Segregation, Racial Structure, and Neighborhood Violent Crime

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Segregation, Racial Structure, and Neighborhood Violent Crime

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Drawing on structural racism and urban disadvantage approaches, this article posits a broad influence of citywide racial residential segregation on levels of violent crime across all urban neighborhoods regardless of their racial/ethnic composition. Multilevel models based on data from the National Neighborhood Crime Study for 7,622 neighborhoods in 79 cities throughout the United States reveal that segregation is positively associated with violent crime for white and various types of nonwhite neighborhoods. Nonetheless, there is a lack of parity in violence across these types of communities reflecting the larger racialized social system in which whites are able to use their privileged position to reside in the most advantaged neighborhoods, while African-Americans and Latinos live in the most disadvantaged urban communities and therefore bear the brunt of urban criminal violence.

In the United States, blacks, Latinos, and other subordinate groups live in separate social spheres from whites. This is highly visible to social observers in terms of the separation of racial and ethnic groups across space; their dramatically different levels of economic, social, and political resources; and the tight interconnection of these spatial and social inequalities (e.g., Massey and Denton 1993; Smelser, Wilson, and Mitchell 2001; Lewis et al. 2004). These race-space linkages permeate the social

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landscape. A full 62% of all blacks in the United States live in highly segregated metropolitan areas, with the separate black and white neighborhoods in these areas providing distinct social environments. Indeed, whites live almost exclusively in highly advantaged neighborhoods, while blacks and Latinos reside in highly disadvantaged local communities. This combination of segregation and ethnoracial differentials in social and economic conditions provides the basic structural context within which people of different races and ethnicities live and social problems play out. To date, analysts have focused almost exclusively on the ways this racialized social organization is detrimental for communities of color, particularly African-American areas (Crane 1991; Massey and Denton 1993; Peterson and Krivo 1993, 1999; Shihaideh and Flynn 1996; Cutler and Glaeser 1997; Massey and Fischer 2000; Timberlake 2002; Charles 2003).

In this article, we argue that, although segregation clearly serves to harm black communities, its role in producing social problems in neighborhoods is broader and more complex than previously considered. Utilizing the case of violent crime, we contend that the deleterious consequences of segregation go beyond those felt within black and other minority communities, creating conditions conducive to higher levels of violence in local communities of all colors and compositions. Thus, black-white inequality in community violence rates persists, but in more segregated cities all neighborhoods suffer the downside of heightened violent crime. From this point of view, in the quest to maintain urban areas with little violence and few other social problems, the maintenance of black-white residential segregation is everyone’s problem. Ultimately, our analyses confirm this point but nonetheless demonstrate that segregation simultaneously reproduces inequality in criminal violence. Notably, the mechanisms that support segregation limit the potential of African-Americans and other nonwhites to escape the most challenging environments that increase violence while furthering the ability of whites, as a privileged group, to locate in the most advantaged communities where violent crime is far away and easily kept at bay. Recognizing these fundamental realities of the interconnections of race, place, and inequality is required for understanding race-ethnic differences in a host of arenas, including in levels of criminal violence.

Why have we failed to see this important broader impact of racial segregation? The answer rests in the ways that we have theorized and empirically examined the influence of segregation on violence and other social problems. Studies of neighborhood outcomes rarely incorporate a theoretical understanding of the structural basis of race that permeates U.S. society and creates conditions that reproduce racial and ethnic inequality in group outcomes (e.g., Bonilla-Silva 2001; Bobo 2004; Marable 2004). Yet a thorough understanding of the sources of inequality in violent
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crime across communities of varying colors requires taking a critical race approach that considers variation in violence as an outgrowth of the racial structure of society. Empirically, research on criminal violence has either examined how levels of city or metropolitan segregation influence rates for these highly aggregated units (e.g., Logan and Messner 1987; Peterson and Krivo 1993, 1999; Shihadeh and Flynn 1996; Phillips 1997, 2002; Krivo and Peterson 2000) or studied the effects of neighborhood racial/ethnic composition on rates within such local areas (e.g., Bursik and Grasmick 1993; Krivo and Peterson 1996; Sampson, Raudenbush, and Earls 1997; Peterson, Krivo, and Harris 2000; McNulty 2001; Morenoff, Sampson, and Raudenbush 2001; Capowich 2003). Yet, in fact, it is only possible to observe the broad impact of segregation for all areas and populations of varying colors by exploring the interconnections among the neighborhood conditions in which groups reside, the overall level of racial residential segregation found in the city in which these neighborhoods are situated, and other broad macrostructural conditions that provide a context for community violence.

To address the theoretical and empirical limitations of prior research, we outline the broader racial context of segregation’s role in criminal violence and conduct multilevel analyses of previously unavailable data from the National Neighborhood Crime Study (NNCS) for neighborhoods in 79 U.S. cities. This approach moves us, for the first time, away from single-level analyses that consider separately the effects of neighborhood factors and city- or metropolitan-level factors. By observing neighborhoods of varying racial and ethnic compositions across a large, diverse set of cities, we are able to situate these multilevel relationships within an understanding of the racial and ethnic structure of U.S. society in which varying groups of color experience particular combinations of inequalities of circumstance.

SEGREGATION AND THE CONTEXT OF VIOLENT CRIME

Racial and ethnic scholars note that the United States is structured as a racialized social system in which social relations and practices are organized to produce and reinforce a racial order where whites are privileged over other groups (Bonilla-Silva 2001, 2003; Feagin 2001; Bobo 2004; Marable 2004). Accordingly, observed racial inequality in areas such as education, jobs, political representation, and the application of justice results from specific aspects of social organization that serve to reproduce white privilege and reinforce the status quo of minority, particularly black, disadvantage. This racial structure persists in the post–Civil Rights era despite the fact that racial discrimination is illegal in the housing market,
the workplace, and elsewhere. To fully understand how this racial structure operates, researchers must uncover and examine the particular social means that serve to maintain the racial order. Here we explore one such critical mechanism, racial residential segregation, as a source of differential levels of criminal violence—one of the most glaring racial inequalities in the contemporary United States.

To elaborate, patterns of crime bear testimony to the broad description of the racial organization of the United States. Levels of victimization and offending for a number of serious crimes are markedly higher for African-Americans than for whites, with rates for other groups generally falling between the two (Sampson and Lauritsen 1994, 1997; Hawkins 1995; McNulty and Holloway 2000; Martinez 2002). Many scholars understand these patterns as the products of structural inequality across communities that also vary in racial and ethnic composition (e.g., Sampson and Wilson 1995; Krivo and Peterson 1996, 2000; McNulty 2001; Peterson and Krivo 2005; Sampson, Morenoff, and Raudenbush 2005). In this view, local variation in crime is rooted in differences in neighborhood structural conditions, particularly in disadvantages like poverty, family disruption, and joblessness. Highly disadvantaged communities lack strong social control of crime, evidence crime-facilitating processes, and induce criminogenic cultural adaptations (Peterson, Krivo, and Browning 2005).

As a prominent structural force, racial residential segregation is critical to the reproduction of neighborhoods that are structurally unequal across racial and ethnic lines (Logan and Molotch 1987; Alba and Logan 1993; Massey and Denton 1993; Massey, Gross, and Shibuya 1994; McNulty 1999; Muow 2000). Massey and Denton (1993) have argued that such segregation confines the greater economic deprivation found among nonwhite populations, particularly blacks, to separate communities of color. Along with these unfavorable internal conditions, segregated minority communities may also be the visible targets of neglect and disinvestment by city officials, banks, and other authorities (Logan and Molotch 1987; Squires and O’Connor 2001; Squires and Kubrin 2005; Vélez 2006). The result may be the promotion of social problems, including crime, and severe limitations on the life chances of residents. White communities are also segregated but reflect the higher levels of economic and social privilege evident among this group in society at large. Thus, by ensuring that white communities have low levels of disadvantage and are separate from the deleterious social climate evident in racial and ethnic minority localities, segregation presumably maintains low levels of crime for this majority group.

