
4. % in Poverty	0.201	0.367	0.819	1.000									
5. % Unemployed males	0.251	0.413	0.829	0.470	1.000								
6. % High School Graduates	-0.322	-0.442	-0.910	-0.623	-0.682	1.000							
7. % Female-headed families with children	0.083	0.280	0.441	0.592	0.135	-0.386	1.000						
8. Total population	-0.015	-0.069	-0.112	-0.047	-0.056	0.174	-0.189	1.000					
9. Density	0.129	0.014	0.115	0.127	0.096	-0.074	-0.093	0.450	1.000				
10. % Males 15-24	0.115	0.069	0.153	0.469	-0.137	-0.050	0.284	-0.084	-0.087	1.000			
11. % Foreign-born	-0.005	-0.174	-0.002	-0.005	0.071	0.060	-0.365	0.352	0.500	-0.242	1.000		
12. Residential mobility	-0.027	0.204	-0.050	0.258	-0.235	0.153	0.407	-0.058	-0.142	0.388	-0.260	1.000	
13. Racial/Ethnic heterogeneity	0.226	0.373	0.213	0.142	0.170	-0.230	0.050	0.126	0.195	-0.095	0.059	-0.062	1.000

Table 2.4. Correlations of Dependent and Independent Variables for the Hispanic Population

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Homicide rate	1.000												
2. Violent Index rate	0.380	1.000											
3. Structural Disadvantage Index	0.268	0.129	1.000										
4. % in Poverty	0.240	0.131	0.862	1.000									
5. % Unemployed males	0.175	-0.035	0.746	0.475	1.000								
6. % High School Graduates	-0.207	-0.212	-0.718	-0.477	-0.262	1.000							
7. % Female-headed families with children	0.130	-0.115	0.537	0.634	0.441	-0.028	1.000						
8. Total population	0.178	0.150	0.108	0.115	0.027	-0.108	0.017	1.000					
9. Density	0.132	0.024	0.171	0.148	0.098	-0.153	0.130	0.450	1.000				
10. % Males 15-24	-0.085	-0.186	0.170	0.176	0.146	-0.061	0.157	-0.159	-0.085	1.000			
11. % Foreign-born	-0.004	0.064	0.022	-0.089	-0.309	-0.515	-0.405	0.184	0.284	0.062	1.000		
12. Residential mobility	-0.139	-0.073	0.254	0.434	0.071	-0.038	0.392	-0.149	-0.263	0.363	-0.136	1.000	
13. Racial/Ethnic heterogeneity	0.201	0.238	0.239	0.110	0.087	-0.395	-0.063	0.126	0.195	-0.030	0.297	-0.165	1.000

Table 2.5. Correlations of Dependent and Independent Variables for the Black Population

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Homicide rate	1.000												
2. Violent Index rate	0.383	1.000											
3. Structural Disadvantage Index	0.319	0.094	1.000										
4. % in Poverty	0.380	0.386	0.717	1.000									
5. % Unemployed males	0.214	0.044	0.854	0.401	1.000								
6. % High School Graduates	-0.208	0.148	-0.866	-0.428	-0.649	1.000							
7. % Female-headed families with children	0.317	0.362	0.370	0.650	0.185	-0.181	1.000						
8. Total population	0.261	0.313	-0.110	-0.007	-0.012	0.197	0.075	1.000					
9. Density	0.182	0.146	0.052	0.063	0.053	0.008	0.141	0.423	1.000				
10. % Males 15-24	-0.090	-0.189	0.027	0.129	-0.066	-0.020	-0.092	-0.162	-0.116	1.000			
11. % Foreign-born	0.027	-0.256	-0.119	-0.204	-0.175	-0.017	-0.112	0.195	0.292	-0.039	1.000		
12. Residential mobility	-0.039	0.031	-0.024	0.167	-0.157	0.039	0.144	-0.159	-0.295	0.321	-0.227	1.000	
13. Racial/Ethnic heterogeneity	0.188	0.145	0.067	0.026	0.215	0.074	0.193	0.507	0.225	-0.187	-0.050	-0.183	1.000

Table 2.6. Race/Ethnicity-Specific Seemingly Unrelated Regression Models for Homicide

	WHITE	HISPANIC	BLACK	Comparison of Racial/Ethnic Effects (Z-tests)		
				White vs. Black	White vs. Hispanic	Black vs. Hispanic
% in Poverty	-0.021 (0.029)	0.042 * (0.020)	0.085 *** (0.025)	2.78 **	1.80 †	1.34
% Unemployed Males	0.034 * (0.016)	-0.007 (0.019)	-0.032 (0.023)	2.38 *	1.65 †	0.86
% High School Graduates	-0.035 * (0.017)	-0.024 * (0.012)	-0.075 ** (0.023)	1.39	0.54	1.97 *
% Female-Headed Families with Children	-0.003 (0.030)	-0.013 (0.021)	0.012 (0.021)	0.42	0.26	0.84
In Total Population Size	0.230 ** (0.084)	0.395 *** (0.114)	0.805 *** (0.200)	2.65 **	1.17	1.78 †
Density (people/sq. mile)	8.40E-06 (1.46E-05)	-5.35E-06 (2.06E-05)	-6.89E-06 (3.36E-05)	0.42	0.54	0.04
% Male 15-24	0.064 † (0.039)	-0.018 (0.035)	-0.041 (0.048)	1.70 †	1.56	0.39
% Foreign-Born	-0.012 (0.017)	-0.021 † (0.011)	0.019 (0.026)	1.01	0.44	1.42
Residential Mobility	0.006 (0.009)	-0.043 ** (0.015)	0.001 (0.016)	0.25	2.79 **	2.01 *
Racial/Ethnic Heterogeneity	0.997 ** (0.377)	1.411 * (0.554)	1.917 * (0.920)	0.93	0.62	0.47
Constant	-0.297 (1.93)	0.619 (1.90)	-2.538 (3.12)			
R squared	0.179	0.245	0.282			

N = 234 † p<.10 * p<.05 ** p<.01 *** p<.001

Note: Standard errors are shown in parentheses

Table 2.7. Race/Ethnicity-Specific Seemingly Unrelated Regression Models for Homicide with the Disadvantage Index

	WHITE	HISPANIC	BLACK	Comparison of Racial/Ethnic Effects (Z-tests)		
				White vs. Black	White vs. Hispanic	Black vs. Hispanic
Structural Disadvantage Index	0.420 *** (0.099)	0.558 *** (0.137)	0.963 *** (0.200)	2.43 *	0.82	1.67 †
% Female-Headed Families with Children	-0.027 (0.027)	-0.006 (0.018)	0.047 ** (0.018)	2.27 *	0.65	2.06 *
In Total Population Size	0.217 ** (0.083)	0.403 *** (0.114)	0.794 *** (0.198)	2.69 **	1.32	1.71 †
Density (people/sq. mile)	7.32E-06 (1.46E-05)	-1.02E-05 (2.05E-05)	-9.38E-06 (3.43E-05)	0.45	0.70	0.02
% Male 15-24	0.023 (0.031)	-0.034 (0.035)	-0.022 (0.047)	0.81	1.24	0.21
% Foreign-Born	-0.021 (0.016)	-0.008 (0.009)	0.027 (0.026)	1.58	0.69	1.29
Residential Mobility	0.001 (0.009)	-0.034 * (0.014)	0.005 (0.016)	0.22	2.14 *	1.87 †
Racial/Ethnic Heterogeneity	0.983 ** (0.377)	1.487 ** (0.553)	1.222 (0.918)	0.24	0.75	0.25
Constant	-1.789 † (0.983)	-1.097 (1.560)	-8.547 *** (2.397)			
R squared	0.168	0.230	0.247			

N = 234 * p<.05 ** p<.01 *** p<.001
 Note: Standard errors are shown in parentheses

Table 2.8. Race/Ethnicity-Specific Seemingly Unrelated Regression Models for Violent Index

	WHITE	HISPANIC	BLACK	Comparison of Racial/Ethnic Effects (Z-tests)					
				White vs. Black	White vs. Hispanic	Black vs. Hispanic			
% in Poverty	-0.132 (0.099)	0.252 ** (0.089)	0.391 *** (0.078)	4.15 ***	2.88 **	1.18			
% Unemployed Males	0.157 ** (0.053)	-0.174 † (0.089)	-0.017 (0.070)	1.98 *	3.19 ***	1.39			
% High School Graduates	-0.334 *** (0.060)	-0.093 † (0.055)	0.062 (0.071)	4.26 ***	2.97 **	1.72 †			
% Female-Headed Families with Children	0.061 (0.101)	-0.284 ** (0.094)	0.143 * (0.064)	0.69	2.50 *	3.76 **			
In Total Population Size	0.496 (0.334)	1.536 ** (0.564)	3.375 *** (0.692)	3.75 ***	1.59	2.06 *			
Density (people/sq. mile)	2.81E-05 (5.7E-05)	-2.21E-05 (1.01E-04)	-2.46E-05 (1.17E-04)	0.40	0.43	0.02			
% Male 15-24	0.038 (0.132)	-0.149 (0.162)	-0.415 ** (0.147)	2.29 **	0.89	1.22			
% Foreign-Born	-0.199 *** (0.057)	-0.179 *** (0.051)	-0.194 * (0.080)	0.04	0.26	0.17			
Residential Mobility	0.136 *** (0.032)	-0.070 (0.067)	0.009 (0.049)	2.18 *	2.78 **	0.95			
Racial/Ethnic Heterogeneity	9.854 *** (1.51)	9.799 *** (2.72)	-1.057 (3.22)	3.07 ***	0.02	2.58 **			
Constant	24.899 *** (6.75)	16.745 † (9.00)	-13.393 (10.20)						
R squared	0.434	0.225	0.352						

N = 234 † p<.10 * p<.05 ** p<.01 *** p<.001

Note: Standard errors are shown in parentheses

Table 2.9. Race/Ethnicity-Specific Seemingly Unrelated Regression Models for Violent Index with Disadvantage Index

	WHITE	HISPANIC	BLACK	Comparison of Racial/Ethnic Effects (Z-tests)		
				White vs. Black	White vs. Hispanic	Black vs. Hispanic
Structural Disadvantage Factor	2.894 *** (0.341)	1.889 ** (0.637)	1.822 ** (0.638)	1.48	1.39	0.07
% Female-Headed Families with Children	-0.071 (0.091)	-0.187 * (0.081)	0.301 *** (0.055)	3.50 ***	0.95	4.99 ***
In Total Population Size	0.308 (0.335)	1.631 ** (0.588)	3.694 *** (0.738)	4.18 ***	1.95 †	2.19 **
Density (people/sq. mile)	1.68E-05 (5.74E-05)	-6.94E-05 (1.04E-04)	-4.63E-05 (1.26E-04)	0.46	0.73	0.14
% Male 15-24	-0.216 * (0.107)	-0.246 (0.160)	-0.283 † (0.148)	0.36	0.15	0.17
% Foreign-Born	-0.244 *** (0.054)	-0.088 * (0.039)	-0.180 * (0.079)	0.67	2.34 *	1.04
Residential Mobility	0.087 ** (0.031)	-0.022 (0.063)	0.012 (0.050)	1.26	1.54	0.42
Racial/Ethnic Heterogeneity	10.080 *** (1.52)	9.949 *** (2.81)	-2.373 (3.40)	3.34 ***	0.04	2.79 ***
Constant	5.636 (3.90)	4.821 (7.74)	-9.179 (8.75)			
R Squared	0.424	0.153	0.251			

N = 234 † p<.10 * p<.05 ** p<.01 *** p<.001

Note: Standard errors are shown in parentheses

CHAPTER 3:

RACIAL/ETHNIC RESIDENTIAL SEGREGATION

The previous chapter sought to extend research on race/ethnicity, social structure, and crime toward a better understanding of Hispanic violence by testing the racial invariance hypothesis – i.e., comparing the structural sources of violence for whites, blacks, and Hispanics. So far we have seen that structural disadvantage contributes to violence for whites, blacks, and Hispanics, which supports broadly-defined interpretations of the racial invariance hypothesis. However, using a narrowly-defined approach, we have also seen that there are several differences in the specific/particular structural predictors of violence and in the magnitudes of these structural effects on violence across race/ethnicity.

As in the previous chapter, the primary goal of this chapter is to extend theory and research on the social ecology of crime, particularly that dealing with black-white differences in violence, toward an understanding of Hispanic violence. Additionally, this chapter seeks to expand ecological research on black-white differences in violence and in the structural sources of violence (for example, by using black and white crime figures that are not confounded with Hispanic violence). The particular focus of this chapter is to examine and compare the effects of racial/ethnic residential segregation (from whites and from all other race/ethnic groups) on black and Hispanic violence.

This chapter begins with a short background discussion of the segregation-violence relationship. I then provide a more detailed discussion of prior research on segregation and violence, noting several limitations of prior research (e.g., failure to move beyond black-white comparisons). Because the data and methods were described in greater detail in Chapter 2, I provide only a brief discussion of data and methods in this chapter. I then discuss the findings of

the analysis and conclude by highlighting the contributions of this chapter, caveats, and directions for future segregation-violence research.

BACKGROUND

Despite legislation aimed at reducing housing discrimination and residential segregation, minority groups and especially African Americans in the United States remain highly segregated from whites. Scholars argue that discrimination and racist housing practices (e.g., blockbusting, residential steering) have served to isolate blacks in disadvantaged inner-city areas (Charles 2000; Ellen 2000; Gotham 2002; Lee 1985; Massey 2001; Massey and Denton 1993; Massey and Fong 1990; Yinger 1995). In fact, black residential isolation has become so severe that some scholars argue that blacks are “hypersegregated” and that residential patterns in the U.S. reflect an American Apartheid (Massey 2001; Massey and Denton 1989; 1993: 83; see also Peterson and Krivo 1999).

Research has shown that these patterns of segregation have several harmful consequences for minority groups and especially for African Americans. Racial/ethnic segregation has socially isolated minority groups in communities with few resources, jobs, or opportunities. Additionally, segregation has concentrated poverty, unemployment, and disadvantage in inner-city black communities, leading scholars to conclude that racial/ethnic residential segregation has become a “cornerstone of urban inequality” (Krivo et al. 1998; Massey 1996; 2001; Massey and Denton 1993; Peterson and Krivo 1999: 466; Yinger 1995).

Research also suggests that racial/ethnic residential segregation may contribute to high rates of violence among blacks, and possibly Hispanics. However, surprisingly few studies have addressed the segregation-violence relationship. The sparse literature on segregation and crime indicates that racial segregation contributes to overall crime rates (Akins 2003; Eitle and Eitle

2003; Logan and Messner 1987) and to black rates of violence (Lee and Ousey 2005; Messner and South 1986; Peterson and Krivo 1993; Smith 1992), largely by concentrating disadvantage in black communities (Peterson and Krivo 1999; Shihadeh and Flynn 1996; Shihadeh and Maume 1997). However, while these studies provide important insight about the segregation-violence relationship, they also face several key limitations.

First, research has been limited almost exclusively to black-white comparisons and has provided almost no information about the segregation-violence relationship among other race/ethnic groups. The inattention to Hispanics in segregation-violence research is particularly troubling because Hispanics are now the largest and fastest growing minority group in the U.S., and like blacks, are often highly segregated from white populations. Yet very little is known about whether segregation from whites influences Hispanic violence. Second, with the exception of several studies by Shihadeh and colleagues (Shihadeh and Flynn 1996; Shihadeh and Maume 1997) and Peterson and Krivo (1999), most prior research has focused exclusively on examining direct effects of segregation on violence and has overlooked mediating effects in the segregation-violence relationship.

Third, research has rarely compared the effects of segregation on crime across race/ethnic groups. Drawing from the *racial invariance assumption*, some researchers argue that the violence-generating process and the structural sources of violence are similar or invariant across race/ethnicity (Krivo and Peterson 2000; Peterson and Krivo 2005; Sampson and Bean 2006; Sampson and Wilson 1995; Velez 2006). Based on this argument, one might expect racial/ethnic residential segregation to contribute to violence in similar ways for all race/ethnic groups and especially for Hispanics and blacks, who are both highly segregated from whites and are often isolated in communities with high levels of structural disadvantage. However, in contrast to

racial invariance arguments, prior empirical research indicates that segregation may have different effects on violence across race/ethnic groups (Messner and South 1986; Peterson and Krivo 1999). Thus, it is unclear whether the segregation-violence relationship is “invariant” (similar) for Hispanics and blacks.

The current project extends in particular the segregation-violence research of Shihadeh and colleagues (Shihadeh and Flynn 1996; Shihadeh and Maume 1997) and Peterson and Krivo (1993; 1999) by examining how racial/ethnic residential segregation influences black and Hispanic rates of violence (i.e., homicide and Violent Index rates). The current study is limited to blacks and Hispanics and examines (1) whether racial/ethnic isolation (from whites and from other race/ethnic groups) contributes to violent offending rates for blacks and Hispanics, (2) whether residential segregation contributes to black and Hispanic violence indirectly by concentrating disadvantage in the black and Hispanic populations, and (3) drawing from the racial invariance hypothesis, whether the effects of racial/ethnic residential segregation on violence are similar/different for Hispanics and blacks.

CONCEPTUAL FRAMEWORK AND PRIOR RESEARCH

RACIAL/ETHNIC RESIDENTIAL SEGREGATION

Racial/ethnic minority groups, but especially African Americans, have experienced a history of severe residential isolation and segregation in the U.S. Like many European immigrant groups, African Americans seeking employment opportunities often migrated to central city areas in the early and middle portions of the 20th century. However, while European immigrant groups slowly moved out of these central city areas, African Americans have been left behind (Lobo et al. 2002; Shaw and McKay 1942). As a result, large portions of the black population in the U.S. remain concentrated in poor, disadvantaged inner-city communities.

Additionally, these patterns of residential isolation have become so severe that some scholars argue that blacks have become subject to a system of American Apartheid (Massey 2001; Massey and Denton 1989; 1993; see Peterson and Krivo 1999).

Researchers have explored a variety of explanations for these patterns of racial/ethnic segregation. Currently, some of the most well-supported explanations argue that African Americans have been isolated in poor, inner-city areas due to multiple forms of discrimination and institutional racism. Researchers explain that institutional racism and housing discrimination have become less overt following passage of the Fair Housing Act of 1968 (Gotham 2002; Massey and Denton 1993). However, these forms of discrimination have not vanished and remain prevalent in several covert forms.

For example, financial institutions have been shown to discriminate against African Americans by rejecting loan applications from high-risk black neighborhoods (Ellen 2000; Gotham 2002; Massey and Denton 1993). As a result, few African Americans are able to obtain housing loans and thus, are unable to move out of segregated minority areas and into white or mixed-race communities. In addition, realtors discriminate against African Americans by showing them fewer housing units, quoting higher housing prices, offering less information about available units, and racially steering black renters and buyers into predominantly minority neighborhoods (Ellen 2000; Gotham 2002; Yinger 1995). In fact, housing discrimination is so common that African Americans are almost guaranteed to face some form of discrimination in repeated interactions with realtors (Yinger 1995).