These arguments clearly imply a cross-level model in which macrolevel city (or metropolitan) segregation leads to high levels of disadvantage in nonwhite, but not white, neighborhoods within the broader area. Greater
neighborhood disadvantage, in turn, intensifies local crime and other social problems. Empirical evidence to date suggests that this model is valid. However, one has to draw this conclusion based on studies that examine only components of the model or explore its entire logic but only at the city level.

Drawing on the arguments of Massey and Denton (1993), one set of studies examines the initial component of the model whereby segregation is argued to support U.S. racial inequality by concentrating the disproportionate poverty and disadvantage of African-Americans and thus creating unique structural conditions of isolation for this group. Research supports this contention by demonstrating that, for blacks and other non-white populations, city or metropolitan levels of racial residential segregation increase the concentration of poverty and other disadvantages within particular neighborhoods in the city (Massey and Eggers 1990; Massey and Denton 1993; Jargowsky 1997; Krivo et al. 1998; Massey and Fischer 2000). Massey and Eggers's (1990) study of 60 metropolitan areas for 1980 demonstrated that black, Asian, and Latino poverty rates were all more highly concentrated in places that were more segregated; a later extension of this work for 1990 showed that these associations remained for African-Americans and Latinos (Massey and Fischer 2000).2 Jargowsky (1997) found the same pattern of influence for black poverty concentration for 1980 and 1990 and for change across this decade. Other research has shown that these patterns hold for aspects of disadvantage other than poverty. Greater segregation also leads to the heightened concentration of black female-headed families and jobless males (Krivo et al. 1998; also see Quillian 2003). Regarding whites, segregation’s influence on concentrated disadvantage is strikingly different; racial segregation generally has no effect on or actually benefits this group by leading to reductions in the concentration of poverty and female-headed families.

Another set of studies evaluates the connection between residential segregation and violent crime for cities drawing on the logic of Massey and Denton, but this work rarely explores the intervening mechanism of concentrated disadvantage. Although the findings are not completely consistent, some research shows that higher levels of city segregation are associated with higher rates of violent crime for cities (e.g., Peterson and Krivo 1993, 1999; Shihadeh and Flynn 1996; Shihadeh and Maume 1997; cf. Ousey 1999; Phillips 2002). Peterson and Krivo (1993) examined segregation’s influence on black homicide for large central cities for 1980 and found a sizable link that they attribute to segregation’s role in producing social isolation. Following from Peterson and Krivo (1993), Shi-

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2 The latter study did not include analyses of concentrated poverty among Asian Americans.
hadeh and colleagues showed significant positive associations of various measures of residential segregation with black homicide and robbery for cities in 1990 (Shihadeh and Flynn 1996; Shihadeh and Maume 1997; see also Logan and Messner 1987; Smith 1992; Parker and Pruitt 2000a). Only Peterson and Krivo (1999) have tested whether concentrated disadvantage is the intervening mechanism between city segregation and violent crime. In an analysis of central cities for 1980 and 1990, they demonstrated that racial residential segregation affects black homicide rates for both years and that these relationships are partially (for 1980) or fully (for 1990) explained by the geographic concentration of disadvantage (Peterson and Krivo 1999). They found no connection between segregation and white homicide (Peterson and Krivo 1999) because segregation does not increase the concentration of white disadvantage (Krivo et al. 1998).

A large number of studies conducted entirely at the neighborhood level have assessed the extent to which poverty and various other disadvantages heighten violence. These draw not only on Massey and Denton (1993) but also on Wilson (1987, 1996) and a variety of criminological perspectives, particularly social disorganization theory. This perspective contends that residents of highly disadvantaged communities find it difficult to come together to achieve common goals and hence control violence through informal and formal mechanisms (Shaw and McKay 1969; Bursik and Grasmick 1993; Sampson et al. 1997). Such communities may also evidence crime-facilitating processes in the form of role modeling and adaptive defensive posturing that make violent responses more common (e.g., Anderson 1999). The empirical evidence reveals a strong effect of disadvantage on rates of violent crime that is robust across types of disadvantage and criminal violence (see reviews by Peterson and Krivo [2005] and Pratt and Cullen [2005]). No single study has examined a broad range of places, but these findings hold for cities as diverse as Atlanta (McNulty 2001), Baton Rouge (Shihadeh and Shrum 2004), Chicago (Morrow et al. 2001), Cincinnati (Wooldredge and Thistlethwaite 2003), Columbus (Krivo and Peterson 1996), El Paso, Miami, San Diego (Lee, Martinez, and Rosenfeld 2001), St. Louis (Kubrin and Wadsworth 2003), and Seattle (Crutchfield, Glusker, and Bridges 1999).

Taking the three types of research as a whole, we know that segregation affects the geographic concentration of disadvantage across neighborhoods within cities, that segregation affects city-level violence (at least partly through the differential community distribution of disadvantage within urban areas), and that neighborhood disadvantage has a substantial effect on increasing local area violent crime. Yet we have not directly assessed the links across the city and neighborhood levels. This means that we have failed in two ways to fully understand the connection between segregation and local crime. First, we lack an evaluation of the
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overall model purporting that citywide segregation contributes to neighborhood crime by concentrating disadvantage within select, and predominantly minority, communities. Second, research fails to consider that the macrodistributional character of city segregation may have direct consequences for crime within neighborhoods beyond any indirect impact through reproducing local contexts that are economically highly differentiated by race and ethnicity.

To elaborate, neighborhoods of varying racial and ethnic compositions are situated within cities that vary in their levels of segregation. For example, a predominantly African-American neighborhood may be in a city that is very highly segregated or in one that is much less segregated. Is violent crime higher in such a local minority area when it is in the more highly segregated city? We argue that the answer to this question is affirmative and that, in fact, racial residential segregation may have broadly negative consequences for neighborhood violent crime across areas and groups within cities, not just for minority neighborhoods.

Why would this be the case? Our answer has to do with the role that segregation plays in the racial ordering of society. When the racial order is preserved through residential segregation, separate and unequal groupings do not share common local interests and thus have little reason for forming coalitions to solve problems, including those that foster crime. Drawing on studies of urban racial politics, Massey and Denton (1993) argue that, historically, white ethnic groups were rarely segregated from one another to the extent observed for contemporary African-Americans. For example, Italian or Jewish neighborhoods did not contain a majority of either group but rather contained a mix of different ethnicities that collectively benefited from efforts to garner political, social, and economic resources. These common interests break down in the presence of the high levels of black-white segregation that currently characterize urban places in the United States because these groups so rarely share local residential space. Under this arrangement, “the geographic isolation of blacks instead force[s] nearly all issues to cleave along racial lines” (Massey and Denton 1993, p. 155). The result is a racially and spatially divided public and political organization where both the motivation and the coalitions necessary to implement strategies to improve social and institutional structures that affect crime are lacking in resource-strained urban environments. This means that racial and ethnic groups do not work together for improved services and support structures, nor do they support the costs of ventures that would increase the institutional and social viability of areas of the city. To the extent that violence is related to broad infrastructural conditions and investments, rates of violence are higher throughout the city.³

³ Some case studies show that efforts to organize to successfully fight crime, drugs,
Segregation also reflects prominent racial distinctions in views of the nature of social problems and their solutions (e.g., Schuman et al. 1997; Bobo and Johnson 2004; Dawson and Popoff 2004). Notably, survey research demonstrates that members of different racial groups offer different causal attributions in explaining racial inequality in social conditions and institutions (Young 1991; Schuman et al. 1997; Bobo 2004; Krysan 2008). In particular, whites tend to place blame for black-white inequality on “the group culture and active choices of African Americans” (Bobo 2004, p. 17; see also Schuman et al. 1997). Blacks are more likely to emphasize structural explanations, such as limited opportunities or discrimination. Moreover, whites’ tendency to blame blacks themselves for unequal social conditions leads them to oppose structural solutions that would reduce or eliminate such negative conditions (e.g., Bobo and Kluegel 1993). This perspective is consonant with views on racial/ethnic differences in the nature of and solutions to problems of crime. For example, Young (1991) found that whites are more likely than African-Americans to perceive individuals as autonomous causal agents and therefore are more likely to view the sources of crime as lying in individual choices and propensities. Similarly, Hurwitz and Peffley (1997) note that there is a conflation of race and crime in whites’ views of the causes of crime and their perceptions of appropriate punishment (see also Peffley, Hurwitz, and Sniderman 1997; Gilliam and Iyengar 2000; Gilliam, Valentino, and Beckmann 2002; Bobo and Johnson 2004). Further, segregation may enhance such views. Quillian and Pager (2001) found that whites view crime as a greater problem in areas with more young black males, and Gilliam et al. (2002) show that whites who live in more homogeneous white areas offer explanations of crime that emphasize the role of law enforcement (apparently via deterrence and/or incapacitation) and favor more punitive crime policies.

Drawing on the logic of Bobo and colleagues, if resistance to structural solutions follows from attributing cause to individual choices and characteristics, it is likely that those sharing these views (i.e., whites) would oppose efforts to address very broad structural problems that are the...
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underlying sources of criminal violence. If so, the result might be higher violent crime throughout more highly segregated cities where racial separation and distinctions are such a visible component of the environment.

In addition, in highly segregated communities, substantial portions of the population may be detached from social institutions or perceive existing institutions (including agencies of criminal justice) as illegitimate (Hagan et al. 1998; Hagan, Shedd, and Payne 2005). Such broad detachment and levels of perceived illegitimacy could contribute to violent crime through creating disregard for the law, undermining citizen cooperation in crime control, promoting crime as self-help, and contributing to a law-violating atmosphere (LaFree 1998; Messner and Rosenfeld 2001; Rosenfeld 2002; Tyler and Huo 2002).

In addition to the direct influence of segregation on violent crime, the racial structure of society is central to understanding how these conditions influence violence among white and minority populations because groups have highly differentiated access to more or less segregated and disadvantaged communities. All groups—whites, blacks, and other nonwhite populations—would like to escape from the social costs of segregation and neighborhood deprivation. However, housing market discrimination against blacks and Latinos through practices such as racial steering, higher mortgage denial rates, agents providing less information on available housing, and the like hinder the potential for nonwhites to achieve this goal (e.g., Massey and Denton 1993; Yinger 1995; Holloway and Wyly 2001; Ross and Yinger 2002; Ross and Turner 2005). Whites, by contrast, do not face such obstacles in gaining access to locations wherever they want to live.

Within cities, whites seek to avoid the social costs of urban life by residing in heavily white neighborhoods with low levels of poverty (for a review, see Charles [2003]). As we note, though, such separation does not enable even privileged whites to fully isolate themselves from high rates of violent crime in segregated contexts. However, their position does allow whites to avoid these criminogenic conditions by moving to cities with low levels of segregation and neighborhoods that are the least disadvantaged (Massey and Denton 1993; Cutler and Glaeser 1997). Such privileges are much more widely denied to nonwhites. Recent research confirms that the ethnoracial hierarchy of neighborhood stratification that results from this differential access of groups to areas is substantial and is re-created over time (Sampson and Sharkey 2008; Sharkey 2008). Sampson and Sharkey (2008) demonstrated that, in Chicago, whites have a sizable and distinct advantage with respect to the economic status of their neighborhoods, which is reproduced even as groups stay or move within and outside the city. Sharkey (2008) showed that, throughout the United States, this type of neighborhood inequality between blacks and whites
is dramatic and highly persistent across generations. More than 70% of black children who grow up in the poorest neighborhoods reside in the poorest areas as adults; just 40% of whites experience this intergenerational intransigence.

The highly differentiated location of populations raises a critical point that scholars must take into account to understand the consequences of segregation and disadvantage for local levels of criminal violence and other social dislocations. Since whites cannot avoid the deleterious effects of segregated urban life within large cities, they exercise another means of privilege to distance themselves from problematic outcomes, namely, moving out of segregated urban centers with high levels of disadvantage. Thus, researchers must conduct analyses that explicitly explore the implications of this differential spatial privilege by considering how the specific and distinct residential contexts of groups combine with the effects of disadvantage in creating and recreating inequality of outcomes. In other words, we must recognize that the impact of race and residence on social outcomes is conditioned by where populations actually reside, which is itself a product of the racial and spatial order of the United States. We incorporate this insight into the analyses presented below by predicting levels of neighborhood violence for whites, blacks, and Latinos within levels of local disadvantage and city residential segregation that are actually found among these populations. These results reveal the power of the racial-spatial structuring of circumstances for understanding inequality in neighborhood violence.

DATA AND METHODS
Data and Sample
The data used to test these arguments come from the National Neighborhood Crime Study (NNCS), which was conducted by the first two authors of this article. The purpose of the NNCS is to compile crime data for local areas within cities for a large set of places throughout the country. This major undertaking fills a unique gap in data collection because there is no central repository of crime information except the one provided through the Federal Bureau of Investigation’s Uniform Crime Reporting (UCR) program. The UCR data are for entire agencies only, such as cities, counties, or other similar jurisdictions. They do not include information for smaller area units within these jurisdictions. As such, all previous analyses of the determinants of neighborhood crime have relied on data obtained directly from individual police departments for a single city or a small number of cities (e.g., Krivo and Peterson 1996; Crutchfield et al. 1999; Lee et al. 2001; McNulty 2001; Morenoff et al. 2001; Kubrin and
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Wadsworth 2003; Wooldredge and Thistlethwaite 2003; Shihadeh and Shrum 2004; Nielsen, Lee, and Martinez 2005). These studies do not allow for clearly generalizable conclusions or for exploration of the ways in which important city characteristics influence neighborhood crime. Relying on data for a small number of places also limits the ability to explore the wide range of neighborhoods of varying racial, ethnic, and economic compositions found in the United States.

The NNCS overcomes these fundamental problems by providing a unique data set that includes reported crime information obtained directly from police departments and sociodemographic information from the census for all tracts within a representative sample of large U.S. cities for 2000. We selected the sample of cities from the set of all incorporated places with a population of at least 100,000 in 1999, randomly choosing cities within census regions. We contacted the police department in each selected city to obtain data on reported crime incidents for seven of the FBI’s index offenses for 1999–2001 for the census tracts within each jurisdiction. We combined the tract crime counts with data from the 2000 census on social and demographic characteristics for each census tract and for the cities in which the tracts are located. The result is a sample of 9,593 census tracts. These tracts are located in 91 central

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4 Census population data for 2000 were not yet available at the time the study began.

5 In 26 cities, the police departments provided crime counts for census tracts. In the remaining 65 cities, they provided data for individual crime incidents with addresses for the locations of the offenses. These incident data were geocoded and associated with their census tract locations in order to produce crime counts for census tracts. Geocoding hit rates averaged 96.7% and ranged from 83.7% to 100%. As a check on the quality of the data received, we compared total agency counts of each of the seven crimes submitted to us by individual police departments with the total agency count for the same crime reported in the FBI’s UCR for the given year. If these figures were within 10 percentage points of each other, we included the tract counts for that place, crime, and year; otherwise the data were considered missing. There was also missing crime data when police departments were unwilling to provide data for a particular type of crime due to agency policy or laws that prohibit the release of address-based information for crimes involving victims of rape and/or homicide.