Race/ethnic differences in tolerance of racial integration also contribute to black-white segregation. Research suggests that African Americans prefer mixed black-white neighborhoods, ranging anywhere from 15-70 percent black residents. In contrast, whites have a

much lower tolerance for integration and often become uneasy when a neighborhood becomes as much as 8 percent black (Massey and Denton 1993). As a result, whites may often avoid mixed-race communities and are likely to leave a neighborhood when it becomes even slightly racially integrated (Charles 2000; Ellen 2000; Lee 1985; Rosenbaum and Friedman 2001).

Racial/ethnic residential segregation has been shown to have several harmful consequences for minorities and particularly for black populations. Research shows that the isolation of African Americans in inner-city communities has helped concentrate multiple forms of disadvantage in black neighborhoods – such as poverty, unemployment, and single-parent families (Krivo et al. 1998; Massey 1996; 2001; Massey and Denton 1993; Peterson and Krivo 1999). The economic restructuring of central city economies in recent decades has further contributed to the concentration of disadvantage in black communities. Because the black population has been concentrated in inner-city areas, African American communities were hit especially hard as industries and businesses pulled out of central city locations and relocated overseas and in other areas of the country (Sampson and Wilson 1995; Wilson 1987). This economic shift pulled essential resources from many black communities and left large portions of the black population isolated with few jobs or legitimate success opportunities. William Julius Wilson (1987) also notes that black communities have become socially isolated and even more disadvantaged due to the exodus of the black middle-class from the ghetto. A sizable number of middle-class black families have begun to leave these disadvantaged communities. As a result, inner-city black neighborhoods have experienced an increase in concentrated disadvantage and have lost important resources and role-models provided by the black middle class.

EFFECTS OF SEGREGATION ON VIOLENCE

Racial/ethnic residential segregation also appears to contribute to crime and violence. Several studies show that racial/ethnic segregation contributes to total crime rates (Akins 2003; Logan and Messner 1987; Sampson 1985). However, researchers have given surprisingly little attention to the impact of segregation on crime among minority groups. A handful of studies indicate that black-white segregation contributes to black violence rates (Lee and Ousey 2005; Peterson and Krivo 1993; 1999; Shihadeh and Flynn 1996; Shihadeh and Maume 1997; Smith 1992) and especially to intra-racial violence (Messner and South 1986; Parker and McCall 1999; South and Felson 1990). Furthermore, this research shows that black-white residential segregation often contributes to black violence indirectly by socially isolating blacks (Krivo and Peterson 1993; Shihadeh and Flynn 1996) and by concentrating disadvantage in black communities (Lee and Ousey 2005; Krivo and Peterson 1999; Shihadeh and Flynn 1996; Shihadeh and Maume 1997; Shihadeh and Ousey 1996; Massey 2001).

Although there is some evidence that residential segregation contributes to black violence, it is unclear whether segregation has the same effects on other race/ethnic groups. In particular, little is known about the impact of racial/ethnic residential segregation on Hispanic violence. This lack of comparative research is unfortunate because (1) Hispanics are now the largest minority group in the U.S. (United States Census Bureau 2005) and (2) like blacks, large portions of the Hispanic population are isolated in disadvantaged communities (Healey 2006).

There are several reasons to expect segregation from whites to have similar effects on black and Hispanic violence. Black and Hispanic communities often face similar structural conditions and residential circumstances. Like blacks, Hispanic groups in the U.S. are often segregated from whites (Charles 2000; Fischer et al. 2004). Both groups experience multiple

forms of housing discrimination and racism (Charles 2000; Yinger 1995) that keep them isolated in predominantly minority neighborhoods with few resources and high levels of disadvantage (Healey 2006; Martinez 2002; 2003; Martinez et al. 2004; Massey and Fong 1990; Portes and Rumbaut 2006). Thus, as seen in black communities, one might expect segregation to create greater concentrated disadvantage and ultimately lead to greater violence for Hispanics.

The *racial invariance assumption* also suggests that racial/ethnic residential segregation should have similar effects on black and Hispanic violence. According to the racial invariance assumption, the violence-generating process and the structural sources of violence are similar or “invariant” across all race/ethnic groups (Krivo and Peterson 2000; Peterson and Krivo 2005; Sampson and Bean 2006; Sampson and Wilson 1995; Velez 2006). Racial invariance arguments have primarily focused on the effects of disadvantage and on black-white comparisons. However, if racial invariance arguments are extended to other race/ethnic groups and other structural predictors, then all structural factors including *racial/ethnic segregation from whites* should contribute to violence in the same way for Hispanics, blacks, and other race/ethnic groups.

In contrast, there are also several reasons why one might expect segregation from whites to have different effects on Hispanic and black violence. First, while racial invariance arguments have received substantial attention, empirical evidence testing the racial invariance assumption has been fairly mixed. Several studies show that structural factors often have different effects on violence across race/ethnicity (Harer and Steffensmeier 1992; Lafree et al. 1992; Messner and Golden 1992; Messner and South 1986; Ousey 1999; Parker and McCall 1999; Parker et al. 2005; Phillips 2002; Shihadeh and Ousey 1996). Additionally, there is some evidence that segregation does not have the same effect on violence for all race/ethnic groups. While black-

white segregation contributes to black disadvantage and violence, it does not appear to contribute to white violence and may even reduce violence and disadvantage among white populations (Messner and South 1986; Peterson and Krivo 1999). This contradicts racial invariance arguments and indicates that the structural sources of violence vary across race/ethnic groups. Thus, structural factors like segregation may not contribute to violence for Hispanics in exactly the same way they contribute to black violence.

Second, though both Hispanic and black communities are often disadvantaged and residentially isolated, because these groups also differ in several important ways, the effects of segregation on violence might be greater for one group relative to the other. Hispanic populations tend to have higher employment rates (Martinez 2002; Velez 2006), face less housing discrimination (Charles 2000; Yinger 1995), and are less segregated from whites than African Americans (Charles 2000; Fischer et al. 2004; Healey 2006; Massey and Fong 1990; Velez 2006). Additionally, poverty and disadvantage in black communities is more concentrated than in Hispanic communities (Healey 2006; Sampson et al. 2005; Velez 2006). Thus, Hispanics may be less susceptible to the effects of segregation and may be better able to leave segregated, disadvantaged central-city areas compared to blacks.

Third, Hispanic-white segregation may be qualitatively different from black-white segregation. While discrimination and racism are key sources of both black-white and Hispanic-white segregation, Hispanic isolation occurs in part by choice due to the formation of ethnic/immigrant enclaves (Healey 2006; Light and Gold 2000; Massey and Fong 1990). Like segregated black communities, Hispanic enclaves are often disadvantaged and are typically isolated from white communities. However, Hispanic enclaves also commonly provide residents with social capital, resources, and protective benefits that may help to offset the potentially

harmful effects of segregation, disadvantage, and violence (Light and Gold 2000; Lobo et al. 2002; Martinez 2002; Martinez et al. 2004; Martinez and Nielsen 2006; Velez 2006). As a result, Hispanics and especially new immigrants may choose to live in these isolated Hispanic enclaves.

The shared culture, language, traditions, and heritage of enclave residents helps create a strong sense of unity and social cohesion in many Hispanic communities. Drawing from the social capital perspective and the ethnic economies literature (Coleman 1988; Light and Gold 2000; Portes 1998; Portes and Sensenbrenner 1993; Steffensmeier and Ulmer 2005; 2006), this shared heritage and sense of cohesion help to create exceptionally strong social capital networks and kinship/familial bonds in Hispanic communities (Healey 2006; Martinez and Lee 1998; Martinez 2002). These networks and ties serve as important sources of aid and support for community members and provide residents with a variety of resources and opportunities, such as employment, financial aid, child care, and social support. Additionally, social support/capital networks may help reduce crime by creating greater collective efficacy and informal social control in Hispanic communities (Morenoff et al. 2001).

Hispanic communities and enclaves may also benefit from active ethnic economies which contribute resources, employment opportunities, and often an active sense of community to Hispanic neighborhoods (Healey 2006; Klinenberg 2002; Light and Gold 2000; Martinez and Lee 1998; Martinez 2002). Additionally, research suggests that a steady flow of new immigrants helps strengthen these community bonds and social capital networks by reestablishing shared traditions and providing a fresh infusion of Hispanic heritage and culture into the community (Healey 2006; Martinez and Lee 1998; Martinez et al. 2004; Riedel 2003; Velez 2006; also see Sampson et al. 2005; Sampson and Bean 2006). Patterns of “chain migration” also help widen

familial and social capital networks because new immigrants commonly settle in areas where they have established family, friendship, or ethnic ties with other residents (Healey 2006; Martinez 2002; Martinez et al. 2004; Portes and Rumbaut 2006). Furthermore, immigration may help strengthen community institutions (e.g., schools, churches, social services) and draw new resources and opportunities into Hispanic communities (Martinez and Lee 1998; Riedel 2003; Velez 2006).

Based on these observations, segregated Hispanic communities may differ in several ways from segregated black communities. In particular, Hispanic ethnic enclaves offer a variety of supportive resources and protective benefits for Hispanic residents. Therefore, even though enclaves are often segregated from whites, this form of racial/ethnic segregation may be less harmful and less likely to foster violence than the extreme isolation and “hypersegregation” found in black communities. Thus, segregation from whites may have different effects on Hispanic and black violence, and if anything, segregation may contribute less strongly to Hispanic violence.

THE PRESENT STUDY: DATA AND METHODS

In light of these observations and drawing on prior segregation-violence research, my objectives in this chapter are to examine – first, the impact of racial/ethnic segregation (i.e., isolation from whites and from other race/ethnic groups) on violence for both blacks and Hispanics; second, whether segregation influences violence indirectly by working through concentrated disadvantage for both blacks and Hispanics; and third, whether the effects of segregation on violence are similar, or “racially invariant,” for blacks and Hispanics.

DATA AND METHODS

To address these issues, I use information on black and Hispanic violence drawn from California Arrest Data (CAL) and New York State Arrest Data (NYSAD) for the 1999-2001 period. Information on racial/ethnic isolation and the structural characteristics of black and Hispanic populations is drawn from 2000 U.S. Census data – Summary Tape Files 1, 3, and 4. The unit of analysis is the *census place* (see Chapters 1 and 2 for more detailed discussions of census places).

As discussed earlier, census place-level data are well suited for this analysis because – (1) they are large enough to provide reliable measures of violence and structural characteristics for each racial/ethnic group but small enough to preserve a large sample size, (2) unlike city-level data, they provide greater variation in independent and dependent measures, and (3) they provide greater opportunities for comparing similarly-situated race/ethnic populations, especially for comparisons of blacks and Hispanics (see Chapter 2 for further discussion of the advantages of census place-level data). To ensure that race- and ethnicity-specific measures of violence and social structure were reliably measured, census places were included only if they had a total population of at least 10,000 and at least 1,000 black and Hispanic residents in the year 2000. Thus, the final sample includes 232 census places that met the selection criteria.

Dependent Variables

Data on black and Hispanic violent crime were drawn from the California Arrest Data (CAL) and the New York State Arrest Data (NYSAD), which are described in greater detail in Chapter 2. Hispanic and black arrest counts from CAL and NYSD were combined with year 2000 Hispanic and black population figures for each census place (U.S. Census Bureau – STF 4)

to create the dependent measures for the analysis: Hispanic and black arrest rates/100,000 for the crimes of homicide and the Violent Index.

Research has often noted potential problems with using arrest data to measure race- and ethnicity-specific violence. To address these problems and criticisms, I focus on index-violent arrests (homicide and Violent Index) – which are consistently defined as “serious” offenses and are more reliably reported across demographic groups (Hindelang 1978; 1981; LaFree et al. 1992; Sampson 1987; Steffensmeier et al. 2005; Steffensmeier and Feldmeyer 2006). To add stability to the measures of violent offending and to ensure that the data include adequate arrest counts for statistically rare offenses (e.g. homicide), all of the year 2000 arrest rates were calculated using 3-year averaged arrest figures for the 1999-2001 period. Additionally, all violence measures were square root-transformed to reduce positive skewness and impose normal distributions among the dependent variables.

Independent Variables

Black and Hispanic measures of structural characteristics for each census place serve as the independent variables. The information used to create these measures was drawn from 2000 U.S. Census data – Summary Tape Files 1, 3, and 4. Excluding population size and density, all of the independent variables are disaggregated by race/ethnicity.

The key explanatory variable, *racial/ethnic residential segregation*, is measured using racial/ethnic isolation indices (P^*) for blacks and Hispanics. While prior literature has typically used the index of dissimilarity (D) to measure racial/ethnic residential segregation, some suggest that the isolation index (P^*) may be more theoretically appropriate for examining the impact of segregation on violence because it taps into the social isolation and polarization of minority

communities (Shihadeh and Flynn 1996). Thus, this analysis uses racial/ethnic isolation measures to examine the segregation-violence relationship.¹²

Black and Hispanic *residential isolation* from whites is measured as the converse of the black-white and Hispanic-white interaction indices (${}_bP^*_w$ and ${}_hP^*_w$). The interaction indices range from 0 to 1 and reflect the probability that a randomly chosen black or Hispanic resident shares the same block group as a white individual (Massey and Denton 1988; Shihadeh and Flynn 1996). The black interaction index, ${}_bP^*_w$, is measured as:¹³

$${}_bP^*_w = \sum_{i=1}^n \beta_i (w_i/t_i)$$

where, β_i is the proportion of blacks in the census place that are in block group i , w_i is the total number of whites in block group i , and t_i is the total population of block group i . The Hispanic interaction index was calculated using the same procedure but with Hispanic population figures. After calculating the black-white and Hispanic-white interaction measures, black and Hispanic isolation measures were created by taking the converse of the interaction scores ($1 - P^*$) (see Shihadeh and Flynn 1996).

In addition to segregation measures, several other key structural predictors are included in the analysis. Following procedures outlined by Krivo and Peterson (2000), a two-step process was used to create composite indicators of *concentrated disadvantage*, which reflect the combined concentrations of poverty, education, female-headed families with children, and male

¹² To more fully exhaust the data and to assess the robustness of the findings, the analysis was replicated using Index of Dissimilarity (D) measures (results not shown). Results did not vary across segregation measures in the Violent Index models. However, racial/ethnic isolation had stronger effects than unevenness measures on homicide.

¹³ Researchers conducting city-level analyses have typically used census tract-level population figures to create segregation measures. However, block groups were better suited for this analyses because the smallest census places (approximately 10,000 people) did not contain enough census tracts to calculate P^* measures. Because block groups are sometimes only partially contained in census places, race/ethnicity-specific measures at the block group-level were weighted based on the proportion of the block group that was situated within each census place (Missouri Census Data Center 2007)

unemployment. First, the calculation of these indices involved creating separate black and Hispanic isolation measures for poverty, education, female-headed families, and male unemployment. These measures reflect the probability (P^*) that a randomly-selected (1) person in poverty shares the same block group as another poor person, (2) person with less than a high school education shares the same block group with another person with less than a high school education, (3) female-headed family with children under 18 shares the same block group as another female-headed family with children, and (4) noninstitutionalized male who is at least 16 years old and is either unemployed or not in the labor force shares a block group with another unemployed male.

The P^* measure for poverty, for example, is calculated as:

$${}_xP^*_x = \sum_{i=1}^n [x_i/X][xt_i/t_i]$$

where, x_i is the number of black (or Hispanic) people in poverty in block group i , xt_i is the total number of poor people in block group i , X is the total number of black (or Hispanic) people in poverty in the census place, and t_i is the total population of block group i . Similar procedures were used to calculate the other disadvantage measures, replacing both the total and race/ethnicity-specific poverty counts in the formula with counts of residents with less than a high school degree, female-headed families with children, or unemployed males.

Second, principal components analysis was used to combine these four disadvantage measures into composite indicators of black or Hispanic concentrated disadvantage. For both blacks and Hispanics, the four isolation indices loaded strongly (>.50) onto one dimension that is referred to here as the *concentrated disadvantage index*. Thus, the concentrated disadvantage indices reflect the combined isolation of poverty, education, female-headed families with children, and male unemployment for blacks and Hispanics.

This analysis also includes the following control variables described earlier in Chapter 2: *young-male population, residential mobility, immigration, population size, and population density* (see Table 2.1). Additionally, a dummy variable is also included to control for the *state* in which a census place is located, where 1 refers to New York and 0 refers to California.

The independent variables described above were selected on theoretical grounds and from previous empirical research and were scrutinized for potential multicollinearity problems. These variables are correlated below $r = .55$ (see Tables 3.2 and 3.3); and regression diagnostics revealed that variance inflation factor (VIF) scores were at acceptable limits (below 3.0) for all of the variables included in the final models. Based on these observations, multicollinearity does not appear to be a serious concern in the analysis.

Analytic Procedures

This analysis uses seemingly-unrelated regression (SUR) procedures to examine and compare the impact of segregation on violence for blacks and Hispanics for the 1999-2001 period (see Chapter 2 for a more detailed description of SUR procedures). *Z*-tests described by Clogg et al. (1995) and Paternoster et al. (1998) are again used to compare the predictors of violence across race/ethnicity and test for equality of coefficients in the predictors of black and Hispanic violence (see Chapter 2 for further detail).¹⁴ Results from these tests are used to identify similarities and differences in the effects of segregation and structural predictors on black and Hispanic violence and to draw conclusions about whether there is racial invariance in the structural sources of violence.

¹⁴ In preliminary analyses, both *F*-tests and *Z*-tests were used to compare coefficients across groups, which revealed that *F*-test results were similar to those obtained using *Z*-tests and did not change the substantive meaning of the results.

RESULTS

DESCRIPTIVE STATISTICS

Table 3.1 displays descriptive statistics for the independent and dependent measures and reveals several noteworthy patterns in black and Hispanic violence. The results show that black arrest rates are substantially larger than Hispanic arrest rates for both violent offenses examined. Homicide rates/100,000 are 6.3 for Hispanics as compared to 15.7 for blacks, and Violent Index rates/100,000 are 502.1 for Hispanics versus 1305.8 for blacks. Thus, on average across census places, Hispanic arrest rates for violent offenses are less than half as large as black rates.

Additionally, the standard deviations in Table 3.1 indicate that there is substantial variation in both Hispanic and black rates of violence across census places. For example, the standard deviation for Hispanic homicide (std. dev. = 8.95) indicates that Hispanic homicide rates range from approximately zero to 15/100,000 across two-thirds of census places in the sample. Black violence rates vary more than Hispanic rates (std. dev. = 26.69), with two-thirds of census places having homicide rates between zero and 40/100,000.

Table 3.1 also reveals several noteworthy findings about black and Hispanic patterns of residential segregation. Hispanics and blacks are segregated from whites to similar degrees. Mean racial/ethnic isolation (P^*) measures show that a randomly chosen Hispanic resident has a .58 probability of being isolated from whites. Similarly, the probability that a randomly selected black resident is isolated from whites is .57. Additionally, the standard deviations for both the Hispanic and black isolation indices are approximately equal (std. dev. = .20) and indicate that nearly 20 percent of census places have extreme racial/ethnic isolation, with black and Hispanic P^* values above .77.