6 Because census tracts can cross city boundaries, the NNCS includes 9,593 tracts that are wholly or partly within the boundaries of the 91 places. Excluded from the data set are whole or partial tracts with small populations (less than 300; n = 623) and some cases for which the police department provided no crime data (n = 303). A large portion of the 926 excluded tracts are partial tracts where only a small area is inside the city (756, or 82%), and the majority of these also have zero population (57%). In addition, 164 census tracts are excluded because more than 50% of the tract population lives in group quarters such as dormitories, jails, or prisons.
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city or suburban localities. These include places in all regions of the country, those with declining and healthy economies, and, of particular interest here, cities that vary in their levels of racial residential segregation. The sample is highly representative of large cities (at least 100,000 population), with means for the crime rate, black-white residential segregation, poverty, and racial composition for the sample differing by at most 10% from the population of places with over 100,000 residents. Our analysis is restricted to 7,622 census tracts across 79 places for which complete information is available for the set of violent crimes analyzed here (homicide, rape, and robbery).

Although the NNCS data are unique in breadth, allowing for exploration of unanswered questions about the role of race, segregation, and disadvantage in patterns of violence, they have some limitations. The data are cross-sectional, which leaves open issues related to causal order. Notably, we consider city segregation as a contributor to neighborhood violence. Yet differential levels of violence across racially distinct areas may also influence broad patterns of residential segregation. For example, there is some evidence that actual residential mobility, or stated intentions to move, is influenced by levels of crime or violence (Taub, Taylor, and Dunham 1984; Morenoff and Sampson 1997; Emerson, Yancey, and Chai 2001). Further, such problems are more prevalent in African-American neighborhoods than in other neighborhoods, and whites often perceive rates in black areas as even higher than officially reported (Quillian and Pager 2001). As a result, criminal violence may affect (and/or reinforce) racial residential segregation. In fact, city-level studies that utilize over-time data show a reciprocal relationship between violent crime and racial composition (Liska and Bellair 1995; Liska, Logan, and Bellair 1998). Unfortunately, the time and cost for compiling over-time neighborhood crime data for a large set of places such as the one studied here would be prohibitive, and this precludes our ability to explore the potential reciprocal influence of neighborhood violence on patterns of segregation within cities.

The NNCS is also an entirely aggregate data set. The conceptual arguments being tested are aggregate and structural in nature, thereby averting the possibility of an ecological fallacy in our analyses and conclusions.

7 The findings reported below are based on tracts in 79 of the 91 places in the NNCS. Sixteen (20%) of the 79 incorporated places are suburbs. This is not, however, a representative sample of all suburbs in the United States because the vast majority of suburbs have populations below 100,000. We limited our sample to places with a population of at least 100,000 in order to have cities with a sufficient number of neighborhoods for conducting the type of multilevel analyses presented below. Census tracts are constructed to have an average population of 4,000, thereby providing an approximate minimum of 25 cases at the lowest level of analysis.
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However, this means that we do not examine the processes that link structural conditions to individual criminal actions and the characteristics of those involved in crime. Future research that combines data for diverse samples of individuals living in highly varied neighborhood and city types would be fruitful for advancing knowledge on the multilayered sources of inequality in criminal violence.

Dependent Variable
Table 1 presents the operationalizations of all variables along with their means and standard deviations. The dependent variable is a three-year (1999–2001) average count of violent crimes (homicides, rapes, and robberies) reported to the police. For ease of interpretation, we present rates per 1,000 population in table 1 with the counts included in a table note. We use multiyear counts to minimize the impact of annual fluctuations for small units. Substantively, we are interested in predicting rates of reported violent crime, and we do this through use of nonlinear multilevel modeling (see details below in the section on analytic strategy).

Independent Variables
Predictors reflect both neighborhood and city characteristics. Consistent with the perspective outlined above, our central explanatory variables at the neighborhood level are socioeconomic disadvantage and racial/ethnic composition. Disadvantage is an index (average z-scores) of the extent of joblessness, professional or managerial occupations (reverse coded), high school graduates (reverse coded), female-headed families, secondary sector workers (those in the six occupations with the lowest average incomes), and poverty (α = .93). We tested whether the effect of disadvantage levels off at higher levels (e.g., Krivo and Peterson 2000) and found this to be the case. Thus, we include a quadratic term for neighborhood disadvan-

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8 Aggravated assaults are not included because the data we obtained from police departments for this crime are considered missing for a substantial number of places due to problems of data quality (as mentioned in n. 5).

9 The lowest-wage occupations were determined based upon mean national wage data by occupation for the 33 occupational categories for which such data are available for tracts. The national wage data were derived from 2000 census information obtained from the Integrated Public Use Microdata Series (http://www.ipums.org). The six occupations included are food-preparation- and serving-related occupations; personal care and service occupations; farming, fishing, and forestry occupations; building- and grounds-cleaning and maintenance occupations; health-care support occupations; and material-moving workers. This group of occupations is similar to that included in indicators of secondary-sector work used in studies of labor stratification and violent crime (Crutchfield 1989; Crutchfield et al. 1999; Krivo and Peterson 2004).
<table>
<thead>
<tr>
<th>Variable</th>
<th>Operationalization</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variables:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violent crime rate</td>
<td>3-year (1999–2001) average reported rate of homicides, rapes, and robberies per 1,000 tract population</td>
<td>4.95</td>
<td>6.64</td>
</tr>
<tr>
<td>Homicide rate</td>
<td>3-year (1999–2001) average reported rate of homicides per 1,000 tract population</td>
<td>1.15</td>
<td>0.27</td>
</tr>
<tr>
<td>Rape rate</td>
<td>3-year (1999–2001) average reported rate of rapes per 1,000 tract population</td>
<td>0.51</td>
<td>0.77</td>
</tr>
<tr>
<td>Robbery rate</td>
<td>3-year (1999–2001) average reported rate of robberies per 1,000 tract population</td>
<td>4.29</td>
<td>6.01</td>
</tr>
<tr>
<td><strong>Independent variables, tract level (N = 7,622):</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disadvantage (α = 0.93)</td>
<td>Average of the standard scores for 6 variables:</td>
<td>-0.03</td>
<td>0.85</td>
</tr>
<tr>
<td>1. % of population ages 16–64 who are unemployed or out of the labor force</td>
<td>33.27</td>
<td>12.72</td>
<td></td>
</tr>
<tr>
<td>2. % of employed civilian population age 16 and over working in professional or managerial occupations (reverse coded in index)</td>
<td>32.22</td>
<td>16.74</td>
<td></td>
</tr>
<tr>
<td>3. % of population age 25 and over who are high school graduates (reverse coded in index)</td>
<td>75.77</td>
<td>17.80</td>
<td></td>
</tr>
<tr>
<td>4. % of households that are female-headed families</td>
<td>16.55</td>
<td>11.20</td>
<td></td>
</tr>
<tr>
<td>5. % of employed civilian population age 16 and over employed in the 6 occupational categories with the lowest average incomes</td>
<td>18.54</td>
<td>9.00</td>
<td></td>
</tr>
<tr>
<td>6. % of population that is below the poverty line</td>
<td>18.22</td>
<td>13.81</td>
<td></td>
</tr>
<tr>
<td>Neighborhood racial/ethnic composition</td>
<td>Dummy variables for type of area:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. White neighborhood, 1 = 70% or more non-Latino white (else = 0), reference</td>
<td>0.37</td>
<td>0.48</td>
<td></td>
</tr>
<tr>
<td>2. Black neighborhood, 1 = 70% or more non-Latino black (else = 0)</td>
<td>0.14</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td>3. Latino neighborhood, 1 = 70% or more Latino (else = 0)</td>
<td>0.07</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>4. Minority neighborhood, 1 = 70% or more Latino and non-Latino black (else = 0)</td>
<td>0.07</td>
<td>0.26</td>
<td></td>
</tr>
<tr>
<td>5. Integrated neighborhood, 1 = any other racial/ethnic combination (else = 0)</td>
<td>0.35</td>
<td>0.48</td>
<td></td>
</tr>
<tr>
<td>Residential instability (α = 0.69)</td>
<td>Average of the standard scores of 2 variables:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. % of occupied housing units that are renter occupied</td>
<td>48.14</td>
<td>25.04</td>
<td></td>
</tr>
<tr>
<td>2. % of population age 5 and over who lived in a different residence in 1995</td>
<td>51.70</td>
<td>13.87</td>
<td></td>
</tr>
<tr>
<td>%foreign born</td>
<td>% of population that is foreign born</td>
<td>15.90</td>
<td>16.01</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>%males ages 15–34</td>
<td>% of population that is male ages 15–34</td>
<td>15.72</td>
<td>5.64</td>
</tr>
</tbody>
</table>

**Independent variables, city level (N = 79):**

<table>
<thead>
<tr>
<th>Segregation</th>
<th>Index of dissimilarity across census tracts within the city between non-Latino whites and non-Latino blacks</th>
<th>47.29</th>
<th>18.23</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disadvantage (α = .95)</td>
<td>Average of the standard scores for 6 variables:</td>
<td>1. % of population ages 16–64 who are unemployed or out of the labor force</td>
<td>31.14</td>
</tr>
<tr>
<td></td>
<td>2. % of employed civilian population age 16 and over working in professional or managerial occupations (reverse coded in index)</td>
<td>34.90</td>
<td>7.99</td>
</tr>
<tr>
<td></td>
<td>3. % of population age 25 and over who are high school graduates (reverse coded in index)</td>
<td>79.69</td>
<td>8.55</td>
</tr>
<tr>
<td></td>
<td>4. % of households that are female-headed families</td>
<td>14.41</td>
<td>4.99</td>
</tr>
<tr>
<td></td>
<td>5. % of employed civilian population age 16 and over employed in the 6 occupational categories with the lowest average incomes</td>
<td>16.70</td>
<td>3.57</td>
</tr>
<tr>
<td></td>
<td>6. % of population that is below the poverty line</td>
<td>15.51</td>
<td>6.56</td>
</tr>
<tr>
<td>Manufacturing jobs</td>
<td>% of employed civilian population age 16 and over working in a manufacturing industry</td>
<td>11.93</td>
<td>4.84</td>
</tr>
<tr>
<td>Population</td>
<td>Total city population</td>
<td>386,900</td>
<td>485,550</td>
</tr>
<tr>
<td>%black</td>
<td>% of city population that is non-Latino black</td>
<td>18.86</td>
<td>16.90</td>
</tr>
<tr>
<td>%movers</td>
<td>% of population age 5 and over who lived in a different residence in 1995</td>
<td>52.56</td>
<td>5.72</td>
</tr>
<tr>
<td>%foreign bmr</td>
<td>% of population that is foreign born</td>
<td>14.94</td>
<td>10.98</td>
</tr>
<tr>
<td>%young males</td>
<td>% of population that is male ages 15–34</td>
<td>15.88</td>
<td>2.28</td>
</tr>
<tr>
<td>South</td>
<td>Dummy; 1 = South (else = 0)</td>
<td>.33</td>
<td>.47</td>
</tr>
<tr>
<td>West</td>
<td>Dummy; 1 = West (else = 0)</td>
<td>.32</td>
<td>.47</td>
</tr>
</tbody>
</table>

* The means (SDs) for the three-year average number of reported incidents of violence, homicide, rape, and robbery are, respectively, 16.03 (17.01), 0.45 (0.84), 1.66 (1.94), and 13.92 (15.52).
Racial/ethnic composition of neighborhoods is included as a set of dummy variables that distinguish predominantly white (reference group), black, Latino, minority (black and Latino), and integrated tracts. Neighborhoods are defined as predominantly white, black, or Latino if the respective group constitutes at least 70% of the tract population. Areas are designated as minority when the combination of blacks and Latinos makes up 70% or more of the population (but neither group alone is more than 70%). All other tracts are considered integrated neighborhoods because they have more of a balance of population groups. We control for residential instability with an index (average $z$-scores) of the percentage of renter-occupied units and the percentage of residents age 5 or over who lived in a different dwelling in 1995 ($\alpha = .69$). The percentage of the total population that is foreign born is included to capture the inverse relationship between immigrant populations and violence that has been found in recent neighborhood research (Martinez and Lee 2000; Lee et al. 2001; Lee and Martinez 2002; Martinez 2002, 2003). Finally, the percentage of the population that is male and between 15 and 34 years old controls for the crime-prone population.

At the city level, our key predictor is black-white residential segregation, measured with the widely used black-white index of dissimilarity ($D$) for census tracts within the city. These data were acquired from the Lewis Mumford Center for Comparative Urban and Regional Research. The dissimilarity index measures the extent of deviation from evenness of blacks and whites across areas within the city. In addition, we incorporate macrostructural characteristics that prior work considers influential for crime and other social dislocations (Wilson 1987, 1996; Crutchfield 1989; Shihadeh and Ousey 1996; Crutchfield et al. 1999; Parker and McCall 1999). We include disadvantage at the city level, measured in a parallel fashion to the neighborhood indicator ($\alpha = .95$). The effects of the macroeconomic climate are measured as the percentage of adult workers employed in manufacturing industries. We control for city population size, %non-Latino black, %recent movers, %foreign born, and %young males. We also control for region with two dummy variables, South and

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10 When alternative cutoffs for defining the neighborhood types are used (60% and 80%), the results are the same.

11 We also considered whether Latino-white city segregation influences violent crime. This factor was not significant in any model. Therefore, it is not included in the results reported. Additional models tested whether the effect of segregation levels off at higher values by including a quadratic term for black-white residential segregation. This term was never significant.

12 As alternative indicators of the economic climate, we tested for the effects of change in the percentage employed in manufacturing from 1970 to 2000. This variable was not significant in any model.
Neighborhood Violent Crime

West, with the remainder (East and Midwest) of the country as the reference category.

Analytic Strategy
To examine the roles of city segregation and neighborhood disadvantage and racial/ethnic composition in neighborhood violent crime, we estimate a multilevel model with tracts as level-1 units and cities as level-2 units (representing tracts as cases that are embedded within cities as contexts). Because we are analyzing relatively rare events within small units, we estimate a nonlinear Poisson model, with counts of violent crime as the outcome. We specify that these counts have variable exposure by tract population and thereby make the analysis one of violence rates (Osgood 2000).13 A common concern in the application of the Poisson model is that it assumes equal mean and variance of the dependent variable. However, in the case of rare count events like those analyzed here, this assumption is frequently violated, with the variance being considerably larger than the mean; that is, there is overdispersion. In our analyses, we tested for overdispersion and found that it is significant. Hence, we control for overdispersion in the level-1 variance. In hierarchical linear models, a Poisson model with overdispersion is analogous to a negative binomial model. All continuous variables are grand-mean centered so that the coefficients for the city-level variables (e.g., segregation) can be meaningfully interpreted as effects on the average tract-level violence rate within the city net of the neighborhood conditions included in the model.

The analysis proceeds in several stages. We first estimate a two-level model of violence including the neighborhood characteristics, city racial residential segregation, and all other city macrostructural characteristics.14 Next, we incorporate cross-level interactions between the four dummy variables representing neighborhood racial/ethnic composition and city segregation. These interactions test whether the influence of segregation varies significantly (or not) across the diverse types of neighborhoods. Next, we use the results from these models to explore how the distributions

13 We use HLM 6.04 to fit our multilevel models. In nonlinear Poisson models in HLM, the specification that crime counts have variable exposure by tract population is analogous to specifying a Poisson model in which tract population is included as an independent variable with its parameter fixed at 1.

14 Before estimating the two-level model, we examined the unconditional model to determine whether there is significant variation in violent crimes across cities. The resulting variance component is .48277 ($\chi^2 = 3,546.94$), which is significant at $P < .001$. In our models, we specify a random effect for tract disadvantage—i.e., we allow the effect of disadvantage to vary across cities. The chi-squared test of the variance component shows that this random effect is significant.
of groups across neighborhoods and cities that vary in levels of segregation combine to affect violence in a racially structured society. We do so by presenting predicted rates of violence across empirically observed combinations of local and citywide conditions.