Table 3.1 also displays several interesting patterns of black and Hispanic disadvantage. Concentrated disadvantage levels are similar for Hispanics and blacks, with average concentrated disadvantage scores of approximately .29 for Hispanics and .30 for blacks. Additionally, the isolation of specific forms of disadvantage (i.e., poverty, education, female-headed families, unemployed males) is nearly identical for Hispanics and blacks. For example, the mean poverty isolation scores are .20 for Hispanics and .19 for blacks, and the mean education isolation scores are .19 and .18 for Hispanics and blacks, respectively. This indicates that poverty and education are as concentrated for Hispanics as they are for blacks. Among the specific disadvantage measures, poverty isolation is the most pronounced forms of disadvantage for both groups. Additionally, the standard deviations indicate that blacks and Hispanics have similar variations in the isolation of disadvantage measures across census places.

Table 3.1 shows that the average percentage of young males (ages 15 to 24) in the Hispanic population is approximately 9.7, while young males account for slightly less than 8 percent of the black population. However, the relative sizes of the young male populations vary across census places for both groups. The standard deviations indicate that the percentage of young, Hispanic males is between 6 and 13 percent and the percentage of young, black males in the population is between approximately 4 and 11 for two-thirds of census places in the sample.

Not surprisingly, immigration rates - measured as the percentage of foreign-born residents - are more than five times higher among Hispanics (36.7 percent) than among blacks (7.2 percent). Additionally, the standard deviations indicate that immigration rates for Hispanics vary more than black rates. The percentage of foreign-born Hispanic residents ranges from approximately 8 to more than 65 percent for 95 percent of census places in the sample. In contrast, the percentage of foreign-born black residents ranges from approximately 0 to 21

percent. Last, residential mobility patterns are fairly similar for Hispanics and blacks, with both groups experiencing 56 percent household turnover from 1995 to 2000. However, variation in residential mobility rates across census places is slightly higher for blacks (std. dev. = 12.46) than for Hispanics (std. dev. = 8.69)

RACIAL/ETHNIC ISOLATION AND VIOLENCE

Bivariate Results

Tables 3.2 and 3.3 display the bivariate correlation matrices for Hispanics and blacks, which are used to identify links between racial/ethnic residential segregation, other structural factors, and black and Hispanic rates of violence. As expected, Table 3.2 shows that Hispanic isolation is positively related to Hispanic violence, indicating that Hispanic rates of violence are higher in census places with greater Hispanic-white segregation. Specifically, the bivariate correlations show that Hispanic isolation from whites is positively related to Hispanic rates of homicide ($r = .36$) and Violent Index ($r = .33$). Additionally, Hispanic isolation has some of the strongest correlations with Hispanic violence measures, which suggests that the segregation-violence relationship is particularly strong among Hispanics.

Table 3.3 shows that segregation is also positively related to violence for blacks. However, the segregation-violence relationship is weaker for blacks than for Hispanics based on the correlation coefficients, and the only sizable relationship is observed for black homicide. The bivariate correlation between black isolation and homicide is positive ($r = .164$), indicating that black homicide rates are higher in census places with high levels of black-white segregation. In contrast, black isolation is not closely linked with black Violent Index rates ($r = .036$), which suggests that black-white segregation has little effect on black Violent Index rates.

In sum, the bivariate results suggest that isolation from whites *may* contribute to Hispanic violence. However, there is less evidence of a segregation-violence relationship for blacks – i.e., black isolation is related to black homicide but not Violent Index rates. Thus, the correlations provide some initial evidence that that segregation-violence relationship may be stronger for Hispanics than for blacks.

The bivariate analyses also suggest that concentrated disadvantage *may* mediate the segregation-violence relationship. That is, the results show some ties between segregation and concentrated disadvantage and also between concentrated disadvantage and violence for both Hispanics and blacks. Table 3.2 shows that Hispanic disadvantage is positively related to Hispanic isolation ($r = .29$) and to Hispanic rates of homicide ($r = .33$), and somewhat less so to Violent Index offenses ($r = .14$). This indicates that census places with highly segregated Hispanic populations tend to have high levels of concentrated Hispanic disadvantage. Additionally, places with highly disadvantaged Hispanic populations also have high rates of Hispanic violence.

Similarly, Table 3.3 shows that black concentrated disadvantage is positively related to black residential isolation ($r = .34$) and to black homicide ($r = .44$) and Violent Index rates ($r = .28$). These correlations indicate that black disadvantage is higher in census places with higher levels of black-white segregation. Additionally, they suggest that black violence is higher in places with greater black disadvantage.

Thus, the bivariate results indicate that the segregation-violence relationship may be mediated by structural disadvantage for both blacks and Hispanics. That is, racial/ethnic isolation is linked to black and Hispanic disadvantage, which in turn are linked to greater black and Hispanic rates of violence. However, it is unclear whether these bivariate findings and

effects persist net of other structural controls. To provide more rigorous tests of these tentative conclusions, we turn next to multivariate models.

Multivariate Results: Seemingly Unrelated Regression Models

Tables 3.4 and 3.5 display the results of seemingly unrelated regression (SUR) models predicting black and Hispanic homicide (Table 3.4) and Violent Index rates (Table 3.5). For each offense, two sets of black and Hispanic models are presented. Model 1 uses a reduced set of predictors and examines the impact of racial/ethnic isolation on black and Hispanic rates of violence net of controls. Model 2 replicates Model 1 for each offense but adds concentrated disadvantage measures to identify whether segregation-violence relationships may be mediated by disadvantage.¹⁵

Turning first to effects of segregation on homicide, Table 3.4 (Model 1) shows that racial/ethnic isolation is positively and significantly related to both black and Hispanic homicide rates, net of controls. The standardized coefficients in Model 1 show that Hispanic isolation is the strongest predictor of Hispanic homicide. This coefficient ($B = 0.366, p < .01$) indicates that a one standard deviation increase in Hispanic isolation corresponds with approximately a .37 standard deviation increase in the Hispanic homicide rate. The black isolation effect is not the strongest predictor of black homicide in Model 1. However, the standardized coefficient ($B = 0.172, p < .05$) indicates that black isolation from whites contributes significantly to black homicide and that a one standard deviation increase in black isolation corresponds with a .17 standard deviation increase in black homicide. Additionally, significance tests comparing Hispanic and black coefficients are not significant, which suggests that racial/ethnic isolation does not have different effects on black and Hispanic homicide. Thus, the results indicate that

¹⁵ This strategy for examining mediating effects follows procedures used by Shihadeh and colleagues (Shihadeh and Flynn 1996; Shihadeh and Maume 1997) and Peterson and Krivo (1999) in prior research on segregation and violence.

increases in black and Hispanic isolation lead to similar increases in homicide rates for both groups.

Second, Model 2 in Table 3.4 presents evidence that these segregation effects on violence are mediated by concentrated disadvantage. Specifically, Hispanic and black isolation effects on homicide are reduced to non-significance when concentrated disadvantage measures are included. Model 2 (Table 3.4) shows that concentrated disadvantage has similar, strong positive effects on both Hispanic and black homicide, indicating that disadvantage contributes to homicide rates for both Hispanics and blacks. Additionally, concentrated disadvantage measures are among the strongest predictors of Hispanic and black homicide ($B = 0.410, p < .01$ and $B = 0.247, p < .01$ respectively), while segregation has little direct effect on homicide controlling for disadvantage. The reduced effects of racial/ethnic isolation in Model 2 suggest that segregation has indirect effects on homicide and that it contributes to black and Hispanic homicide by concentrating disadvantage among minority populations.

Table 3.5 provides the results for the Violent Index models and shows that racial/ethnic isolation has somewhat different effects on Hispanic and black violence. Similar to the homicide results, Model 1 in Table 3.5 shows that Hispanic isolation contributes significantly to Hispanic Violent Index rates. The standardized coefficient for Hispanic isolation ($B = 0.203, p < .01$) is one of the largest coefficients in the model and indicates that a one standard deviation increase in Hispanic isolation corresponds to a one-fifth standard deviation increase in Hispanic Violent Index rates. In contrast, black isolation has no significant effect on black Violent Index rates. Additionally, the Z-test results (Model 1, Table 3.5) show that the Hispanic isolation effect is significantly stronger than the black isolation effect on Violent Index rates.

The full Violent Index models (Model 2) add concentrated disadvantage and show that disadvantage contributes to Hispanic and black Violent Index rates and is again one of the strongest predictors of violence for both groups ($B = 0.388, p < .01$ and $B = 0.466, p < .01$, respectively). However, concentrated disadvantage has a significantly stronger effect on black Violent Index rates than on Hispanic violence. Additionally, Model 2 in Table 3.5 again suggests that concentrated disadvantage mediates the segregation violence relationship because the effects of segregation on black and Hispanic Violent Index rates are reduced once concentrated disadvantage is added into the model. The positive direct effect of Hispanic isolation on violence drops out of significance when controlling for disadvantage. Additionally, the effect of black isolation changes from non-significant (Model 1) to significantly negative in Model 2, which suggests that black isolation from whites actually reduces black violence. As a result, the black isolation effect is again significantly different from the Hispanic effect and is one of the strongest predictors of black Violent Index rates in Model 2 (but is in the opposite direction of expectations).

The negative effect of black isolation on black violence is unexpected and varies from findings in prior literature, which show that black-white segregation contributes to black violence (see, for example, Lee and Ousey 2005; Peterson and Krivo 1993; 1999; Shihadeh and Flynn 1996; Shihadeh and Maume 1997; Smith 1992). However, the fact that the black and Hispanic isolation effects on Violent Index were both reduced in Model 2 (i.e., became more negative for blacks) suggests that racial/ethnic isolation may be *indirectly contributing* to black and Hispanic violence through concentrated disadvantage. That is, the results suggest that black isolation has a negative direct effect on Violent Index rates but *also a positive indirect effect that works through disadvantage*.

SUPPLEMENTAL ANALYSIS

So far, we have seen that isolation from whites contributes to Hispanic violence but has mixed effects on black violence. Additionally, concentrated disadvantage appears to mediate the segregation-violence relationship for both race/ethnic groups. However, to further exhaust the data and to check the validity and robustness of these findings, we now consider how another form of racial/ethnic isolation influences black and Hispanic violence – isolation from all race/ethnic groups.

Rather than focusing only on *isolation from whites*, it may be more theoretically appropriate to examine how black and Hispanic *isolation from all race/ethnic groups* influences violence. Research that describes black residential patterns explains that blacks are isolated in disadvantaged, inner-city communities (Anderson 1999; Lee 1985; Massy and Denton 1993; Peterson and Krivo 1999). Although they are isolated from whites, these segregated black populations may also be isolated from Asian/Pacific Islanders, Hispanics, and other race/ethnic groups. Thus, while isolation from whites is likely to have substantial influences on black violence, being isolated from all other race/ethnic groups and being in all-black or nearly-all-black communities may matter more than just being separated from whites.

Similarly, research describing Hispanic residential patterns concludes that Hispanic enclaves are isolated from whites but also from other race/ethnic groups (Charles 2000; Fischer et al. 2004; Healey 2006). Typically, the Hispanic enclaves described in prior research are homogenous and are comprised largely, if not entirely, of Hispanic residents. Thus, isolation from whites may not fully capture “Hispanic isolation” and its effects on Hispanic violence. Being surrounded almost completely by Hispanics and few members of other race/ethnic groups may affect Hispanic violence differently than simply being segregated from whites.

To address these concerns, the analysis from the previous section is replicated using black and Hispanic isolation indices (${}_bP^*_b$ and ${}_hP^*_h$) described by Massey and Denton (1988) and measured as:

$${}_bP^*_b = \sum_{i=1}^n (b_i/B) (b_i/t_i)$$

where, b_i is the total number of blacks in block group i , B is the total number of blacks in the census place, and t_i is the total population of block group i . The Hispanic isolation index was calculated using the same procedure but with Hispanic population figures. ${}_bP^*_b$ and ${}_hP^*_h$ range from 0 to 1 and reflect the probability that a randomly chosen black (or Hispanic) resident shares the same block group as another black (or Hispanic) individual (Massey and Denton 1988; Shihadeh and Flynn 1996). In contrast to the black and Hispanic isolation measures used in the prior section, which were calculated using the converse of the black-white and Hispanic-white interaction indices, the present measures reflect black and Hispanic isolation from all other race/ethnic groups.

In general, the results of the supplemental analysis are similar to the findings from the previous sections, especially regarding the effects of segregation and disadvantage on Hispanic and black violence. Table 3.6 displays the results of the supplemental homicide models and shows that, as in the previous analysis (see Table 3.4), racial/ethnic isolation contributes to both black and Hispanic homicide (Model 1). The standardized coefficients indicate that a one standard deviation increase in isolation from other race/ethnic groups corresponds with more than a 25 percent standard deviation increase in Hispanic homicide ($B = 0.261, p < .01$) and about a 17 percent standard deviation increase in black homicide ($B = 0.168, p < .05$). Additionally, Model 1 shows that the effects of racial/ethnic isolation on homicide are not significantly different for blacks and Hispanics. When it is added in Model 2, we again see that concentrated

disadvantage contributes to black and Hispanic homicide and has similar effects for both groups. Additionally, the segregation effects drop out of significance when concentrated disadvantage is added (Model 2), which again suggests that the segregation-violence relationship is mediated by concentrated disadvantage for both groups. Thus, the results suggest that being isolated from whites (Table 3.4) and from all other race/ethnic groups (Table 3.6) has similar effects on homicide for blacks and Hispanics. Specifically, both forms of segregation indirectly contribute to homicide rates by increasing concentrated disadvantage among blacks and Hispanics.

Table 3.7 provides the results for the supplemental Violent Index models. Similar to the prior Violent Index analysis (see Table 3.5), Model 1 from Table 3.7 again shows that racial/ethnic isolation has different effects on Hispanic and black violence. Specifically, Hispanic isolation from other race/ethnic groups contributes significantly and strongly to Hispanic Violent Index rates. The standardized effect of Hispanic isolation ($B = 0.166$, $p < .01$) is one of the largest coefficients in the model and indicates that a one standard deviation increase in Hispanic isolation corresponds to a 17 percent standard deviation increase in Hispanic Violent Index rates. In contrast, black isolation from other race/ethnic groups has a negative effect on black Violent Index rates, which suggests that black isolation actually reduces black violence. This finding varies from the previous Violent Index analysis, which revealed no initial effect of segregation on black Violent Index rates (see Model 1, Table 3.5).

The full Violent Index models (Model 2, Table 3.7), which add concentrated disadvantage measures, closely resemble the Violent Index models from the previous section. Here we find that concentrated disadvantage contributes to Hispanic and black Violent Index rates and is again one of the strongest predictors of violence for both groups. Again, concentrated disadvantage has significantly stronger effects on black Violent Index rates than on

Hispanic violence ($B = 0.508, p < .01$ and $B = 0.363, p < .01$, respectively). Model 2 also shows that racial/ethnic isolation from other groups has significantly different effects on Violent Index rates for Hispanics and blacks. As seen earlier, the Hispanic isolation effect on violence drops out of significance ($B = 0.021, p > .05$) and the black effect becomes more negative ($B = -0.497, p < .01$).

The results of Model 2 in Table 3.7 again suggest that concentrated disadvantage mediates the segregation-violence relationship because the effects of isolation on Hispanic and black Violent Index rates are reduced (or become more negative for blacks) once concentrated disadvantage is added into the model. Thus, these findings suggest that racial/ethnic isolation does not directly increase Hispanic or black Violent Index rates, but may *indirectly* contribute to Hispanic and black violence by increasing levels of concentrated disadvantage.

In sum, the results of the supplemental analysis closely parallel the earlier findings and suggest that isolation from whites and all other race/ethnic groups has similar effects on black and Hispanic violence. Similar to the previous analysis, residential isolation from other race/ethnic groups contributes strongly to Hispanic violence and to black homicide, but not to black Violent Index rates. Both sets of results show that the effects of racial/ethnic isolation and concentrated disadvantage on violence vary across race/ethnic groups (for the Violent Index models). Additionally, both analyses suggest that concentrated disadvantage mediates the effects of racial/ethnic isolation on violence and that segregation indirectly contributes to black and Hispanic violence by increasing concentrated disadvantage.

DISCUSSION AND CONCLUSION

Sociological research has provided substantial evidence that racial residential segregation has harmful consequences for black populations. Scholars generally agree that black-white

segregation has helped concentrate multiple forms of disadvantage in black neighborhoods – such as poverty, unemployment, and single-parent families (Krivo et al. 1998; Massey 1996; 2001; Massy and Denton 1993; Peterson and Krivo 1999; Sampson and Wilson 1995). Research also suggests that segregation contributes to higher violence rates (Akins 2003; Lee and Ousey 2005; Logan and Messner 1987; Peterson and Krivo 1993; 1999; Sampson 1985; Shihadeh and Flynn 1996; Shihadeh and Maume 1997). However, research addressing the segregation-violence relationship has faced several limitations. First, surprisingly few studies have examined how black-white segregation specifically influences black violence, and almost no research has examined the impact of segregation on Hispanic violence. Second, research has rarely examined potential mediating effects in the segregation-violence relationship. Third, drawing from the racial invariance assumption, scholars have rarely compared the effects of segregation on violence across race/ethnic groups.

The current study addresses these limitations and extends research on segregation and violence by (1) examining the segregation-violence relationship for blacks *and Hispanics*, (2) examining whether concentrated disadvantage mediates the segregation-violence relationship, and (3) comparing the effects of segregation on black and Hispanic violence.

This analysis provides several important findings regarding the segregation-violence relationship. The results indicate that segregation generally contributes to Hispanic violence. The bivariate, multivariate, and supplemental results show that census places with greater Hispanic isolation have higher Hispanic homicide and Violent Index rates. Additionally, concentrated disadvantage appears to mediate the effects of Hispanic-white segregation on Hispanic violence. As found in prior research, segregation also contributes to black homicide. However, the effects of segregation on black Violent Index rates are more complex and are

somewhat surprising. Black-white segregation has negative *direct* effects on black Violent Index rates, indicating that black isolation reduces black Violent Index rates. However, at the same time black isolation may contribute to black violence *indirectly* by concentrating disadvantage among black populations. Thus, black isolation may have multiple, countervailing effects on black Violent Index rates.

Several implications may be drawn from these findings. First, these results highlight the importance of extending segregation-violence research beyond white-black comparisons to include other race/ethnic groups. While racial/ethnic segregation has been shown to have particularly harmful consequences for African Americans, its effects appear to extend beyond black communities to also influence other segregated, disadvantaged minority groups. Other race/ethnic groups, such as Hispanics, also remain highly isolated from whites and may experience harmful consequences as a result of racial/ethnic segregation. As shown here, racial/ethnic segregation has violence-generating effects on Hispanic communities.

Additionally, this analysis suggests that residential segregation contributes to some forms of violence more strongly for Hispanics than for blacks. Thus, to more fully understand the segregation-violence relationship, it is important for research to continue to examine the segregation-violence relationship for blacks but also for other segregated minority populations, like Hispanics.

Second, these findings provide mixed support for the racial invariance assumption, which argues that the structural sources of violence and the violence-generating process are similar, or “invariant,” across race/ethnicity. The homicide results provide the strongest support for the racial invariance assumption and show that both segregation and concentrated disadvantage contribute to homicide in similar ways for blacks and Hispanics. This finding provides

particularly strong support for racial invariance arguments because homicide is widely recognized as one of the most reliably reported violent offenses. Additionally, the results suggest that concentrated disadvantage mediates the segregation-violence relationship for both whites and blacks for both offenses. However, the results also highlight important differences in the violence-generating process for Hispanics and blacks. Concentrated disadvantage has significantly stronger effects on Violent Index rates for blacks than for Hispanics. Also, racial/ethnic isolation from whites and other race/ethnic groups contributes more strongly to Violent Index rates for Hispanics than for blacks.