**RESULTS**

The descriptive statistics in table 1 indicate that, during the three-year period of 1999 to 2001, the mean annual violent crime rate was 4.95 per 1,000 population. The overall rate is dominated by robberies, which average 4.29 per 1,000 population per year. Homicides are particularly rare ($\bar{x} = .15$). The sample includes a diverse set of communities. Somewhat over one-third (37%) of the tracts are predominantly white, 14% are black, and 7% are Latino. A relatively large portion are more mixed, with 7% having a combination of mainly blacks and Latinos (what we term minority neighborhoods) and over one-third being more integrated (approximately the same number as are predominantly white). With regard to city black-white segregation, the average for the index of dissimilarity is 47.3. This is comparable to the mean level for all places in the United States with 100,000 population or higher. Additional descriptive analyses (not reported) show that neighborhood levels of violence vary systematically across cities depending on their extent of black-white segregation. Rates of violent crime for cities with low ($D < 30$), moderate ($30 \leq D < 60$), and high ($D \geq 60$) segregation are, respectively, 1.8, 4.2, and 6.1 per 1,000. This pattern provides the first indication that more highly segregated cities have heightened levels of local crime.

Before turning to the multivariate analyses, it is worthwhile to briefly point out certain features of the racial composition of the tracts in the sample. Table 2 provides information on the racial distributions for the neighborhoods that are predominantly composed of a single group. Notably, these neighborhoods are not especially clustered near the 70% cutoff. Rather, they are distributed throughout the potential range of their level of group predominance. Further, the distribution of predominantly black neighborhoods is distinct from that for predominantly white or Latino neighborhoods. Nearly 60% of African-American tracts are more than 90% black, while only 20%–25% of white and Latino tracts are this homogeneous. This pattern reflects the racialized nature of residential space in the United States. The remaining two types of neighborhoods (data not presented) are more mixed by definition, but not evenly across groups.

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15 The national mean segregation index is based on data from the Racial Residential Segregation Measurement Project conducted by Reynolds Farley, University of Michigan, Population Studies Center (http://enceladus.isr.umich.edu/race/racestart.asp).
On average, minority neighborhoods show considerable balance between blacks and Latinos (means are 39% black and 44% Latino). Nonetheless, about half of these tracts are composed of between 60% and 70% of one of these two groups. The average integrated neighborhood is 46% white, 19% black, and 23% Latino. However, the integrated areas are mostly either white and black (44% of all integrated areas) or white and Latino (39% of all integrated areas).16

Table 3 presents the results of the multilevel models of neighborhood violence that examine the effects of all tract and city characteristics (model 1) and interactions between segregation and tract racial/ethnic composition (model 2). Looking first at the influence of the neighborhood conditions, we can assess whether these factors affect violent crime for a large set of tracts across places. The results show that widely examined predictors of violence are broadly important across cities. Neighborhoods that are more disadvantaged have higher rates of criminal violence, although this effect tapers off as disadvantage increases. Still, the effect of disadvantage is quite large throughout most of the disadvantage distribution. A 1-SD (.85) increase in the disadvantage index yields a 73% increase \( (e^{\beta_{1.100} \times .85} - 1) \times 100 \) in the local violence rate in neighborhoods with average disadvantage (recall that this variable is grand-mean centered). This effect is much larger among less disadvantaged areas and tapers off to a modest, but still positive, influence in the most highly

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16 We estimated the multilevel models presented below allowing for differences across integrated neighborhoods that are black-white, Latino-white, and more balanced. Overall, the models yield results that are very similar to those reported in table 3, which shows that rates of violence in Latino neighborhoods are more similar to those for white areas than those for any of the other types of racial/ethnic communities. Latino-white integrated neighborhoods have significantly higher levels of violence than white areas, but the size of this coefficient is smaller than that for the other two types of integrated areas and is close to the size of the predominantly Latino parameter. No substantively important differences from the results reported below are found for the interaction model.

---

### TABLE 2
**Group Race-Ethnic Distribution for Predominantly White, Black, and Latino Neighborhoods**

<table>
<thead>
<tr>
<th>Racial Group % in Neighborhood</th>
<th>% of Neighborhoods with This Level of Predominance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
</tr>
<tr>
<td>70–79 ..................</td>
<td>32.6</td>
</tr>
<tr>
<td>80–89 ..................</td>
<td>41.3</td>
</tr>
<tr>
<td>90–100 ...............</td>
<td>26.1</td>
</tr>
</tbody>
</table>

**Note**—All columns sum to 100%.
TABLE 3
MULTILEVEL POISSON MODELS (with Variable Exposure) OF NEIGHBORHOOD VIOLENT CRIME WITH MAIN EFFECTS AND RACE/ETHNICITY BY SEGREGATION INTERACTIONS, NATIONAL NEIGHBORHOOD CRIME STUDY, 2000

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>SE</td>
<td>b</td>
<td>SE</td>
</tr>
<tr>
<td>Tract level (N = 7,622):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disadvantagea</td>
<td>.6417**</td>
<td>.0442</td>
<td>.6448**</td>
<td>.0417</td>
</tr>
<tr>
<td>Disadvantage squareda</td>
<td>-.1474**</td>
<td>.0226</td>
<td>-.1538**</td>
<td>.0223</td>
</tr>
<tr>
<td>Black neighborhood</td>
<td>.3004**</td>
<td>.0614</td>
<td>.3619**</td>
<td>.0808</td>
</tr>
<tr>
<td>Latino neighborhood</td>
<td>.1684</td>
<td>.1122</td>
<td>.1924*</td>
<td>.0902</td>
</tr>
<tr>
<td>Minority neighborhood</td>
<td>.3459**</td>
<td>.0636</td>
<td>.2772**</td>
<td>.0634</td>
</tr>
<tr>
<td>Integrated neighborhood</td>
<td>.2763**</td>
<td>.0586</td>
<td>.2383**</td>
<td>.0552</td>
</tr>
<tr>
<td>Residential instability</td>
<td>.3205**</td>
<td>.0228</td>
<td>.3209**</td>
<td>.0232</td>
</tr>
<tr>
<td>%foreign born</td>
<td>-.0304**</td>
<td>.0012</td>
<td>-.0103**</td>
<td>.0011</td>
</tr>
<tr>
<td>%young males</td>
<td>-.0001</td>
<td>.0033</td>
<td>-.0001</td>
<td>.0033</td>
</tr>
<tr>
<td>City level (N = 79):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segregation</td>
<td>.0112**</td>
<td>.0027</td>
<td>.0100**</td>
<td>.0033</td>
</tr>
<tr>
<td>Disadvantage</td>
<td>.0157</td>
<td>.0533</td>
<td>.0139</td>
<td>.0538</td>
</tr>
<tr>
<td>Manufacturing jobs</td>
<td>-.0202**</td>
<td>.0080</td>
<td>-.0194*</td>
<td>.0083</td>
</tr>
<tr>
<td>Population</td>
<td>.0001**</td>
<td>.0000</td>
<td>.0001**</td>
<td>.0000</td>
</tr>
<tr>
<td>%black</td>
<td>.0154**</td>
<td>.0026</td>
<td>.0157**</td>
<td>.0026</td>
</tr>
<tr>
<td>%movers</td>
<td>.0004</td>
<td>.0082</td>
<td>.0023</td>
<td>.0083</td>
</tr>
<tr>
<td>%foreign born</td>
<td>.0006</td>
<td>.0043</td>
<td>.0012</td>
<td>.0043</td>
</tr>
<tr>
<td>%young males</td>
<td>.0077</td>
<td>.0201</td>
<td>.0048</td>
<td>.0203</td>
</tr>
<tr>
<td>South</td>
<td>-.2079*</td>
<td>.0987</td>
<td>-.2093*</td>
<td>.0993</td>
</tr>
<tr>
<td>West</td>
<td>.1114</td>
<td>.1162</td>
<td>.1166</td>
<td>.1167</td>
</tr>
<tr>
<td>Segregation × black neighborhood</td>
<td>-.0023</td>
<td>.0035</td>
<td>-.0023</td>
<td>.0035</td>
</tr>
<tr>
<td>Segregation × Latino neighborhood</td>
<td>-.0010</td>
<td>.0052</td>
<td>-.0010</td>
<td>.0052</td>
</tr>
<tr>
<td>Segregation × minority neighborhood</td>
<td>.0048</td>
<td>.0034</td>
<td>.0048</td>
<td>.0034</td>
</tr>
<tr>
<td>Segregation × integrated</td>
<td>.0033</td>
<td>.0030</td>
<td>.0033</td>
<td>.0030</td>
</tr>
<tr>
<td>Intercept</td>
<td>-6.0554</td>
<td></td>
<td>-6.0664</td>
<td></td>
</tr>
</tbody>
</table>

**Note.—**A multilevel Poisson model with overdispersion is analogous to a negative binomial model.

* Tract disadvantage is specified as having a random effect.

* P < .05 (one-tailed tests).

** P < .01.

disadvantaged neighborhoods.17 This pattern is consistent with other stud-

17 The effect of an independent variable equals $b_i + (2 \times b_{ij} \times X)$ in the parabolic specification. Because disadvantage is grand-mean centered, mean disadvantage equals zero, which results in the particular exponentiated value presented in the text. At 1 SD below the mean (SD = .85), the percentage change in violence for a unit increase in disadvantage is $(e^{.042+2 \times -.1474 \times .85} - 1) \times 100 = 144\%$. At 1 SD above the mean, the percentage change in violence for a unit change in disadvantage is $(e^{.042+2 \times -.1474 \times .85} - 1) \times 100 = 48\%$. At
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ies demonstrating that further increases in disadvantage are less consequential for violent crime when disadvantage reaches extremely high levels (Krivo and Peterson 2000; McNulty 2001).

Further, areas that are predominantly black, minority, or integrated all have higher levels of violence than do white neighborhoods, even though other important neighborhood factors are controlled. African-American, minority, and integrated areas have net violence rates that are between 30% and just over 40% higher than in white neighborhoods. Notably, rates of this type of violent crime are statistically similar in Latino and white areas. Neighborhood residential instability is also positively associated with violence, while %foreign born is negatively related to this outcome.

Regarding the cross-level influence of segregation that is of central concern here, the findings show that local rates of criminal violence are significantly higher in more highly segregated cities. This is the case even though we have taken into account both disadvantage and racial composition at the neighborhood level. The coefficient for city segregation shows that violence is 1.1% higher ($e^{.011} - 1 \times 100$) in a city where $D$ is one point higher. A larger 10-point difference in citywide black-white segregation is associated with a 12% higher neighborhood violence rate.

Other city characteristics also affect local levels of violence. In terms of macrostructural conditions, city disadvantage does not contribute to neighborhood violent crime over and above its ramifications for local areas within the city. However, neighborhoods in places with more manufacturing employment have less violence. This pattern is consistent with Wilson’s (1987, 1996) and others’ arguments that a strong manufacturing base provides a context that reduces crime and other social problems in inner-city neighborhoods. Specifically, a unit increase in the level of manufacturing jobs reduces violence by approximately 2%. The importance of this effect is more evident when you consider that a 1-SD increase in manufacturing employment (4.8%) would decrease the violent crime rate by about 9%. Clearly, this feature of the overall economy is relevant for safety from violence in neighborhoods beyond the way it reduces local disadvantage.

Among the city-level controls, population, %black, and South affect levels of violence, with neighborhoods in larger cities with more sizable black populations having higher rates and those in southern cities having lower levels compared to their counterparts in the Midwest and Northeast. It is not clear why the city %black is significant in view of the fact that we have controlled for city disadvantage, segregation, and a host of other

\[ \frac{.642}{e^{.1474} \times .17} \times 100 \approx 15\% . \]

2 SDs above the mean, the percentage change in violence for a unit increase in disadvantage is $(e^{.011} - 1) \times 100 \approx 15\%$.
structural conditions within urban places, as well as disadvantage and racial composition at the neighborhood level. This may result from aspects of the racialized nature of social and political processes within U.S. cities that are difficult to measure across a broad set of places. For example, many of the cities with large black populations (e.g., Detroit and Cleveland) suffer substantial financial and institutional problems stemming from long periods of disinvestment and political neglect that make it extremely difficult to overcome spirals of decline that encourage the spread of problematic outcomes like crime. The negative effect of southern location is also unexpected in light of previous theoretical and empirical analyses concerning the southern culture of violence (e.g., Wolfgang and Ferracuti 1967; Nelsen, Corzine, and Huff-Corzine 1994; Parker and Pruitt 2000b). Our sample is representative of large cities overall and within regions. Yet, given the size of our city sample, this means that states with very few places over 100,000 population, including large parts of the South, are sometimes not represented in our data. In fact, there are no cities in the sample from the several states that are in what is termed the Deep South, which may explain the regional effect observed here.\footnote{To examine the influence of the southern region in more detail in light of this sample limitation, we further divided the South variable into Florida, Texas, and other southern states. These analyses show that neighborhood violence is significantly lower only in southern cities outside the two most urban states in the South. We also conducted three region-specific analyses to assess the sensitivity of our results to our sample selection. These demonstrate that city racial residential segregation has a consistent significant effect within the Northeast, South, and West even though the number of cities and related level-2 degrees of freedom are small in these subsamples.}

Model 1 in table 3 assumes that the effect of city segregation on local violence is the same for neighborhoods of all types. Indeed, we argued above that this would be the case for areas of varying colors. Model 2 explicitly tests this contention by adding cross-level interactions between the four dummy variables representing neighborhood racial/ethnic composition and city segregation. As the findings show, segregation affects levels of violent crime in all types of local areas in the same manner. The main effect for city segregation is positive and significant, indicating that this factor increases rates of violence in white areas. Nonsignificant interactions of segregation with the four other community racial/ethnic types demonstrate that the effects for black, Latino, minority, and integrated areas are statistically similar to that for white neighborhoods.

Figure 1 graphically demonstrates the importance of segregation’s effect for communities of all colors. Here we see that a 1-SD increase in racial residential segregation is associated with a 15\%–20\% increase in neighborhood violence in white, black, and Latino areas. Segregation’s effect
Neighborhood Violent Crime

Fig. 1.—Percentage increase in neighborhood violent crime rate for a 1-SD increase in black-white segregation.

is stronger—but not significantly so—in minority and integrated tracts. A 1-SD increase in segregation leads to 31% and 28% more violence in minority and integrated areas, respectively. Although these are not statistically distinct effects, substantively the difference in the influence of segregation between the two kinds of mixed neighborhoods and areas dominated by a single group appear large. This pattern may result from dynamics similar to those found in research on segregation, competition, and race riots. Olzak, Shanahan, and McEneaney (1996) demonstrate that race riots are most likely when high levels of segregation, which engender animosity and conflict, are followed by increases in interracial contact that fuel competition as racial barriers are breaking down. In their city-level analyses, this pattern holds for black-white, but not black-Hispanic, contact. However, Bergesen and Herman’s (1998) neighborhood analyses for Los Angeles show that the 1992 riots were most serious where black-Latino succession was taking place. In a similar manner, violence may be most heightened in local areas where intergroup contact is greater within conditions of overall high segregation.