While these findings make important contributions to our understanding of the segregation-violence relationship, it is important to note that several of the findings are unexpected. Theory and prior literature suggest that black-white segregation contributes strongly to black violence. Thus, the negative effects of black isolation on black Violent Index rates are particularly surprising. Additionally, as discussed earlier, the social capital and ethnic economies literature suggest that Hispanic enclaves have strong cohesion, kinship bonds, and social capital networks that provide community residents with resources and a protective buffer against the potentially harmful effects of disadvantage and segregation. Based on these arguments, it is plausible that segregation would have weaker effects on Hispanic violence than on black violence. Although segregation has similar effects on homicide for both groups, the results surprisingly indicate that racial/ethnic isolation (from whites and from all other groups) contributes to Violent Index rates more strongly for Hispanics than for blacks. Thus, this analysis provides mixed support for the social capital arguments described above.

As in most macro-level studies of crime, the present study was limited to the structural measures available from U.S. Census Data. As a result, there may be other potential control

variables that would help account for the negative effects of segregation on black Violent Index rates. Additionally, it is possible that segregation has positive/negative effects on violence only under certain conditions. Segregation may have different effects on violence depending on the characteristics of the community (e.g., community size, disadvantage, immigration, etc.). Thus, further research is needed to disentangle these findings and to identify other control variables and interactive relationships that can help clarify the segregation-violence relationship.

Researchers should continue to examine and compare segregation effects on violence across race/ethnic groups to further address racial invariance assumptions and to determine whether the segregation-violence relationship is similar across race/ethnicity. Research should also begin to examine how segregation of minority groups from each other (e.g., black-Hispanic segregation) influences violence among minority groups. As seen in several earlier studies (Peterson and Krivo 1999; Shihadeh and Flynn 1996; Shihadeh and Maume 1997), findings from this study provide additional evidence that the segregation-violence relationship may be mediated by concentrated disadvantage. Thus, future research is needed that more fully explores and tests for possible indirect effects of segregation on violence. As characterizes most prior research, this study relies on cross-sectional data to examine the segregation-violence relationship. Thus, there is also a need for research that employs longitudinal data that presumably can better establish the effects of segregation on violence, test for indirect effects, and reveal any reciprocal effects of violence on segregation. Future studies should expand the scope of segregation-crime research to include other race/ethnic groups, offenses (e.g., rape, robbery, property crimes), and localities. Last, in light of the mixed findings in this report and the debate surrounding the racial invariance assumption, more probes of the racial invariance

assumption are needed to discern whether segregation and other structural factors have invariant effects on violence across race/ethnic groups.

Table 3.1. Means and Standard Deviations for Variables by Race and Ethnicity

VARIABLES	HISPANIC		BLACK	
	Mean	Std. Dev.	Mean	Std. Dev.
Dependent - (arrest rates/100,000)				
Homicide ^{a,b}	6.30	8.95	15.74	26.69
Violent Index ^{a,b}	502.12	335.40	1305.80	817.19
Independent				
Racial/Ethnic Isolation (P*) ^b	0.58	0.20	0.57	0.20
Concentrated Disadvantage ^b	0.29	0.89	0.30	0.91
Poverty P* ^b	0.20	0.09	0.19	0.10
Education P* ^b	0.19	0.08	0.18	0.09
Female Headed Families P* ^b	0.04	0.01	0.04	0.02
Unemployed Males P* ^b	0.03	0.02	0.03	0.02
% Male 15-24 ^b	9.74	3.05	7.95	3.82
% Foreign-Born ^b	36.68	14.38	7.15	7.23
Residential Mobility ^b	56.31	8.69	56.39	12.46
Density (people/sq. mile)	5461.82	6054.32	5461.82	6054.32
Total Population Size	138822.07	360675.37	138822.07	360675.37
State (New York)	0.24	0.43	0.24	0.43

a. Original rates used here. Dependent variables are square root transformed in the multivariate analysis.

b. Variable is race/ethnicity-specific.

Table 3.2. Correlations of Dependent and Independent Variables for the Hispanic Population

	1	2	3	4	5	6	7	8	9	10
1. Homicide rate	1.000									
2. Violent Index rate	0.425	1.000								
3. Residential Isolation (P*)	0.364	0.334	1.000							
4. Structural Disadvantage Index	0.334	0.136	0.287	1.000						
5. Total population	0.296	0.212	0.283	0.202	1.000					
6. Density	0.180	0.059	0.359	0.214	0.452	1.000				
7. % Males 15-24	-0.131	-0.205	-0.036	0.121	-0.159	-0.086	1.000			
8. % Foreign-born	0.033	0.038	0.527	-0.118	0.191	0.285	0.054	1.000		
9. Residential mobility	-0.164	-0.104	-0.332	0.306	-0.154	-0.263	0.365	-0.131	1.000	
10. State (New York = 1)	-0.191	-0.671	-0.269	0.306	-0.079	0.158	0.137	-0.086	0.176	1.000

Table 3.3. Correlations of Dependent and Independent Variables for the Black Population

	1	2	3	4	5	6	7	8	9	10
1. Homicide rate	1.000									
2. Violent Index rate	0.361	1.000								
3. Residential Isolation (P*)	0.164	0.036	1.000							
4. Structural Disadvantage Index	0.437	0.278	0.338	1.000						
5. Total population	0.263	0.286	0.257	0.167	1.000					
6. Density	0.171	0.122	0.398	0.253	0.452	1.000				
7. % Males 15-24	-0.082	-0.134	-0.078	-0.043	-0.107	-0.097	1.000			
8. % Foreign-born	0.032	-0.258	0.006	-0.089	0.196	0.300	-0.044	1.000		
9. Residential mobility	-0.023	0.115	-0.294	0.063	-0.116	-0.288	0.291	-0.244	1.000	
10. State (New York = 1)	0.285	-0.268	-0.100	0.394	-0.079	0.158	-0.067	0.469	-0.260	1.000

Table 3.4. Hispanic and Black Seemingly Unrelated Regression Models for Homicide

	MODEL 1				MODEL 2			
	HISPANIC		BLACK		HISPANIC		BLACK	
	b	β	b	β	b	β	b	β
Racial/Ethnic Isolation (P*)	3.138 (0.645)	0.366 **	2.552 (1.003)	0.172 *	0.789 (0.785)	0.092	1.006 (1.117)	0.068
Concentrated Disadvantage	-	-	-	-	0.785 (0.159)	0.410 **	0.818 (0.273)	0.247 **
Total Population Size	0.356 (0.116)	0.201 ** #	0.961 (0.205)	0.306 ** #	0.232 (0.114)	0.131 * #	0.814 (0.208)	0.259 ** #
Density (people/sq. mile)	4.14E-06 (2.04E-05)	0.015	-9.12E-06 (3.56E-05)	-0.018	-3.38E-06 (1.95E-05)	-0.012	-1.99E-05 (3.53E-05)	-0.040
% Male 15-24	-0.034 (0.035)	-0.062	-0.044 (0.047)	-0.055	-0.033 (0.034)	-0.058	-0.042 (0.047)	-0.053
% Foreign-Born	-0.024 (0.008)	-0.200 **	-0.077 (0.028)	-0.185 **	-0.003 (0.009)	-0.027	-0.042 (0.031)	-0.100
Residential Mobility	-0.002 (0.013)	-0.008	0.036 (0.016)	0.150 *	-0.036 (0.015)	-0.185 * #	0.018 (0.017)	0.076 #
State (New York)	-0.329 (0.255)	-0.083 #	3.202 (0.480)	0.455 ** #	-0.963 (0.274)	-0.242 ** #	2.018 (0.625)	0.287 ** #
Constant	-2.533 (1.474)	† #	-11.383 (2.476)	** #	1.352 (1.615)		-8.011 (2.681)	**
R-squared	0.2198		0.2358		0.291		0.264	

N = 232 † p<.10 * p<.05 ** p<.01

NOTE: # Indicates Hispanic and black coefficients are significantly different (p<.05). Standard errors are shown in parentheses.

Table 3.5. Hispanic and Black Seemingly Unrelated Regression Models for Violent Index

	MODEL 1				MODEL 2			
	HISPANIC		BLACK		HISPANIC		BLACK	
	b	β	b	β	b	β	b	β
Racial/Ethnic Isolation (P*)	8.574 (2.398)	0.203 ** #	-4.993 (3.833)	-0.087 #	-1.826 (2.809)	-0.043 #	-15.858 (3.968)	-0.277 ** #
Concentrated Disadvantage	-	-	-	-	3.660 (0.569)	0.388 ** #	5.959 (0.954)	0.466 ** #
Total Population Size	0.678 (0.442)	0.078 #	3.339 (0.794)	0.275 ** #	0.200 (0.418)	0.023 #	2.184 (0.746)	0.180 ** #
Density (people/sq. mile)	1.53E-04 (7.71E-05)	0.111 *	2.71E-04 (1.38E-04)	0.141 *	1.23E-04 (7.14E-05)	0.089 †	2.07E-04 (1.26E-04)	0.108
% Male 15-24	-0.329 (0.125)	-0.120 **	-0.350 (0.170)	-0.115 *	-0.311 (0.119)	-0.113 **	-0.413 (0.162)	-0.135 *
% Foreign-Born	-0.094 (0.028)	-0.161 ** #	-0.413 (0.100)	-0.256 ** #	-0.010 (0.031)	-0.017	-0.185 (0.105)	-0.115 †
Residential Mobility	0.094 (0.046)	0.098 *	0.077 (0.058)	0.082	-0.052 (0.051)	-0.054	-0.028 (0.059)	-0.030
State (New York)	-12.520 (0.967)	-0.641 ** #	-3.861 (1.832)	-0.142 * #	-15.435 (1.000)	-0.790 **	-12.180 (2.187)	-0.448 **
Constant	11.986 (5.495)	0.000 *	0.967 (9.498)	0.000	28.027 (5.808)	0.000 **	25.530 (9.497)	0.000 **
R-squared	0.533		0.232		0.606		0.397	

N = 232 † p<.10 * p<.05 ** p<.01

NOTE: # Indicates Hispanic and black coefficients are significantly different (p<.05). Standard errors are shown in parentheses.

Table 3.6. Hispanic and Black Seemingly Unrelated Regression Models for Homicide using Alternative Isolation Indices

	MODEL 1				MODEL 2			
	HISPANIC		BLACK		HISPANIC		BLACK	
	b	β	b	β	b	β	b	β
Racial/Ethnic Isolation (P*)	2.790 (0.613)	0.261 **	2.510 (1.240)	0.168 *	0.549 (0.752)	0.051	0.867 (1.582)	0.058
Concentrated Disadvantage	-	-	-	-	0.808 (0.160)	0.422 **	0.859 (0.273)	0.259 **
Total Population Size	0.387 (0.117)	0.218 ** #	0.952 (0.207)	0.303 ** #	0.237 (0.115)	0.133 * #	0.804 (0.209)	0.256 ** #
Density (people/sq. mile)	1.36E-05 (2.02E-05)	0.048	7.10E-06 (3.47E-05)	0.014	-1.03E-06 (1.94E-05)	-0.004	-1.46E-05 (3.47E-05)	-0.029
% Male 15-24	-0.017 (0.035)	-0.031	-0.040 (0.047)	-0.051	-0.029 (0.034)	-0.051	-0.041 (0.047)	-0.052
% Foreign-Born	-0.023 (0.008)	-0.197 ** #	-0.081 (0.028)	-0.194 ** #	-0.002 (0.009)	-0.017	-0.041 (0.031)	-0.098
Residential Mobility	-0.012 (0.013)	-0.063 #	0.033 (0.016)	0.136 * #	-0.040 (0.014)	-0.203 ** #	0.016 (0.017)	0.065 #
State (New York)	-0.269 (0.263)	-0.068 #	2.550 (0.543)	0.362 ** #	-0.981 (0.287)	-0.247 ** #	1.725 (0.584)	0.245 ** #
Constant	-1.745 (1.465)	#	-9.971 (2.410)	** #	1.658 (1.550)	#	-7.300 (2.504)	** #
R-squared	0.250		0.236		0.298		0.231	

N = 232 † p<.10 * p<.05 ** p<.01

NOTE: # Indicates Hispanic and black coefficients are significantly different (p<.05). Standard errors are shown in parentheses.

Table 3.7. Hispanic and Black Seemingly Unrelated Regression Models for Violent Index using Alternative Isolation Indices

	MODEL 1				MODEL 2			
	HISPANIC		BLACK		HISPANIC		BLACK	
	b	β	b	β	b	β	b	β
Racial/Ethnic Isolation (P*)	8.764 (2.101)	0.166 ** #	-18.492 (4.839)	-0.320 ** #	1.110 (2.595)	0.021 #	-28.740 (5.185)	-0.497 ** #
Concentrated Disadvantage	-	-	-	-	3.420 (0.571)	0.363 ** #	6.494 (0.924)	0.508 ** #
Total Population Size	0.745 (0.440)	0.085 #	3.661 (0.790)	0.302 ** #	0.197 (0.421)	0.023 #	2.443 (0.727)	0.201 ** #
Density (people/sq. mile)	1.69E-04 (7.54E-05)	0.122 *	3.23E-04 (1.32E-04)	0.168 *	1.01E-04 (7.07E-05)	0.073	1.58E-04 (1.21E-04)	0.082
% Male 15-24	-0.296 (0.124)	-0.108 *	-0.322 (0.167)	-0.106 *	-0.325 (0.118)	-0.118 **	-0.389 (0.158)	-0.127 *
% Foreign-Born	-0.095 (0.028)	-0.163 ** #	-0.435 (0.098)	-0.270 ** #	-0.018 (0.031)	-0.031	-0.147 (0.103)	-0.092
Residential Mobility	0.061 (0.045)	0.064	0.071 (0.056)	0.076	-0.046 (0.048)	-0.048	-0.037 (0.056)	-0.040
State (New York)	-12.135 (0.973)	-0.621 ** #	0.193 (2.007)	0.007 #	-14.855 (1.031)	-0.760 ** #	-6.301 (1.997)	-0.232 ** #
Constant	14.325 (5.413)	**	-3.388 (9.156)		26.768 (5.583)	**	17.086 (8.673)	*
R-squared	0.534		0.244		0.604		0.390	

N = 232 † p<.10 * p<.05 ** p<.01

NOTE: # Indicates Hispanic and black coefficients are significantly different (p<.05). Standard errors are shown in parentheses.

CHAPTER 4:

HISPANIC IMMIGRATION AND VIOLENCE

The previous chapter sought to extend research on race/ethnicity, social structure, and crime by examining and comparing the effects of racial/ethnic segregation on violence for Hispanics and blacks. This chapter seeks to further extend theory and research on the social ecology of crime toward an understanding of Hispanic violence by focusing specifically on the impact of recent immigration on Hispanic rates of violence. In particular, Chapter 4 examines both the direct and indirect effects of immigration on violence and draws from social disorganization theory and the social capital perspective to identify the processes by which immigration influences violence.

This chapter begins with a brief background discussion of the immigration-violence linkage and then provides a more detailed review of prior research on immigration and violence. Because the data and methods were described in greater detail in the previous chapter, I provide only a brief discussion of data and methods in the present chapter. Next, I discuss the findings of the analysis, highlighting the direct, indirect, and total effects of immigration on Hispanic violence. The chapter concludes by describing key contributions of this chapter, caveats, and directions for future research on immigration and violence.

BACKGROUND

Dating back to the Chicago School, sociology has had a rich tradition of research examining the social and economic influence of immigration. Scholars describe the patterns of social change caused by the influx of immigrants into the U.S. at the beginning of the 20th century and explain how early patterns of immigration influenced the social organization, economic conditions, culture, and crime in urban communities (Shaw and McKay 1942;

Sutherland and Cressey 1966). However, sociological research has yet to fully explore the social consequences of immigration. In particular, research has often overlooked how recent patterns of Hispanic immigration may influence social structure, crime, and violent offending.

In recent decades, increasingly large numbers of Hispanic and especially Mexican immigrants have entered the U.S. For example, between 1990 and 2005, approximately 6.5 million Mexican immigrants entered the country. Additionally, the Hispanic foreign-born population increased by more than 20 percent between 2000 and 2005 so that there were nearly 17 million foreign-born Hispanics in the U.S. in 2005. Due in part to these immigration patterns, Hispanics have now become the largest and fastest growing minority group in the U.S. (Healey 2006; U.S. Census Bureau 2005; Pew Hispanic Center 2006a; 2006b). These high levels of immigration and population growth are likely to have substantial influences on social structure and possibly on violent offending in Hispanic communities. However, the effects of these recent patterns of immigration on Hispanic violence have rarely been examined and are highly debated in sociological and criminological research.

Both public perception and criminological research and theory have linked immigration with violent crime. Popular stereotypes and public opinions commonly link immigration and violence, claiming that recent patterns of Hispanic immigration have contributed to higher crime and violence rates (Horowitz 2001; Pew Hispanic Center 2006b; for critical reviews of these claims see Hagan and Palloni 1999; Lee et al. 2001; Martinez and Lee 2000; Sampson and Bean 2006). Sociological research also notes that Hispanic immigration may lead to higher rates of violence because recent immigrants have often been part of a highly crime-prone demographic group - young males with few family attachments or conventional ties (Martinez and Lee 2000; Hagan and Palloni 1999). Additionally, the *traditional arguments of social disorganization*

theory (hereafter, social disorganization or traditional social disorganization) suggests that immigration leads to social change and may contribute to violence by disorganizing and destabilizing communities (Lee et al. 2001; Martinez 2000; 2002; Martinez and Lee 2000; Nielsen et al. 2005; Shaw and McKay 1942). Specifically, traditional social disorganization theory suggests that immigration may contribute to violence indirectly by increasing community levels of residential mobility, poverty, and heterogeneity.

However, in contrast to these arguments and drawing from social capital perspectives, an emerging body of research indicates that violence is less common among immigrant populations and that the immigration process may reduce violence in Hispanic communities (at least temporarily) (Butcher and Piehl 1998a; 1998b; Hagan and Palloni 1999; Lee et al. 2001; Martinez 2000; 2002; Martinez and Lee 1998; 2000; Nielsen et al. 2005; Sampson et al. 2005; Velez 2006). Some scholars present a “counterclaim” to the social disorganization argument, referred to here as the *community resource perspective*, which suggests that immigration may not disorganize and destabilize communities at all, but may instead act as a stabilizing force in many Hispanic communities (Lee et al. 2001:563; Martinez 2000). According to social capital perspectives, the *community resource perspective* suggests that Hispanic immigration may help to draw resources and jobs into communities and strengthen community cohesion, family structure, and social capital networks (Lee et al. 2001; Martinez 2002; Martinez and Lee 1998; 2000; Martinez et al. 2004; Martinez and Nielsen 2006; Nielsen et al. 2005; Portes and Stepick 1993; Velez 2006). Thus, immigration may help reduce violence among Hispanic populations by providing protective resources and by strengthening key social institutions and resource-sharing networks in Hispanic communities.

Research has only recently begun to revisit the immigration-violence relationship. Thus, it is unclear whether immigration acts as a stabilizing, crime-reducing force or whether it creates social disorganization and ultimately greater violence among Hispanics. This study contributes to research on immigration and violence by examining how recent patterns of Hispanic immigration in California and New York influence Hispanic violence (i.e., homicide and Violent Index rates). In particular, this project extends immigration-crime research by testing the competing *traditional social disorganization theory* and the *community resource perspective* (drawn from the social capital perspective) about the effects of immigration on violence. That is, this analysis examines both the direct and indirect effects of immigration on Hispanic violence to discern whether immigration (1) contributes to violence by increasing social disorganization in Hispanic populations (e.g., residential mobility, poverty, and heterogeneity) or (2) decreases Hispanic violence by stabilizing communities and strengthening social capital/support and social institutions among Hispanic populations (e.g., family structure, employment, burden of care for dependents). Although a handful of studies have addressed the Hispanic immigration-crime relationship, this marks the first attempt to simultaneously test competing arguments about the immigration-crime relationship and to empirically examine the indirect paths by which immigration influences Hispanic violence.

CONCEPTUAL FRAMEWORK AND PRIOR RESEARCH

Scholars devoted considerable attention to the immigration-crime relationship following periods of high European immigration near the beginning of the 20th century (Shaw and McKay 1942; Taft 1933; Thomas and Znaniecki 1927; for review see Bursik 2006). However, there is a paucity of research addressing how the recent influx of Hispanic immigrants has influenced violence in the U.S. This gap in the research has not prevented sociologists and the general

public from forming ideas and speculating about potential immigration-crime relationships. However, as described below, these perceptions and proposed theoretical explanations have rarely been tested and are often contradictory.

COMPETING VIEW OF THE IMMIGRATION-VIOLENCE RELATIONSHIP

Violence-Generating Effects of Immigration

Both public perception and criminological and sociological theories have linked immigration to increased violence and suggest that Hispanic immigration may lead to higher rates of Hispanic violence. First, in response to high levels of immigration and the rapid growth in the Hispanic population, US citizens have become increasingly concerned with the effects of immigration – including its possible effects on crime and violence. Recent reports describe fears among US citizens that immigrants are harming the American way of life, taking job opportunities from citizens, and contributing to violence and crime in the U.S. (Horowitz 2001; Pew Hispanic Center 2006b; see reviews in Butcher and Piehl 1998a; 1998b; Hagan and Palloni 1999; Lee et al. 2001; Martinez and Lee 2000). Such fears are illustrated in a recent report by Horowitz (2001:6, 8) from the Center for Immigration Studies, which claims that “immigrant crime poses a far greater problem than many researchers are willing to admit” and that “newcomers have brought with them a criminal element who ... have turned their communities into zones of lawlessness.”¹⁶

Horowitz (2001:24) draws further links between immigration and crime when he argues that “Congress must restrict the number of immigrants who may enter this nation legally in a

¹⁶ Horowitz is a policy consultant for the Center for Immigration Studies (CIS). He received his Ph.D. in urban planning and policy development from Rutgers University and formerly served as an assistant professor of urban and regional planning at the Virginia Polytechnic Institute. CIS states that it is a “non-profit, non-partisan research organization based in Washington, D.C.” whose purpose is to examine the impact of immigration on the United States. The center’s mission statement states that its purpose is to “expand the base of public knowledge and understanding of the need for an immigration policy that gives first concern to the broad national interest. The Center is animated by a pro-immigrant, low-immigration vision which seeks fewer immigrants but a warmer welcome for those admitted.” (<http://www.cis.org/aboutcis.html>)

given year to make major headway in crime control.” Both the general public and elected officials have made similar claims and have increasingly drawn attention to high violent crime rates and incidents involving immigrants in order to link immigration and violence and to pass legislation restricting immigrant opportunities and rights (see review in Lee et al. 2001). For example, the Illegal Immigration Relief Act of Hazelton, Pennsylvania provides a cogent illustration of such legislation. This act, which punishes businesses and landlords for employing and renting to illegal aliens, was inspired when Hazelton Mayor Louis Barletta claimed that a recent influx of Hispanic immigrants was responsible for increases in Hazelton crime rates. Even though Mayor Barletta’s claims of an immigration-crime link in Hazelton have been scrutinized and have received little support from official crime statistics, this restrictive legislation has been emulated in other towns attempting to crack down on illegal immigration and reacting to fears of immigration-violence links (New York Times, March 20, 2007). Thus, despite research showing that immigrants often have lower violent crime rates than comparable native-born residents (Butcher and Piehl 1998a; 1998b; Hagan and Palloni 1999; Martinez 2002; Martinez and Lee 2000; Taft 1933; Tonry 1997), public perception and some elected officials continue to view immigration as a key source of violence.

Second, sociological and criminological research has also drawn links between Hispanic immigration and high levels of violence and provides several theoretical arguments to explain why immigration may contribute to Hispanic violence. Demographic studies of crime and violence consistently report that young males have the highest rates of violence and crime compared to other demographic groups (Brown et al. 2007; Feldmeyer and Steffensmeier Forthcoming; Steffensmeier 1993; Steffensmeier and Allan 1995; Steffensmeier and Feldmeyer 2006; Steffensmeier et al. 2005). Young males make up a larger share of the Hispanic immigrant

population than found among most native-born U.S. groups (Pew Hispanic Center 2006a). Additionally, many of these immigrants enter the country alone, without a spouse or children. Thus, Hispanic immigration may lead to higher rates of violence because immigrants tend to be young males with fewer family attachments (Martinez and Lee 2000; Hagan and Palloni 1999).

Criminological theories also suggest that the immigration process may contribute to violence by creating strain and limited opportunities among immigrant populations. New Hispanic immigrants may be subject to prejudice and discrimination that limits housing and employment opportunities. Furthermore, undocumented immigrants face the additional challenges and strain of obtaining work and housing while avoiding detection by authorities. Language barriers and difficulties assimilating to a new culture and environment may cause additional strain and distress for immigrant groups. Additionally, Hispanic immigrants often move into highly disadvantaged communities and therefore, must learn to manage the difficulties of living in neighborhoods with few resources or jobs, below-average schools, and low-quality housing.

Structural-cultural theories of crime argue that the harsh conditions in many immigrant communities are conducive to subcultural adaptations that are more accepting and permissive of violence than found in mainstream culture (Anderson 1999; Oliver 2003; Sampson and Wilson 1995). For example, Elijah Anderson's (1999) depiction of the inner-city street code provides one of the most well-known descriptions of the defensive violent adaptations and oppositional subcultures that may be found in disadvantaged and predominantly minority, inner-city neighborhoods. Thus, criminological theory argues that immigrants and especially immigrants' children may be pulled into violence as they are exposed to oppositional subcultures and adopt the normative values and patterns of these disadvantaged communities.

However, the most common theoretical link between immigration and violence is drawn from social disorganization theory and the Chicago School of criminology. In developing social disorganization theory, Shaw and McKay (1942) mapped Chicago crime patterns around the turn of the century and found that crime was consistently highest in the “Zone of Transition,” an area that experienced high levels of immigration and population turnover. They argue that the high crime rates in the zone of transition were not due to any characteristics of immigrant groups but instead resulted from the disadvantaged characteristics and social disorganization of the community. They explain that the zone of transition was poor, experienced high population turnover, and was highly heterogeneous in terms of race/ethnicity, cultures, and languages. They argue that these factors created disorganized communities by limiting the residents’ ability to communicate and to recognize and achieve common goals, like crime control (Shaw and McKay 1942; see also, Cullen and Agnew 2006; Martinez and Lee 2000; Martinez et al. 2004; Sampson and Groves 1989; Silver 2000). Based on these traditional arguments, social disorganization theory suggests that immigration may contribute to violence indirectly by creating social disorganization and by contributing to social conditions that destabilize communities.

Hispanic immigrants often have few resources and are poor when they enter the US, which may increase disadvantage and poverty levels in immigrant communities. Immigration also creates population turnover and residential mobility as new residents enter a community. As new immigrants arrive from different parts of the world, racial/ethnic heterogeneity is also likely to increase in a community. Furthermore, immigrants often bring new languages, cultures, values, and beliefs into a community, which could create cultural conflict and increase the heterogeneity of values, norms, and languages among community residents (Thomas and Znaniecki 1927). In sum, while there may be nothing particularly criminal about immigrants as

a whole, the traditional arguments of social disorganization theory explain that the immigration process may serve to disorganize and destabilize communities. Thus, immigration may break down community cohesion and social control and lead to greater rates of violence and crime.

Violence-Reducing Effects of Immigration

In contrast to the arguments discussed above, there is mounting evidence indicating that violence rates are fairly low among immigrants and that recent patterns of Hispanic immigration may actually reduce violence. First, research on immigration and crime consistently reports that Hispanic immigrants and other foreign-born groups commit either similar or lower levels of crime and violence than comparable, native-born populations with similar age and gender distributions (Butcher and Piehl 1998a; 1998b; Hagan and Palloni 1999; Martinez 2002; Martinez and Lee 2000; Taft 1933; Tonry 1997). Several studies by Martinez and colleagues show that violence levels among highly immigrant Hispanic and Haitian populations are consistently low and are often only slightly higher than white levels of violence (Martinez and Lee 1998; 2000; Martinez 2002; 2003; Martinez and Nielsen 2006; Riedel 2003). Research by Butcher and Piehl (1998a) indicates that immigrants and especially recent immigrants are much less likely to be incarcerated and institutionalized than native-born U.S. residents with similar demographic characteristics. Hagan and Palloni (1999) show that Hispanics are incarcerated at a higher rate than whites – which has often led people to believe that immigrants are more crime prone. However, they find that *foreign-born* Hispanics are actually less likely to be incarcerated, leading them to conclude that the immigration-crime link is “misleading, to the extent of constituting mythology” (Hagan and Palloni 1999:630).

Second, although few studies have examined how recent patterns of Hispanic immigration have influenced violent offending, there is growing evidence indicating that the

immigration *process* does not contribute to violence and may even have violence-reducing effects in Hispanic communities (Butcher and Piehl 1998b; Lee et al. 2001, Martinez 2000; Martinez et al. 2004; Nielsen et al. 2005; Sampson et al. 2005; Velez 2006). That is, immigration may not destabilize communities and lead to violence as argued by social disorganization theory.

For example, Lee et al. (2001) show that having high proportions of new immigrants had no significant effect on Latino homicides in San Diego and Miami neighborhoods and may have actually lowered homicide rates in El Paso neighborhoods. Martinez (2000) reports that immigration has no significant effect on either Latino or total homicide rates (also see, Martinez 2003). However, he notes that immigration effects vary across types of homicides and shows that immigration contributes to felony homicides but reduces acquaintance homicides among Latinos. In another study, Martinez et al. (2004) show that neighborhoods with large populations of recent immigrants are more likely to be involved in drug violence while communities with large, established immigrant populations are less likely to have drug violence. Sampson et al. (2005) show that immigrant concentration is strongly related to lower rates of violence and report that the odds of violence are four-fifths lower for individuals in neighborhoods with 40 percent immigrants compared to communities without any immigrants. Additionally, researchers provide further evidence against immigration-crime links by noting that Hispanic levels of violence have remained low and close to white rates of violence, even though Hispanic immigration has steadily increased during recent decades (Martinez and Lee 2000; Martinez 2002).

Researchers offer several arguments suggesting why new immigrants, including recent Hispanic immigrants, are not particularly crime prone (Hagan and Palloni 1999; Tonry 1997).

First, they explain that immigrants are rarely the poorest or most disadvantaged people from their native countries. In contrast, immigrants often have higher education levels and greater resources and human capital than the average individual from their homeland (Gonzalez 2000; Johnston et al. 1997). Second, immigrants are generally a self-selected set of highly-motivated, hard-working, dedicated individuals. Gaining entry to the U.S. can often be a difficult and strenuous process that requires determination, work, risk, and sacrifice. Many Hispanic immigrants have left behind family members, friends, and support networks to travel to the U.S. in search of opportunities. Thus, it is unlikely that immigrants would take such risks and undergo such hardships to gain entry into the U.S. and to gain access to employment and new opportunities only to risk these accomplishments by resorting to crime (Tonry 1997). Third, upon entering the country, Hispanic immigrants are typically accepting of conventional institutions (e.g., work, family, church) and mainstream American values (Tonry 1997). Research indicates that Hispanic immigrants are willing to work hard for success and the “American Dream” and often enter the U.S. specifically in search of employment and legitimate success opportunities. Thus, Hispanic immigrants are not likely to view crime as a viable pathway to success and are unlikely to support violence and crime in their communities.

Researchers also now suggest that the immigration process may have violence-reducing effects on communities. Rather than destabilizing a community as suggested by social disorganization theory, the community resource perspective argues that immigration may increase community stability and cohesion and strengthen social networks and ties (Healey 2006; Lee et al. 2001; Martinez and Lee 1998; 2000; Portes and Stepick 1993; Sampson and Bean 2006; Velez 2006). Drawing from the social capital perspective, researchers explain that Hispanic enclaves often have strong kinship bonds and social ties/networks that are based largely

on the shared heritage, language, and cultural background of residents. These networks act as support systems for new immigrants and provide resources and social capital to help protect community residents against crime, violence, and the crime-producing effects of disadvantage and poverty that are present in many Hispanic communities (Light and Gold 2000; Healey 2006; Lee et al. 2001; Martinez and Lee 2000; Nielsen et al. 2005).

Researchers argue that immigration helps strengthen these social ties/networks and support systems by reinforcing the common culture, heritage, and traditions that bond members of Hispanic enclaves. Each new wave of new immigrants provides Hispanic communities with a fresh infusion of shared heritage and culture that reinforces traditional values and norms of the Hispanic community and strengthens the sense of community and cohesion among residents (Martinez 2002; 2003; Healey 2006). Additionally, the kinship ties and support-networks are further strengthened due to frequent “chain migration,” in which new immigrants move into communities near their family members and friends and where they can receive support with childcare, employment, finances, and housing (Healey 2006; Martinez 2002; Martinez et al. 2004; Portes and Rumbaut 2006). Thus, immigration may not destabilize communities, but may instead help to solidify and stabilize Hispanic communities and ultimately reduce Hispanic violence by increasing social organization and strengthening social support/capital networks in Hispanic communities.

Additionally, research suggests that Hispanic immigration may strengthen conventional institutions, like the church and family, and may attract new resources into Hispanic communities. As new immigrants enter Hispanic enclaves and communities, they may draw resources and aid into the communities, which would benefit all residents (Martinez and Lee 1998; 2000; Portes and Stepick 1993). For example, because they are an attractive source of low

income labor to US employers, immigrants are likely to attract jobs to Hispanic communities and increase the employment potential for all community residents. Research also notes that Hispanic immigration may lead to construction of newer and bigger churches to accommodate the growing Hispanic population. Also, the importance placed on family and church in Hispanic communities is likely to increase as immigrants enter the community and reinforce these traditional values (Martinez and Lee 1998). Thus, traditional family structures and Hispanic attachment to the church and other conventional social institutions may be strengthened by immigration.

In sum, there is both a scarcity of research addressing the immigration-violence relationship for recent patterns of Hispanic immigration, as well as diverse, conflicting views about this relationship. Social disorganization theory and several other sociological theories of crime suggest that recent Hispanic immigration may lead to violence by destabilizing Hispanic communities. In contrast, some research finds that violence is less common among new Hispanic immigrants than among similarly-situated, native-born populations. Additionally, the community resource argument, drawn from the social capital perspective, provides a counterclaim to traditional social disorganization arguments and suggests that the immigration process does not disorganize communities and may actually reduce violence by stabilizing Hispanic enclaves.

A thorough review of research on immigration and crime revealed no studies that have simultaneously tested and compared the competing theories on immigration and violence (i.e., social disorganization vs. community resource perspectives) by examining the indirect effects of immigration on violence. That is, sociological research has only shown the *total effects* of immigration on violence and has not examined the *indirect processes and effects* by which

immigration influences violence. Thus, it is unclear whether immigration creates violence by disorganizing Hispanic communities or whether immigration has stabilizing, violence-reducing effects on Hispanic violence.

The current study marks the first attempts to (1) empirically test the competing hypotheses on the immigration-violence relationship – i.e., to examine whether (a) recent Hispanic immigration increases social disorganization and ultimately increases violence and/or (b) recent Hispanic immigration reduces violence by stabilizing Hispanic populations, increasing social support/capital, and strengthening conventional institutions, and (2) identify both the direct and indirect effects of immigration on violence.

DATA AND METHODS

To address these issues, I use information on Hispanic violence drawn from California Arrest Data (CAL) and New York State Arrest Data (NYSAD) for the 1999-2001 period. Information on the immigration patterns and structural conditions of Hispanic populations are drawn from 2000 U.S. Census data.

The unit of analysis is the *census place* (see Chapters 1 and 2 for more detailed discussions of census places). To ensure that measures of Hispanic violence and social structure are reliable, the analysis includes census places only if the place had at least 10,000 total residents and at least 1,000 Hispanic residents in the year 2000. The final sample includes 396 census places that met the selection criteria.

DEPENDENT VARIABLES

Data on Hispanic violent crime were drawn from the California Arrest Data (CAL) and the New York State Arrest Data (NYSAD), which provide individual-level arrest counts for a variety of offenses, disaggregated by race/ethnicity, age, gender, and arresting agency (see

Chapter 2 for further description of the CAL and NYSAD data). Hispanic counts of homicide and Violent Index arrests were drawn from these data and aggregated to the census place-level to measure levels of Hispanic violence. These arrest counts were then combined with year 2000 Hispanic population figures to create the dependent measures for the analysis: Hispanic arrest rates/100,000 for homicide and the Violent Index.

To minimize potential problems associated with using arrest data to measure race/ethnic patterns of violence, the current study focuses on index-violent offenses – which are considered “serious” offenses and are more reliably reported across demographic groups (Hindelang 1978; 1981; LaFree et al. 1992; Sampson 1987; Steffensmeier et al. 2005). Dependent measures were calculated using 3-year averaged arrest figures for the 1999-2001 period to add stability to violence measures and to ensure that the data included adequate arrest counts for statistically rare offenses (e.g. homicide). Additionally, all dependent measures received square root transformations to reduce positive skewness and impose normal distributions in the violence measures.

INDEPENDENT VARIABLES

The independent variables for this analysis are structural indicators of Hispanic social and economic well-being across California and New York census places, which are drawn from 2000 U.S. Census data – Summary Tape Files 1 and 4. The key explanatory variable in this analysis is *recent Hispanic immigration*, which is measured using the percentage of the Hispanic population in 2000 that is foreign-born and entered the U.S. between 1990 and 2000.

Prior research argues that immigration may contribute to violence indirectly by increasing social disorganization in Hispanic communities. Therefore, drawing from prior research and theory, the following variables are used as the traditional measures of social

disorganization of census places: *poverty*, *residential mobility*, *racial/ethnic heterogeneity*, and *language heterogeneity*. The measures for *poverty*, *residential mobility*, and *racial/ethnic heterogeneity* are described in Chapter 2. Also included in this analysis is a measure of the *language heterogeneity* of census places, which is calculated using a 2-group (English-only and Spanish-only speakers) entropy index:

$$E = \sum_{m=1}^M \pi_m \ln(1 / \pi_m)$$

where, π_m is the proportion of people who speak a language (e.g., Spanish or English only) and M is the number of languages (Reardon and Firebaugh 2002). The minimum language heterogeneity value approaches 0 when all residents speak either English or Spanish, while the maximum value is approximately .693 when a census place has an equal share of English-only and Spanish-only speakers.

The reader may recall that the community resource perspective provides a counterclaim to social disorganization arguments, which suggests that immigration reduces violence by strengthening social support/capital, key community institutions, and family structures in Hispanic communities. To capture these potential mediating effects, the analysis includes measures of *male unemployment*, *female-headed families with children*, and the *care burden* in Hispanic populations. The reader may refer to Chapter 2 (Table 2.1) for a description of measures for *unemployment* and *female-headed families with children*. The Hispanic *care burden* is included as an alternative measure of community social support and strain that is drawn from research on child abuse and demographic studies of gender, family, and crime (Schwartz 2006). The care burden is measured as the sum of children (0-12) and elderly (65+) per

100 Hispanic adults (21-64), where higher values reflect a greater potential burden/strain of caring for children and elders among the adult Hispanic population.¹⁷

This analysis also includes the following structural control variables, which are described in greater detail in Chapter 2 (Table 2.1): *young-male population*, *population size*, *population density*, and *state*. The predictors in this analysis were selected primarily based on theoretical considerations and practices of prior literature. However, potential collinearity problems were considered, and correlations among measures were closely examined when selecting independent variables. The final set of independent variables included in the analysis are correlated approximately below $r = .50$, with only one exception (see Table 4.2).¹⁸ Additionally, preliminary analyses revealed that estimated effects did not substantially change when predictors were added to models one at a time. Based on these observations, multicollinearity does not appear to be a serious concern in the analyses.

ANALYTIC PROCEDURES

Structural equation models are used to examine the impact of immigration on Hispanic violence. These models are particularly well-suited for this analysis because, unlike ordinary least squares regression, they allow easy estimation not only of direct effects, but also indirect and total effects of immigration on violence. Thus, structural equation models provide the most straightforward and efficient methods for empirically examining the process by which immigration influences violence and for testing the competing hypotheses described in the previous sections.

¹⁷ Research suggests that the *care burden* may also partially reflect an adult population's ability to monitor youth and exert informal social control in a community. However, the care burden's effect on violence is not expected to vary substantially regardless of its precise meaning.

¹⁸ Hispanic family structure and poverty measures are correlated at $r = .63$. Although it is stronger than the correlations among the other predictors, this correlation is below standard cut off points for collinearity in sociological research (e.g., $r > .80$). Additionally, as shown in Chapters 2 and 3, VIF values were below 4.0 for Hispanic models of violence that included these two measures. Thus, collinearity does not appear to be a critical concern for the models.

Figure 4.1 displays the key elements of the structural equation models. The straight arrow going from left to right between immigration and violence reflects a direct effect of immigration on Hispanic violence. The model also includes seven mediating or indirect effects between immigration and Hispanic violence. The short arrows branching out from the immigration variable show that immigration is used to predict the four traditional social disorganization measures (poverty, residential mobility, racial/ethnic heterogeneity, and language heterogeneity) as well as the three community resource measures (unemployment, family structure, and care burden). In turn, each of these mediators is included as a predictor of the Hispanic violence measures. Thus, the structural equation models test whether immigration influences violence indirectly through its effect on each of these seven structural factors. Additionally, the short, thick arrow from the control variable box (Figure 4.1, bottom left) indicates that the control measures are included as predictors for each of the mediators and for Hispanic violence measures. The structural equation models outlined in Figure 4.1 are estimated using AMOS, and the results are reported below (Arbuckle and Wothke 1999).¹⁹

RESULTS

DESCRIPTIVE STATISTICS

Table 4.1 provides descriptive statistics for the independent, mediating, and dependent variables for Hispanic census place-populations. To better situate these results, measures of violence and structural well-being for Hispanics are compared to white and black populations.²⁰

Turning first to the violence measures, Table 4.1 shows that Hispanic violence rates fall between

¹⁹ Exploratory factor analysis revealed that the social disorganization and community resource measures included in the analysis did not load cleanly onto separate factors. Thus, rather than forcing the variables into two latent factors, the seven mediators are entered into the model separately. This also provides the added advantage of showing whether the immigration-violence relationship is mediated only by certain aspects of social disorganization or social resources/support.

²⁰ Although these comparisons are similar to those reported in Chapter 2, the descriptive statistics include several new measures not included in previous chapters. In addition, the sample of census places used in this analysis is nearly twice as large (N = 396) as the samples from the previous two chapters (N = 234, approximately).

black and white rates. White arrest rates/100,000 are consistently the lowest among the three race/ethnic groups at approximately 2.8 for homicide and 338.3 for Violent Index crimes. In contrast, black rates are the highest for both violent offenses at 15.9 for homicide and 1306.3 for Violent Index arrests. Hispanic violence rates are lower than black rates and slightly higher than white rates at 6.5 for homicide and 527.5 for Violent Index offenses. Additionally, the standard deviations of the violence measures show that Hispanic violence varies substantially across census places. Ninety-five percent of the census places in the sample have Hispanic homicide rates ranging from approximately zero to 29/100,000 and Violent Index rates ranging from between zero to about 1,200/100,000.

Turning next to the independent variables, Table 4.1 provides information about the structural patterns of Hispanic populations and shows that the presence of recent immigrants is much greater among Hispanics than blacks or whites. On average, nearly 15 percent of the Hispanic population is comprised of foreign-born residents that entered the U.S. between 1990 and 2000, whereas new immigrants make up only about 2 to 3 percent of the black and white populations. The standard deviation (std. dev. = 9.14) for this measure also shows that Hispanic immigration varies widely across census places. Specifically, it indicates that the percentage of new immigrants in the Hispanic population is between 6 and 24 percent for two-thirds of the census places in the sample.

Table 4.1 also reveals several noteworthy patterns among the other structural measures. Hispanic populations have a slightly higher percentage of young males (9.5 percent) than the black (8.0 percent) or white (5.6 percent) populations. The standard deviation also shows that the relative size of the young male population varies slightly across the sample (std. dev. = 2.9). Poverty rates among Hispanics are higher than white poverty levels but are similar to black

poverty rates. Slightly more than 18 percent of Hispanics and blacks live below the poverty line, while only 8 percent of whites live in poverty. Additionally, Hispanic poverty varies widely across the sample (std. dev. = 9.9), with some census places having almost no poverty and many others having more than 30 percent of Hispanic residents living in poverty.

Hispanics and blacks also both experience high residential turnover, with more than 55 percent of Hispanic and black households experiencing a change in residents from 1995 to 2000. In contrast, only 44 percent of white households experienced a change in residents during this time. The standard deviation for the Hispanic residential mobility measure (std. dev. = 8.87) indicates that the percentage of Hispanic households experiencing turnover ranges from between 46 to 64 percent for approximately two-thirds of the sample.

The percentage of female-headed families with children is highest among blacks (23 percent) and lowest among whites (8 percent), with Hispanics falling between whites and blacks at 14 percent. Unemployment is least common among Hispanics compared to whites and blacks. Table 4.1 shows that 21 percent of Hispanic males are unemployed/not in the labor force, compared to 28 and 26 percent of blacks and whites respectively. Care burden values are similar across race/ethnicity, with Hispanics having a slightly greater burden of care (57.4) than whites (55.9) or blacks (54.5). As observed for the other predictors, the standard deviations indicate that there is wide variation in these structural measures across Hispanic populations. For two-thirds of the sample, (1) the Hispanic percentage of female-headed families with children ranges from 7 to 21 percent (std. dev. = 7.3), (2) the percentage of unemployed males in the Hispanic population ranges from between 14.5 and 27.5 percent (std. dev. = 6.5), and (3) care burden scores for the Hispanic populations range from about 43 to 71.

THE IMMIGRATION-VIOLENCE RELATIONSHIP

Bivariate Results

Table 4.2 displays the bivariate correlation matrix for measures of Hispanic violence and proxies of structural position. These bivariate results are used as an initial method to identify links between Hispanic immigration, mediating variables, and Hispanic violence. Turning first to the immigration-violence relationship, Table 4.2 shows that immigration is negatively correlated with both forms of violence (homicide, $r = -.05$; Violent Index, $r = -.12$). These findings indicate that Hispanic rates of violence tend to be lower in census places with higher levels of recent Hispanic immigration. Thus, the bivariate results provide some initial support for community resource/social capital arguments and indicate that Hispanic immigration *may* reduce Hispanic rates of violence. However, immigration is not the strongest predictor of Hispanic violence, based on the more sizable correlations between violence and other structural measures observed in Table 4.2.

Turning next to the traditional social disorganization measures, Table 4.2 reveals several important relationships between immigration, social disorganization measures, and Hispanic violence. The bivariate results show that social disorganization measures are all closely related to Hispanic violence. As expected, measures of Hispanic poverty, racial/ethnic heterogeneity, and language heterogeneity are all positively correlated with Hispanic homicide and Violent Index rates. This indicates that Hispanic violence is higher in census places with greater Hispanic poverty and greater racial/ethnic and language diversity. However, in contrast to traditional social disorganization arguments, residential mobility is negatively correlated with Hispanic violence measures, which indicates that Hispanic violence is lower in places with more Hispanic residential turnover.

Additionally, Hispanic immigration is closely linked to all four disorganization measures as expected. Specifically, Hispanic immigration is positively correlated with all of the social disorganization measures (e.g., poverty, racial/ethnic heterogeneity), which indicates that social disorganization is greater in areas with more Hispanic immigration. These findings support social disorganization arguments about the immigration-violence relationship and suggest that immigration indirectly increases violence by destabilizing Hispanic communities. That is, Hispanic immigration may increase social disorganization in Hispanic communities, and in turn, increases in social disorganization may lead to higher rates of Hispanic violence.

However, the bivariate results also provide some initial support for community resource arguments drawn from the social capital perspective. Table 4.2 shows that immigration is negatively correlated with the percentage of female-headed families with children ($r = -.15$), the percentage of unemployed males ($r = -.17$), and the care burden in Hispanic populations ($r = -.24$). This indicates that census places with high levels of Hispanic immigration have relatively fewer Hispanic families with single mothers, less Hispanic unemployment, and lower care burdens for dependents. The results show that these structural factors are also all positively related to Hispanic violence (with one exception for the family structure-Violent Index relationship, $r = -.015$). As expected, this suggests that Hispanic violence is higher in places with relatively more Hispanic female-headed families with children, unemployment, and a greater care burden. Thus, the bivariate findings provide some support for community resource/social capital arguments and suggest that immigration may also reduce violence indirectly by stabilizing Hispanic communities. That is, Hispanic immigration may reduce strains and strengthen social institutions in Hispanic communities, which may ultimately lead to lower rates of Hispanic violence. However, it is unclear whether these bivariate findings and effects persist

net of other structural controls. To provide more rigorous tests of these tentative conclusions, we turn next to the multivariate structural equation models.

Multivariate Results: Structural Equation Models

Table 4.3 provides the results of the structural equation models predicting Hispanic homicide and Violent Index rates. The first 7 columns in Table 4.3 reflect the first half of the structural equation models and show the standardized effects of the Hispanic immigration and control variables (e.g., population size, population density) on the mediating variables (e.g., % in poverty, residential mobility, family structure). The last 2 columns list the effects of the full set of independent and mediating variables on the measures of Hispanic violence. Although homicide and Violent Index rates were predicted in separate models, the results of these two models are shown in one table to ease presentation and interpretation of results. The effects of the independent variables on the mediating variables – i.e., the first 7 columns – were nearly identical in the homicide and Violent Index models, and therefore are reported only once based on the homicide model. The following paragraphs will first describe the direct effects of immigration (and controls) on Hispanic violence. The indirect effects of immigration on Hispanic violence will then be presented by showing how immigration influences mediating variables and in turn, how these mediators then influence Hispanic violence (see Figure 4.1 for graphical layout of predicted effects). Additionally, the indirect effects of immigration on violence are used to test and draw conclusions about traditional social disorganization theory and the community resource arguments about the immigration-violence relationship.

Direct Effects

The last 2 columns of Table 4.3 show the direct effects of the independent, control, and mediating variables on Hispanic violence. First, examining the effects of the control variables on

Hispanic violence, we find that the percentage of young males in the Hispanic population has no significant effect on Hispanic homicide. In contrast, the percentage of young, males has negative effects on Hispanic Violent Index rates, indicating that Hispanic violence is lower in places with relatively more Hispanic males in the population. Population size has positive effects on Hispanic homicide, indicating that Hispanic homicide is higher in places with larger populations. Additionally, the control for state shows that Hispanic homicide and Violent Index rates are lower in New York than in California census places.

Turning next to direct effects of immigration on violence, Table 4.3 shows that immigration does not directly contribute to Hispanic violence. The percentage of recent foreign-born arrivals in the Hispanic population has no significant direct effects on Hispanic homicide ($B = -0.004$) or Violent Index rates ($B = -0.003$). Thus, controlling for other structural conditions, immigration does not appear to influence Hispanic violence. However, although they do not reach significance, it is important to acknowledge the negative direction of these effects. Thus, in contrast to public perception, these results indicate that net of other structural factors, the immigration process does not have violence-generating effects and does not contribute to Hispanic violence.

However, the direct effects of immigration are only one part of the immigration-violence relationship. Immigration may influence violence through other structural factors and may have important indirect effects on violence that cannot be seen when one tests only for direct effects and when immigration is included as one of many predictors of Hispanic violence. Thus, the following paragraphs turn to examination of indirect effects of immigration on Hispanic violence.

Indirect Effects

As the reader may recall, researchers have proposed competing arguments about the indirect effects of immigration on violence. On one hand, the traditional social disorganization perspective suggests that Hispanic immigration may contribute to violence by increasing poverty, residential mobility, and heterogeneity in Hispanic communities (Lee et al. 2001; Martinez 2000; 2002; Martinez and Lee 2000; Nielsen et al. 2005; Shaw and McKay 1942). In contrast, the community resource approach drawn from the social capital perspective, posits that Hispanic immigration stabilizes Hispanic populations by strengthening family structure and kinship bonds, attachment to the labor force, and other forms of social support/capital (Lee et al. 2001; Martinez 2002; Martinez and Lee 1998; 2000; Martinez et al. 2004; Martinez and Nielsen 2006; Nielsen et al. 2005; Portes and Stepick 1993; Velez 2006). To address this debate and gain a more refined picture of the immigration-violence relationship, the following paragraphs describe the indirect effects of immigration on violence.

First, Table 4.3 (first 7 columns) shows that several of the control variables are related to the social disorganization and community resource/social capital measures. The results show that the presence of young males in the population contributes to Hispanic social disorganization. Specifically the percentage of young males has positive effects on Hispanic residential mobility and poverty rates, indicating that census places with relatively more young males in the Hispanic population have greater Hispanic residential mobility and poverty. The percentage of young males is also related to Hispanic community resource measures. The percentage of young males has positive effects on Hispanic rates of female-headed families and unemployment, which suggests that female-headed families and unemployment rates increase as the share of young

males in the Hispanic population increases. In contrast, the percentage of young males appears to reduce the Hispanic care burden.

The results suggest that population size increases racial/ethnic heterogeneity but has no effect on the other social disorganization variables or any of the community resource/capital measures (Table 4.3). Population density has mixed effects on both the social disorganization and community resource measures. Specifically, density contributes to Hispanic poverty, language heterogeneity, female-headed families, and unemployment, but appears to reduce residential mobility and the Hispanic care burden. In addition, the results suggest that social disorganization is greater and community resources and capital are lower for Hispanics in New York census places compared to California census places. That is, Hispanic poverty, residential mobility, the percentage of female-headed families, and unemployment are all greater for Hispanic populations in New York compared to California, while only language heterogeneity and the care burden have significantly lower values in New York census places.

Second, turning next to the immigration effects on the mediating variables, the results indicate that recent Hispanic immigration contributes to Hispanic social disorganization measures (Table 4.3, Columns 1-4). In support of traditional social disorganization arguments, the percentage of recent immigrants in the Hispanic population has positive and significant effects on Hispanic residential mobility ($B = 0.12, p < .05$), racial/ethnic heterogeneity ($B = 0.11, p < .05$), and language heterogeneity ($B = 0.38, p < .001$). Additionally, the standardized coefficients in Table 4.3 reveal that immigration contributes particularly heavily to the language heterogeneity of census places. In contrast, the relative size of the immigrant population has no noticeable effect on poverty rates among Hispanic populations. Overall, these results support traditional social disorganization arguments and suggest that immigration increases the

population turnover and heterogeneity (racial/ethnic and language) of census places. Thus, the findings suggest that immigration has potentially destabilizing and disorganizing effects on Hispanic populations.

Additionally, several of these social disorganization measures appear to influence Hispanic violence. The last 2 columns of Table 4.3 show that, as predicted, poverty has significant, positive effects on Hispanic homicide ($B = 0.16, p < .01$) and Violent Index rates ($B = 0.27, p < .001$), which suggests that Hispanic poverty contributes to Hispanic violence. Language heterogeneity has significant, positive effects on both forms of Hispanic violence, which suggests that Hispanic violence increases as the language heterogeneity of census places increases. In contrast, residential mobility appears to reduce Hispanic homicide and has no significant effect on Hispanic Violent Index rates. Additionally, racial/ethnic heterogeneity has no significant effects on Hispanic violence. Thus, in support of traditional social disorganization arguments, poverty and language heterogeneity both appear to contribute to several forms of Hispanic violence. Furthermore, because immigration contributes to several of the social disorganization measures, these findings also suggest that immigration has indirect effects on violence – i.e., that immigration contributes to violence indirectly by increasing social disorganization and destabilizing Hispanic communities.²¹

To better illustrate the indirect effects of immigration on violence, Table 4.4 lists the effects of Hispanic immigration on each mediating variable and then shows the effects of the mediators on Hispanic rates of violence.²² As noted above, Table 4.4 shows that recent Hispanic immigration increases language heterogeneity, which in turn contributes to Hispanic homicide

²¹ In supplemental analyses, an alternative entropy index that includes whites, blacks, Hispanics, and “all other race/ethnicities” was used to estimate the effects of immigration on racial/ethnic heterogeneity and the effects of racial/ethnic heterogeneity on both forms of violence for Hispanics (results not shown). The supplemental results were nearly identical to the results described above.

²² For similar strategies for identifying and illustrating indirect effects, see Guo and Harris (2000).

and Violent Index rates. As discussed earlier, Hispanic immigration also contributes to racial/ethnic heterogeneity and residential mobility. However, these variables have little effect on violence and in contrast to social disorganization arguments, residential mobility appears to reduce Hispanic homicide. Table 4.4 (top 2 rows) also combines these indirect effects to show exactly how much immigration influences violence through the combined set of social disorganization measures. These findings show that through the combined set of social disorganization measures, immigration has positive indirect effects on Hispanic homicide ($B = 0.045$) and Violent index rates ($B = 0.046$). Thus, the results from Table 4.4 provide some additional support for social disorganization arguments and suggest that immigration indirectly increases violence by disorganizing Hispanic communities and primarily by increasing the language heterogeneity of census places.

Third, in contrast to these findings, the results also support community resource arguments drawn from the social capital perspective, which posit that immigration has stabilizing, violence-reducing effects on Hispanic populations. The findings show that recent immigration strengthens several important social institutions and sources of resources and support in Hispanic populations. Table 4.3 (columns 5-7) shows that the percentage of recent Hispanic immigrants has significant negative effects on the percentage of female-headed families with children ($B = -0.31, p < .001$), the percentage of unemployed males ($B = -0.32, p < .001$), and the burden of care ($B = -0.15, p < .01$) in Hispanic populations. This indicates that places with higher immigration tend to have relatively fewer Hispanic female-headed families with children, unemployed males, and a lower Hispanic burden of care for dependents. Thus, the findings suggest that Hispanic immigration has some stabilizing effects on Hispanic populations and especially on Hispanic family structure and employment.

Additionally, the results indicate that several of the structural measures drawn from the community resource perspective are related to Hispanic violence. The last 2 columns of Table 4.3 show that the percentage of Hispanic female-headed families with children has significant, positive effects on Hispanic homicide ($B = 0.16, p < .01$) and Violent Index rates ($B = .08, p < .05$), which suggests that the percentage of female-headed Hispanic families contributes to Hispanic violence. The Hispanic care burden is also positively related to Hispanic Violent Index offending ($B = .10, p < .01$), indicating that Hispanic violence is higher in places with a greater burden of care placed on Hispanic residents. Thus, the findings provide some support for the community resource argument and show that the care burden and especially the presence of female-headed families contribute to Hispanic violence. Additionally, because immigration contributes to these community resource measures, the findings again suggest that immigration has indirect effects on violence. However, instead of contributing to violence, the community resource effects suggest that immigration reduces violence indirectly by strengthening social institutions and support systems and by stabilizing Hispanic communities.

To further illustrate these indirect effects of immigration on violence, we again turn to Table 4.4. As noted above, Table 4.4 shows that recent Hispanic immigration decreases all of the community resource measures (i.e., female-headed families, unemployment, care burden). In turn, female-headed families contribute to both forms of Hispanic violence, and the Hispanic care burden contributes to Violent Index rates. Thus, the results suggest that immigration indirectly decreases violence by strengthening Hispanic family structure and reducing the burden of care. Table 4.4 (top 2 rows) also combines the indirect effects to show how much immigration influences violence through the full set of community resource measures. Through these three combined community resource measures, immigration has negative indirect effects

on Hispanic homicide ($B = -0.080$) and Violent Index rates ($B = -0.052$). Thus, the findings in Table 4.4 provide further support for community resource arguments drawn from the social capital perspective and suggest that immigration indirectly reduces violence by stabilizing Hispanic communities and mostly by decreasing the percentage of female-headed Hispanic families.

In sum, the results support both the traditional social disorganization and community resource arguments on the immigration-violence relationship and show that immigration has multiple, countervailing indirect effects on violence. Table 4.4 shows that the violence-generating effects of immigration that work through social disorganization measures are offset by the violence-reducing effects of immigration that operate through social support/capital measures. For example, the standardized, positive indirect effects of immigration on Hispanic homicide that work through social disorganization ($B = 0.045$) are washed out by the indirect community resource effects on Hispanic homicide ($B = -0.080$). As noted earlier, Table 4.4 also shows that immigration has little direct effect on Hispanic violence measures. Combining the indirect (social disorganization and community resource) and direct effects reveals that immigration has little *total* effect on Hispanic homicide ($B = -0.039$) or Violent Index rates ($B = -0.009$). Thus, due to the offsetting indirect effects of immigration on violence, the results provide little evidence that immigration contributes to violence. Instead, immigration has an overall negligible effect on violence and does not strongly support violence-generating or violence-reducing arguments about the effects of immigration.

DISCUSSION AND CONCLUSION

In recent decades, the U.S. has experienced a growing trend in Hispanic and especially Mexican immigration. Due in part to these immigration patterns, Hispanics have now become

the largest and fastest growing minority group in the U.S. (Healey 2006; U.S. Census Bureau 2005; Pew Hispanic Center 2006a; 2006b). Sociological and criminological research has yet to fully explore the impact of these immigration patterns on social structure and Hispanic violence. Additionally, prior research and theory on crime offer conflicting ideas on the immigration-violence relationship. Key criminological theories, such as social disorganization theory, argue that increases in Hispanic immigration may disorganize and destabilize Hispanic communities and ultimately increase crime (Lee et al. 2001; Martinez 2000; 2002; Martinez and Lee 2000; Nielsen et al. 2005; Shaw and McKay 1942). However, research also suggests that violence is less common among immigrants compared to similarly-situated native-born populations. Additionally, researchers drawing from social capital perspectives have presented a counterclaim to social disorganization arguments, referred to here as the community resource perspective, which suggests that immigration has stabilizing effects on communities and provides protective benefits and resources to community residents (Butcher and Piehl 1998a; 1998b; Hagan and Palloni 1999; Lee et al. 2001; Martinez 2000; 2002; Martinez and Lee 1998; 2000; Nielsen et al. 2005; Sampson et al. 2005; Velez 2006). Instead of increasing violence, the community resource approach argues that immigration may reduce violence by strengthening community cohesion, social and familial bonds, community institutions, and social support/capital networks in Hispanic communities.

This chapter addresses the immigration-violence debate by examining both the direct and indirect effects of Hispanic immigration on Hispanic violence and by testing the competing *social disorganization* versus *community resource* hypotheses. The results indicate that recent patterns of Hispanic immigration have several noteworthy effects on Hispanic violence (homicide and Violent Index rates). First, immigration appears to have little direct effect on

Hispanic homicide or Violent Index rates. Second, the results also show that immigration has several *indirect* effects on Hispanic violence that work through both social disorganization and community resource measures. However, these indirect effects are opposing and largely offset one another. The percentage of recent immigrants contributes to Hispanic violence by increasing social disorganization measures and especially by increasing language heterogeneity. Simultaneously, immigration also appears to reduce violence indirectly by strengthening Hispanic social institutions and support/capital – i.e., by reducing the presence of female-headed families and the burden of care among Hispanic populations. Third, combining these direct and indirect effects reveals that immigration has *little total effect* on Hispanic violence (Note: What effect does exist is negative in direction – suggesting at a minimum that immigration does not lead to higher violence rates, at least in the short run). Thus, the results suggest that immigration does not contribute to Hispanic violence and does not appear to be a key part of the violence-generating process for Hispanics.

These findings provide several important implications and make several key contributions to research on immigration and violence. First, in contrast to public perception, this research indicates that immigration is not a key source of Hispanic violence. Claims that recent trends in Hispanic immigration have sparked increased violence and that immigrants are turning their communities into “zones of lawlessness” receive no support from these results (as for example, Horowitz 2001:8). Thus, fears of immigration-generated waves of Hispanic violence seem unlikely based on these results. Furthermore, the results suggest that policies and legislation aimed at reducing immigration may do little to reduce Hispanic violence.

Second, these findings help extend our understanding of the processes by which immigration influences violence and provide important implications for both social

disorganization and social support/capital explanations of the immigration-violence relationship. The indirect effects reported above provide some insight on the immigration-violence debate and show that both the social disorganization and community resource/social capital arguments are supported. The analysis shows that immigration does not appear to have one direct pathway to influencing violence. As argued by social disorganization theory, immigration appears to have some disorganizing, destabilizing effects on Hispanic communities (e.g., increased language heterogeneity) that contribute to violence. But at the same time, immigration reduces violence by stabilizing and strengthening Hispanic institutions and social support/capital frameworks (e.g., family structure, employment, and ability to care for dependents). Although these effects largely neutralize one another and result in little overall effect of immigration on violence, their presence indicates that both the social disorganization and the community resource arguments about the immigration-violence relationship are supported. This suggests that immigration-violence research should consider both social disorganization and community resource/social capital arguments and should continue to examine both the potential stabilizing and destabilizing effects of immigration on Hispanic communities and violence.

Third, this analysis illustrates the need to examine both the direct and indirect effects of immigration on violence. Prior research has typically only examined the direct effects of immigration on violence, controlling for other structural factors (Lee et al. 2001; Martinez 2000; Nielsen et al 2005; Sampson et al. 2005). However, as shown here, the direct effects are only part of the immigration-violence relationship. By ignoring the indirect and total effects of immigration on violence, research is likely to overlook important nuances of the immigration-violence relationship.

Although this study offers several important findings and provides the first examination of indirect effects of immigration on violence, several caveats must be acknowledged. First, as in most macro-level studies of crime, independent and mediating variables measuring immigration, social disorganization, social support/capital, and other structural factors were limited to measures available from U.S. Census Data. Thus, the predictors and mediators may not perfectly capture the processes of immigration, social disorganization, and social support/capital. The immigration and social disorganization measures used in this chapter (i.e., percentage foreign-born Hispanics that entered the U.S. between 1990 and 2000, poverty, residential mobility, heterogeneity) are well established measures that have frequently been used in prior research and therefore, should not be a critical concern (Lee et al. 2001; Nielsen et al. 2005; Osgood and Chambers 2000; Sampson and Groves 1989; Silver and Miller 2004; Warner and Pierce 1993). However, social support/capital concepts that inspired the community resource arguments are particularly difficult concepts to measure in aggregate-level studies of crime (Silver 2000; Kubrin and Weitzer 2003; Peterson and Krivo 2005; Velez 2006).

The measures representing the community resource argument were selected based on arguments in prior research that immigration strengthens family structure, support systems, and labor force participation in Hispanic communities (Martinez 2000; 2002 Martinez and Lee 1998; 2000; Lee et al. 2001; Nielsen et al. 2005; Velez 2006). However, there are many other potential forms of social capital and social support that may mediate the immigration-violence relationship. Researchers suggest that the immigration-violence relationship is mediated by extended family ties and by religious beliefs and participation. Thus, future research should examine whether these forms of social capital mediate the immigration-violence relationship. To further address community resource/social capital arguments, future research should also

examine how immigration influences social networks and factors like collective efficacy within Hispanic neighborhoods and whether these factors mediate the immigration-violence relationship (Morenoff et al. 2001).

Second, as characterizes most prior research, this study relies on cross-sectional data to examine the immigration-violence relationship. As a result, it is more difficult to establish the direction of effects between variables, particularly between immigration and mediating factors such as poverty and unemployment. This potential problem is reduced by using an immigration measure that reflects immigration patterns for the prior 10 year period (1990-2000). However, to better establish the effects of immigration on violence and to reveal any potential reciprocal effects or selection effects, there is also a need for future research that employs longitudinal data to examine immigration and violence.

Third, although social disorganization and the community resource factors are modeled as separate and distinct characteristics of Hispanic populations, these factors are likely to overlap and may influence each other. In preliminary analyses, several models were estimated in which social disorganization measures and community resource measures were permitted to influence each other. These effects did not substantially improve the fit of the structural equation models and did not change the substantive findings of the analysis. However, future research may wish to further explore the connections between these mediating processes in the immigration-violence relationship.

Table 4.1. Means and Standard Deviations for Hispanic Independent and Dependent Variables

VARIABLES	HISPANIC		BLACK	WHITE
	Mean	Std. Dev.	Mean	Mean
Dependent - (arrest rates/100,000)				
Homicide	6.53	11.23	15.87	2.82
<i>Homicide (sq. root)</i>	1.77	1.85	2.62	1.15
Robbery	73.14	74.97	322.83	33.11
<i>Robbery (sq. root)</i>	7.55	4.03	16.66	5.14
Violent Index	527.45	345.39	1306.28	338.27
<i>Violent Index (sq. root)</i>	21.31	8.56	34.23	17.27
Independent				
% Foreign-Born 1990-2000	14.80	9.14	2.55	2.00
% Males Age 15-24	9.47	2.90	7.95	5.59
Total Population Size	95635.08	283906.98	95635.08	95635.08
Density (people/sq. mile)	5148.28	5321.91	5148.28	5148.28
New York	0.19	0.39	0.19	0.19
Social Disorganization				
% in Poverty	18.38	9.90	18.65	8.40
Residential Mobility	55.32	8.87	56.41	43.80
Racial/Ethnic Heterogeneity	0.63	0.26	0.63	0.63
Language Heterogeneity	0.32	0.15	0.32	0.32
Community Resource/Social Capital				
% Female Headed Families with Children	14.02	7.25	23.15	8.02
% Unemployed Males	21.00	6.57	28.25	25.69
Burden of Care	57.41	13.95	54.54	55.90

N = 396

Table 4.2. Correlations of Dependent and Independent Variables for the Hispanic Population

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Hispanic Homicide Rate	1.000													
2. Hispanic Violent Index Rate	0.447	1.000												
3. % Foreign Born	-0.051	-0.115	1.000											
4. % Males Age 15-24	-0.053	-0.086	0.305	1.000										
5. Total Population	0.215	0.076	0.030	-0.079	1.000									
6. Population Density	0.166	0.060	0.160	-0.080	0.389	1.000								
7. State (New York = 1)	-0.207	-0.674	0.184	0.110	0.006	0.085	1.000							
8. % in Poverty	0.233	0.240	0.138	0.288	0.047	0.110	0.202	1.000						
9. Residential Mobility	-0.105	-0.020	0.181	0.338	-0.042	-0.244	0.145	0.361	1.000					
10. Racial/Ethnic Heterogeneity	0.185	0.136	0.132	0.091	0.389	0.106	-0.004	0.106	0.046	1.000				
11. Language Heterogeneity	0.293	0.400	0.358	0.060	0.128	0.325	-0.311	0.215	-0.297	0.260	1.000			
12. % Female Headed Families	0.131	-0.015	-0.146	0.162	0.073	0.110	0.402	0.634	0.386	0.099	-0.177	1.000		
13. % Unemployed Males	0.181	0.040	-0.172	0.159	0.047	0.077	0.259	0.502	0.001	0.118	0.067	0.426	1.000	
14. Care Burden	0.235	0.441	-0.240	-0.192	0.026	-0.119	-0.234	0.408	0.070	0.130	0.233	0.206	0.235	1.000

Table 4.3 Standardized Coefficients for the Structural Equation Model Predicting Hispanic Violence ^{a,b}

Variables	SOCIAL DISORGANIZATION				COMMUNITY RESOURCE			Homicide	Robbery	Violent Index
	Residential Mobility	% Poverty	Racial/Ethnic Heterogeneity	Language Heterogeneity	Female-Headed Families	Unemployment	Care Burden			
% Foreign-Born 1990-2000	0.12 *	0.01	0.11 *	0.38 ***	-0.31 ***	-0.32 ***	-0.15 **	-0.004	-0.13 *	-0.003
Controls										
% Male 15-29	0.27 ***	0.28 ***	0.09	0.01	0.23 ***	0.24 ***	-0.13 **	-0.07	-0.18 ***	-0.099 **
Total Population Size	0.09	0.02	0.41 ***	0.00	0.05	0.02	0.06	0.14 **	0.12 *	-0.007
Density (people/sq. mile)	-0.29 ***	0.11 *	-0.07	0.30 ***	0.12 **	0.11 *	-0.12 *	0.01	0.21 ***	0.06
State (New York)	0.12 *	0.16 ***	-0.03	-0.41 ***	0.42 ***	0.28 ***	-0.18 ***	-0.26 ***	-0.41 ***	-0.737 ***
Social Disorganization										
Residential Mobility	-	-	-	-	-	-	-	-0.12 *	0.04	0.022
% in Poverty	-	-	-	-	-	-	-	0.16 **	0.07	0.273 ***
Racial/Ethnic Heterogeneity	-	-	-	-	-	-	-	0.07	0.04	0.063
Language Heterogeneity	-	-	-	-	-	-	-	0.14 *	0.14 *	0.093 *
Community Resource										
Female Headed Families	-	-	-	-	-	-	-	0.16 **	0.15 **	0.084 *
% Unemployed Males	-	-	-	-	-	-	-	0.09	0.05	0.032
Care Burden	-	-	-	-	-	-	-	0.01	-0.05	0.104 **
Fit Indices										
GFI	-	-	-	-	-	-	-	0.89	0.85	0.89
NFI	-	-	-	-	-	-	-	0.96	0.96	0.96
IFI	-	-	-	-	-	-	-	0.96	0.96	0.96
CFI	-	-	-	-	-	-	-	0.96	0.96	0.96
R ²	0.20	0.13	0.18	0.36	0.27	0.17	0.12	0.20	0.34	0.62

N = 396 * p<.05 ** p<.01 *** p<.001

a. Homicide, Robbery, and Violent Index are predicted in 3 separate models. The effects of immigration and the controls on the mediators are reported only once because they did not change across models.

b. Correlations are estimated for all exogenous predictors to account for unobserved shared association among predictors and to improve model fit.

Table 4.4 Direct, Indirect, and Total Effects of Immigration on Hispanic Homicide and Violent Index Arrest Rates

	DIRECT EFFECT	INDIRECT EFFECTS Through Soc. Disorg.	INDIRECT EFFECTS Through Community Resource	TOTAL IMMIGRATION EFFECT
% Foreign-Born 1990-2000 → Homicide	-0.004	0.045	-0.080	-0.039
% Foreign-Born 1990-2000 → Violent Index	-0.003	0.046	-0.052	-0.009

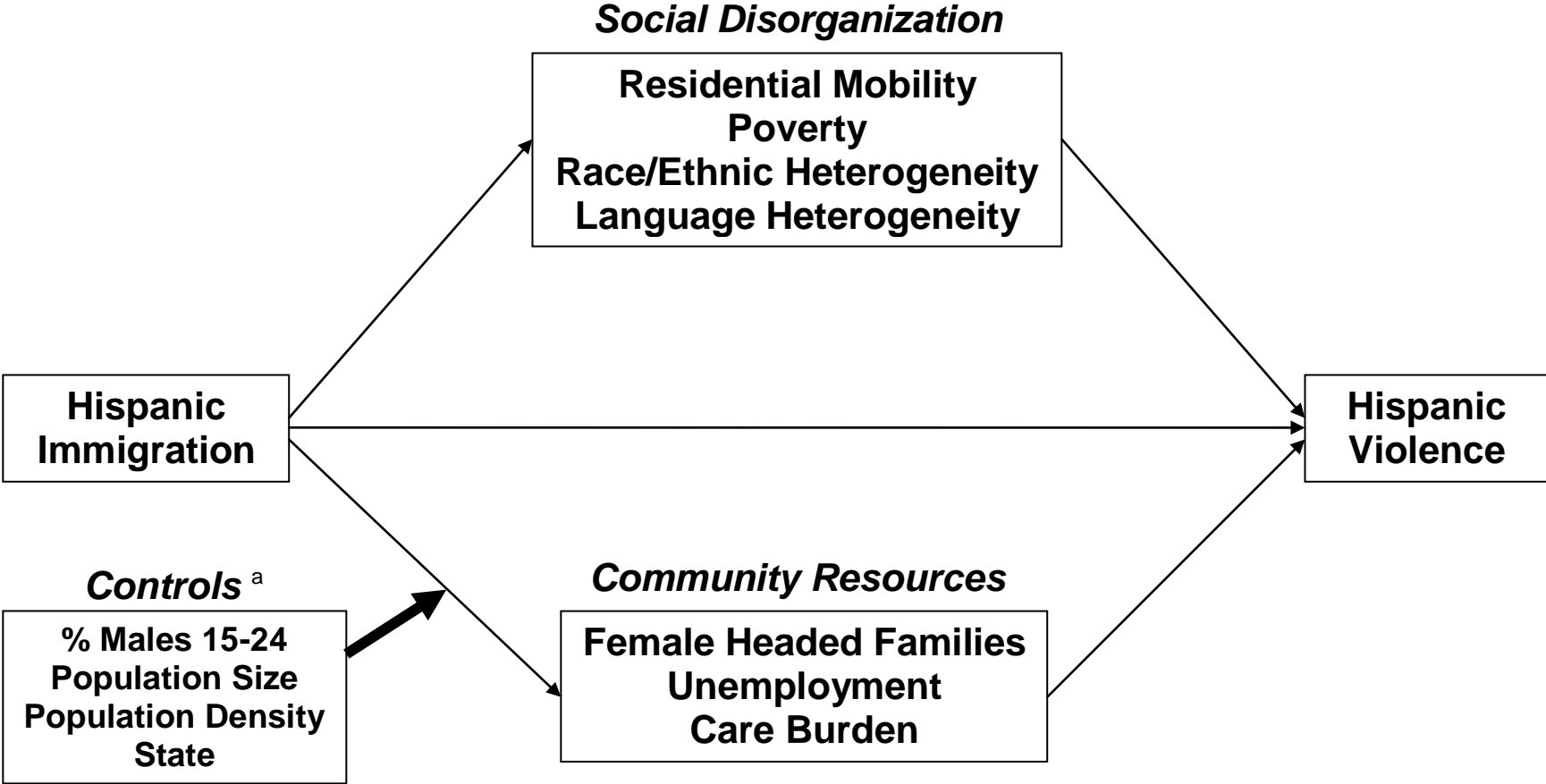
Standardized Effects of Hispanic Immigration on Mediating Variables and Effects of Mediating Variables on Hispanic Violence

% Foreign-Born 1990-2000	→	Mediator	→	Homicide
0.12	*	Residential Mobility		-0.12 *
0.01		Poverty		0.16 **
0.11	*	Racial/Ethnic Heterogeneity		0.07
0.38	***	Language Heterogeneity		0.14 *
-0.31	***	Female-Headed Families		0.16 **
-0.32	***	Unemployment		0.09
-0.15	**	Care Burden		0.01

% Foreign-Born 1990-2000	→	Mediator	→	Violent Index
0.12	*	Residential Mobility		0.02
0.01		Poverty		0.27 ***
0.11	*	Racial/Ethnic Heterogeneity		0.06
0.38	***	Language Heterogeneity		0.09 *
-0.31	***	Female-Headed Families		0.08 *
-0.32	***	Unemployment		0.03
-0.15	**	Care Burden		0.10 **

N = 396 * $p < .05$ ** $p < .01$ *** $p < .001$

Figure 4.1. Structural Equation Model for the Direct and Indirect Effects of Immigration on Hispanic Violence



Note: Social disorganization, social support/capital, and control variables are all measured, entered, and predicted separately. Latent factors are not used to predict Hispanic violence.

a. The full set of control variables is used to predict all Hispanic violence and all mediating variables (e.g., poverty, residential mobility, unemployment).

CHAPTER 5:

SUMMARY AND DISCUSSION

Research on race/ethnicity, social structure, and violence has a long-standing tradition in sociological and criminological research. Ecological studies of crime have often shown that racial/ethnic patterns and trends in violence are shaped by differences in poverty, disadvantage, and other structural conditions. However, a critical limitation of this research is that it has focused almost exclusively on black-white comparisons and has overlooked Hispanics and other race/ethnic groups. Additionally, ecological studies on the race/ethnicity-violence relationship have been limited in that they (a) continue to debate whether the structural sources of violence are “racially invariant” and (b) have focused on the effects of disadvantage while often overlooking how segregation, immigration, and other structural factors influence violence across race/ethnic groups.

The primary objective of this research has been to expand ecological and structural research on race/ethnicity and violence by examining the structural sources of Hispanic violence – both alone and compared to whites and blacks. This dissertation sought to address the limitations of prior research identified above by addressing three questions about the relationship between race/ethnicity, social structure, and violence:

1. whether the structural sources of violence are similar or “racially invariant” for whites blacks, *and Hispanics*; and whether support for racial invariance arguments depends on how invariance is defined,
2. whether racial/ethnic residential segregation contributes to black and Hispanic violence and whether the effects of segregation are invariant across race/ethnicity.
3. whether immigration stabilizes/destabilizes Hispanic communities and ultimately influences Hispanic violence.

To address these questions, I used arrest data and measures of social structure for whites, blacks, and Hispanics for more than 200 census places across California and New York during the 1999 to 2001 period. Data on white, black, and Hispanic violent crime were drawn from the California Arrest Data (CAL) and the New York State Arrest Data (NYSAD), which provide individual-level arrest counts for a variety of offenses, disaggregated by race/ethnicity, age, gender, and arresting agency. These data were aggregated to the census place-level and were combined with year 2000 population figures for each census place (U.S. Census Bureau – STF 4) to create the dependent measures for the analysis: white, black, and Hispanics homicide and Violent Index rates/100,000. Race/ethnicity-specific measures of social structure (e.g., measures of structural disadvantage, racial/ethnic segregation, immigration) served as the independent variables and were drawn from 2000 U.S. Census data for each race/ethnic group at the census place-level. Seemingly Unrelated Regression techniques were used to test the racial invariance hypothesis and examine whether structural factors had significantly different effects on violence across race/ethnic groups. Additionally, structural equation modeling techniques were used to identify the total, direct, and indirect effects of immigration on Hispanic violence.

Key findings from the analyses are summarized in Table 5.1 and in a chapter-by-chapter description in the following paragraphs. Chapter 2 tested the racial invariance hypothesis and compared the structural predictors of violence for blacks, whites, and Hispanics to discern whether the structural sources of violence, and especially the effects of disadvantage on violence, are similar across race/ethnic groups. The findings from Chapter 2 provide mixed support for the “racial invariance” hypothesis, depending on how it is defined. The results provide almost no support for *narrowly-defined* interpretations of racial invariance and show that the particular structural predictors of violence (e.g., poverty, unemployment, family structure) and the

magnitudes of structural effects on violence vary substantially across race/ethnic groups. However, *broadly-defined* interpretations of the racial invariance hypothesis receive some support. That is, the findings show that structural disadvantage generally contributes to violence and appears to be a key component of the violence-generating process for whites, blacks, and Hispanics. Additionally, Chapter 2 provides mixed support for social capital and ethnic economies arguments that suggest that Hispanics are protected or insulated from the violence-generating effects of disadvantage. The results show that disadvantage has weaker effects on homicide for Hispanics than for blacks but similar effects on black and Hispanic Violent Index rates. In sum, Chapter 2 provides some support for racial invariance arguments, but only if one uses the broadest interpretation of “invariance” and focuses solely on whether structural disadvantage contributes to violence for blacks, whites, and Hispanics.

Chapter 3 extends research on race/ethnic segregation and violence and also contributes to racial invariance literature by comparing the effects of racial/ethnic segregation on black and Hispanic violence. The findings show that Hispanic isolation (from whites and from all other race/ethnic groups) contributes to both Hispanic homicide and Violent Index rates. Segregation also contributes to black homicide, but segregation appears to actually reduce black Violent Index rates. The results also suggest that concentrated disadvantage mediates the effects of racial/ethnic isolation on both Hispanic and black violence. That is, segregation appears to indirectly contribute to black and Hispanic violence by increasing concentrated disadvantage. Additionally, Chapter 3 provides mixed support for the racial invariance assumption and shows that racial/ethnic isolation and concentrated disadvantage have similar effects on black and Hispanic homicide but different effects on Violent Index rates across race/ethnicity. Racial/ethnic isolation appears to contribute to Violent Index rates more strongly for Hispanics

than blacks, while concentrated disadvantage contributes to black violence more than Hispanic violence. Thus, Chapter 3 indicates that racial/ethnic segregation is a social problem that extends beyond black communities and suggests that racial/ethnic isolation is a key part of the violence-generating process for Hispanics.

Chapter 4 focused on the impact of immigration on Hispanic homicide and Violent Index rates. In particular, Chapter 4 addressed the immigration-violence debate by examining both the direct and indirect effects of recent immigration on Hispanic violence and by testing the competing *social disorganization* versus *community resource* hypotheses. The results indicate that immigration has almost no *direct* effect on Hispanic homicide or Violent Index rates. However, immigration appears to have multiple, offsetting *indirect* effects on Hispanic violence that work through social disorganization and community resource/social capital measures. Specifically, the percentage of recent immigrants contributes to Hispanic homicide and Violent Index rates by increasing social disorganization and especially by increasing language heterogeneity among Hispanic populations. Simultaneously, immigration also appears to reduce violence by strengthening Hispanic social institutions and support/capital – i.e., by reducing the presence of female-headed families and the burden of care among Hispanic populations. The combination of these direct and indirect effects shows that immigration has little *total* effect on Hispanic violence. In addition, when effects are observed they are slightly negative, indicating that immigration may slightly reduce Hispanic violence. Thus, the results of Chapter 4 suggest that immigration does not contribute to Hispanic violence.

This dissertation makes several key contributions to research on race/ethnicity, social structure, and violence and also highlights several important gaps in research on race/ethnicity and crime. First, although there appear to be differences in the violence-generating process

across race/ethnic groups, questions remain about the sources of these variations. Why does disadvantage have stronger effects on violence for blacks than for Hispanics and whites, and why does segregation have different effects on black and Hispanic violence? Research suggests that kinship bonds and social capital networks may shape the way that structural factors influence violence across race/ethnic groups. Thus, strong social support and social capital/kinship networks may help protect Hispanics and whites from the violence-generating effects of disadvantage (Martinez 2003; Martinez and Nielsen 2006; Velez 2006). Additionally, research suggests that immigration may contribute to social capital networks and provide a buffer against violence in Hispanic populations (Martinez 2000; 2002; Martinez and Lee 1998; 2000; Lee et al 2001; Nielsen et al. 2005; Sampson and Bean 2006; Velez 2006).

The findings from this project provide some support for these arguments, but the evidence offered is largely indirect. Additional research is needed that directly examines and measures social capital, support networks, kinship ties, and participation in ethnic economies to identify how these factors influence violence and shape the impact of structural factors on violence across race/ethnic groups. However, obtaining such measures is often difficult at the city, county, and census place-levels due to the limitations of census data. Such analyses would likely require neighborhood-level data on black, white, and Hispanic violence and social structure (Kubrin and Weitzer 2003). Thus, future neighborhood-level studies of race/ethnicity and violence may be particularly well-suited to address these questions and examine how social capital, kinship networks, and ethnic economies influence the social structure-violence relationship across race/ethnic groups. However, because violent crime and especially homicides are rare events, obtaining neighborhood-level measures of serious violence may prove difficult.

Second, this project addresses whether structural factors have similar/different *effects* on violence across race/ethnicity, but further research is needed that predicts racial/ethnic *gaps* in violence. There are relatively few studies that examine how structural factors influence racial/ethnic gaps in violence. Velez et al. (2003) and Phillips (2002) provide two of the only studies that directly examine how racial/ethnic differences in social structure influence racial/ethnic differences in violence. Additionally, Phillips (2002) is the only study that examines the structural sources of Hispanic-white and Hispanic-black gaps in violence. This oversight is particularly noteworthy because, as shown here, Hispanic communities face similar levels of disadvantage as black populations but typically have lower rates of violence. Thus, there is a great need for research that identifies the structural sources of racial and ethnic disparities in violence, especially involving Hispanic populations.

Third, as discussed in Chapter 3, it is unclear why segregation has stronger effects on violence for Hispanics than for blacks. Social capital and ethnic economy perspectives suggest that strong support networks and active ethnic economies should provide Hispanics with some protection from the effects of segregation. Additionally, research argues that Hispanic-white segregation is not as concentrated as black-white segregation and occurs in part due to the formation of Hispanic enclaves. Based on these arguments, one would expect segregation to have either similar or possibly weaker effects on Hispanic than on black violence. Thus, further research is needed to identify why segregation is more strongly linked to Hispanic than to black violence.

Fourth, as characterizes most prior research, this project relies on cross-sectional data to examine the relationships between race/ethnicity, social structure, and violence. Thus, there is also a need for research that employs longitudinal data, which are particularly useful for

establishing the direction of effects between structural factors and violence and also for identifying indirect effects and reciprocal effects between structural factors and violence. Thus, although such data may not be easily accessible, use of longitudinal data on crime and social structure disaggregated by race/ethnicity would be advantageous in future studies of race/ethnicity and violence.

Last, future research on race/ethnicity, social structure, and violence should continue to expand its scope to include other race/ethnic groups, offenses, and locations. As illustrated in this project, it is important for future research to focus more heavily on Hispanic violence and to continue to move beyond black-white comparisons to include other race/ethnic groups, such as Asian/Pacific Islanders and Native Americans. There is also a need to examine how structural factors influence violence across the diverse set of “Hispanic” subgroups (e.g., Mexican, Cuban, Puerto Rican). Almost all racial invariance studies and the majority of research on race/ethnicity and crime have focused on violent offending. Thus, future analyses should also examine the structural predictors of non-violent forms of crime and potential similarities/differences in these predictors across race/ethnicity.

Taken together, this project makes several key contributions to ecological research on race/ethnicity, social structure, and violence. These include – first, refining our understanding of the racial invariance hypothesis; second, moving beyond structural disadvantage to examine how segregation and immigration influence violence among minority groups; third, using census place-level analyses to overcome the limitations of city-level data and analyses; fourth, separating Hispanic, black, and white crime figures to provide cleaner comparisons of the structural sources of violence across race/ethnic groups; and fifth, illustrating the importance of examining both direct and indirect effects of structural factors on violence across race/ethnic

groups. Most notably, the key contribution of this dissertation is that, drawing from research and theory on the ecology of crime and particularly that research that has focused on black-white comparisons, it has extended our understanding of the patterns and sources of Hispanic violence – both alone and compared to those of whites and blacks.

This project raises important questions about the impacts of segregation, immigration, and other structural factors on violence across race/ethnicity and highlights several remaining gaps in ecological research on race/ethnicity and violence that call for further study. It is hoped that future research will extend the parameters of this study to provide further probes of the relationships between race/ethnicity, social structure, and crime. In light of the growth of the Hispanic population, there is a particular need for further research addressing the structural sources of Hispanic violence and the Hispanic immigration-violence relationship in order to better understand how recent population growth and increasing trends in Hispanic immigration have influenced violence among Hispanics. Doing so has key implications for sociological and criminological theory; for addressing longstanding, core themes in sociology related to race/ethnicity, social stratification, social change, and social control; and for public policy. In effect more research along the lines of this dissertation is critical to help inform scholars, policy-makers, and the general public about the societal impact of ecological changes, recent patterns of immigration, and changes in the racial/ethnic landscape of the country.

Table 5.1. Summary of Findings and Conclusions of the Empirical Chapters

Chapter	Hypothesis	Findings	Conclusion
2	<i>Racial Invariance</i> : The structural predictors of violence are similar for whites, blacks, and Hispanics.	1. Disadvantage contributes to violence for whites, blacks, and Hispanics. 2. Particular structural factors have different effects on violence across groups. 3. Magnitudes of structural effects vary across race/ethnicity.	Mixed support. - (Some support for broadly-defined interpretations; No support for narrowly-
2	<i>Social Capital/Ethnic Economies</i> : Hispanics are protected from the violence-generating effects of disadvantage.	1. Disadvantage factors have less effect on homicide for Hispanics than blacks. 2. Disadvantage factors have similar effects on black and Hispanic Violent Index rates.	Some support.
3	<i>Segregation-Violence</i> : Racial/ethnic isolation contributes to black and Hispanic violence.	1. Isolation contributes to Hispanic homicide. 2. Isolation contributes to Hispanic Violent Index rates. 3. Isolation contributes to black homicide. 4. Isolation reduces black Violent Index.	Moderate Support - (strong support for Hispanics; mixed support for blacks).
3	<i>Mediating Effects</i> : Concentrated disadvantage mediates the segregation-violence relationship.	1. Isolation effects on homicide reduced when disadvantage is added for Hispanics and blacks. 2. Isolation effects on Violent Index rates reduced when disadvantage is added for Hispanics and blacks.	Strong support.
3	<i>Racial Invariance</i> : The effects of racial/ethnic segregation on violence are similar for Hispanics and blacks.	1. Segregation increases black and Hispanic homicide - Similar Effects. 2. Segregation increases Hispanic Violent Index but reduces black Violent Index rates - Opposite Effects.	Mixed support.
4	<i>Immigration-Violence</i> : Immigration contributes to Hispanic violence.	1. Immigration has little total effect (slightly negative) on Hispanic homicide. 2. Immigration has little total effect on Hispanic Violent Index.	No support.
4	<i>Immigration and Social Disorganization</i> : Immigration indirectly contributes to Hispanic violence by disorganizing/destabilizing Hispanic communities.	1. Immigration indirectly contributes to Hispanic homicide by increasing language heterogeneity. 2. Immigration indirectly contributes to Hispanic Violent Index rates by increasing language heterogeneity. 3. Immigration contributes to racial/ethnic heterogeneity and residential mobility.	Strong support.
4	<i>Immigration and Community Resources</i> : Immigration indirectly reduces Hispanic violence by stabilizing Hispanic communities.	1. Immigration indirectly reduces Hispanic homicide by reducing the percentage of Hispanic female-headed families with children. 2. Immigration indirectly reduces Hispanic Violent Index rates by reducing the percentage of Hispanic female-headed families with children. 3. Immigration indirectly reduces Hispanic Violent Index rates by reducing the Hispanic care burden.	Strong support.

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Dissertation Title: *Race/Ethnicity, Social Structure, and Violence: Moving Beyond Black-White Comparisons Toward an Understanding of Hispanic Violence*
- 2002-2004 M.A. in Sociology, The Pennsylvania State University
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Thesis Title: *Race/Ethnic Patterns of Violent Crime: Differences and Trends in Violent Crime Arrests among Whites, Blacks, and Hispanics, 1980-1999*
- 1997-2001 B.S. in Psychology and Sociology (Summa Cum Laude), The Ohio State University

AREAS OF INTEREST

Criminology (*Major Concentration*), Quantitative Methods (*Minor Concentration*)
Other Areas: Race/Ethnicity, Stratification, Demography, Sentencing and the Courts

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- Steffensmeier, Darrell and Ben Feldmeyer. 2006. "Are Girls More Violent Today Than a Generation Ago? Probably Not." *Sociological Viewpoints* 22:71-100.
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- Steffensmeier, Darrell, Jennifer Schwartz, and Ben Feldmeyer. "Gender and Violence: Trends in Adult Male and Female Violence, 1980-2004." *Social Forces*. (Under Review)

HONORS AND AWARDS

- 2005 The Department of Sociology Excellence in Teaching Award
2005 Joan Huber and William Form Graduate Scholarship in Sociology
2006 Joan Huber and William Form Graduate Scholarship in Sociology
2006 Penn State College of the Liberal Arts Dissertation Support Grant
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2007 Second Place – 22nd Annual Graduate Exhibition in Social and Behavioral Sciences
2007 Quantitative Methodology Certification – Department of Sociology and Crime, Law, and Justice, Penn State University