The results in table 3 demonstrate the overarching significance of city

19 In order to test the significance of the difference in the effects of segregation on violence between each possible paired comparison of neighborhood racial/ethnic type, we repeatedly changed the reference category from white to black, Latino, minority, and integrated areas. The only significant difference is between black neighborhoods and their minority counterparts. In additional analyses, we also explored whether Latino-white segregation has an effect on Latino neighborhood crime. This effect was not significant.
racial residential segregation and neighborhood disadvantage for increasing local violence. However, they do not indicate how this effect is experienced in the actual combinations of segregation and disadvantage found in the socially and spatially stratified United States. In fact, most highly disadvantaged neighborhoods are located in highly segregated cities. Conversely, cities with low levels of segregation have few very highly disadvantaged neighborhoods; the least segregated cities in our sample rarely have neighborhoods with levels of disadvantage much above the overall mean. To illustrate the patterns of neighborhood violence that occur within these observed contexts, figure 2 presents predicted rates of violent crime (per 1,000 population) for tracts between the 10th and 90th percentiles of observed neighborhood disadvantage within cities with low \((D = 20)\), moderate \((D = 45)\), and high \((D = 70)\) segregation. These predicted values are derived from model 1 in table 3, holding all other factors constant at their mean levels.

Figure 2 provides a dramatic picture of how macrolevel racial segregation and local area disadvantage combine in affecting rates of violence. Most striking is the extent to which rates for neighborhoods in the least segregated cities differ from their levels in the most segregated places. Because cities with low segregation have less violent crime and few highly disadvantaged census tracts, even their most disadvantaged neighborhoods experience relatively low levels of criminal violence. Indeed, in low-segregation cities, rates of violence do not exceed 2.4 per 1,000 residents. This rate is lower than that found in the vast majority of the areas within highly segregated places. Only the small proportion of areas with very low disadvantage in highly segregated cities have rates of violence below those found in the most disadvantaged neighborhoods in cities with low segregation. In the most segregated cities, which have higher local violence and a substantial prevalence of highly disadvantaged neighborhoods, many areas within the city have very high rates of violent crime, reaching peak levels of over 6.3 per 1,000 in the most disadvantaged local areas. These rates are nearly 60% higher than the national rate of violence of 4.0 per 1,000 for all cities over 100,000 population in 2000 (Federal Bureau of Investigation 2000), with half of all local areas in the highly segregated cities having violence rates above the national mean. In comparison, all neighborhoods in cities with low segregation, and most local areas in cities with moderate segregation, have predicted rates below this level. Thus under conditions of high segregation and high neighborhood disadvantage, violence is an extraordinary concern for residents.

How does the depiction presented for all neighborhoods in figure 2 look if we additionally consider how city segregation and local disadvantage are interconnected with the differential access of whites and nonwhites to distinct residential environments? Research consistently shows that
whites live in the “best” neighborhoods and use their privilege to distance themselves from segregated cities and disadvantaged communities within cities. The implications of this racial-spatial structuring for neighborhood violence are quite dramatic, as is illustrated in the separate predicted rates for predominantly white, black, and Latino neighborhoods (see fig. 3; based upon the second model in table 2). As in figure 2, these graphs include rates only within ranges of neighborhood disadvantage that are widely observed within each population (i.e., between the 10th and 90th percentiles of neighborhood disadvantage for white, black, and Latino tracts within places with low, moderate, and high segregation).

Figure 3 shows, first, the way in which racial segregation heightens crime in all three types of neighborhood. No matter what the level of disadvantage or the racial/ethnic composition, neighborhoods are worse off in terms of violent crime when they are located in more segregated cities. But this influence of segregation is not as dramatic as that resulting from differential placement of racial and ethnic groups in the social structure. Clearly, white urban neighborhoods that are actually found in U.S. cities provide distinctly different contexts of local disadvantage and city segregation than is the case for either black or Latino communities. Virtually all black and Latino neighborhoods have higher levels of disadvantage than those found in most white areas. This is seen in the striking pattern whereby predicted violence rates for observed white neighborhoods are almost exclusively in the left half of the disadvantage scale,
Fig. 3.—Predicted neighborhood violence rates for observed levels of white, black, and Latino disadvantage by level of segregation.
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whereas predicted rates for observed black and Latino neighborhoods are mainly in the right half of the graph. The contrast is most stark when comparing white and black neighborhoods because the latter areas are completely absent from cities with low segregation, start with relatively high levels of violence (based on the main effect for black neighborhoods), and all have local disadvantage ranging from average to extreme. The result is that even the most disadvantaged white neighborhood in a highly segregated city has a violent crime rate of 2.9 per 1,000, which is lower than the level of violence in the least disadvantaged black areas in highly segregated cities as well as in virtually all black neighborhoods in moderately segregated places. When the positive effect of disadvantage combines with the startlingly high level of disadvantaged conditions that blacks are relegated to in U.S. cities, violence rates rise to very high levels, at 6.4 and 7.1 per 1,000 in moderately and highly segregated cities, respectively. Thus, the social conditions that characterize black areas expose them to levels of violence that are generally above the national average for large places (4.0) and considerably so for the sizable number of African-American neighborhoods that are highly disadvantaged and located in the most segregated cities.

By comparison, white neighborhoods evince the privilege of low levels of criminal violence stemming from their location in the least segregated cities and their low levels of local disadvantage. Rates for white areas in cities with low racial segregation reach a maximum of only about one-third of the national rate of violence. The peak rate is only 2.1 per 1,000 in white neighborhoods in moderately segregated places, and it varies only between 1.2 and 2.9 even in the most segregated cities. These patterns take on greater significance when we consider how they combine with the racial hierarchy of place. Indeed, 65% of white neighborhoods in our sample are located in cities with moderate or low segregation. By contrast, 81% of black neighborhoods are located in highly segregated places. Latino neighborhoods are situated similarly to black areas, although at least some Latino areas are in cities with low levels of racial segregation. Still, 72% of Latino communities (compared to 81% for African-American communities) are in the most highly segregated places. Combining this with the generally high levels of disadvantage in Latino neighborhoods results in rates of violent crime that range from somewhat below average (3.4 per 1,000) to high (5.5 per 1,000) in cities with moderate levels of segregation and from 4.5 to 6.0 per 1,000 in highly segregated places. Relatively few Latino communities are located in cities with low segregation (just 7.5%); these have modest levels of violence that start at just 1.7 and peak at 4.3. Like those for black areas, rates of violence for Latino neighborhoods show the cost of the racial/ethnic structuring of society.
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when compared to those for white communities. Predicted violent crime rates for minority and integrated neighborhoods (not shown) reinforce this insight. Levels of disadvantage, distributions of areas across levels of segregation, and hence rates of violence in integrated areas are much more similar to those displayed in part A of figure 3 for white neighborhoods than for the predominantly black or Latino areas. The main difference is that integrated neighborhoods extend more into the above-average portion of the disadvantage distribution with associated higher levels of criminal violence. Patterns for minority neighborhoods (not presented) reflect the fact that they experience nearly the same social circumstances as black and Latino areas and therefore violence there reaches very high levels.

CONCLUSION

This article draws on the literature on concentrated disadvantage and resulting dislocations and scholarship on structural racism in the United States to posit a broad role for citywide racial residential segregation as a contributor to levels of criminal violence in urban neighborhoods. We theorize that city segregation contributes to neighborhood violent crime indirectly, through the way it produces isolation and structural disadvantage in predominantly minority areas, and directly, by making it difficult for separate and unequal groups to work together to foster common goals and solve shared problems. Our emphasis on its direct role draws attention to the proposition that segregation’s influence on neighborhood violence is not limited to its deleterious consequences for racial/ethnic minority communities. Rather, such criminogenic consequences also extend to white areas of a city. Prior criminological research on the segregation–violent crime link has failed to conceptualize or examine segregation’s potentially broad influence, because it has relied too exclusively on literature that projects the consequences of segregation only to racial minorities (mainly blacks) and because it has utilized data sets that do not allow for an examination of cross-level models of macro conditions (like segregation) on neighborhood processes for a broad range of types of places and racial/ethnic neighborhoods.

Our research addresses these conceptual and methodological limitations. We join urban and race/ethnicity scholarship in positing how segregation contributes to criminal violence. In addition, we utilize unique data to explore the interconnections among neighborhood characteristics, city segregation and other macrostructural conditions, and violent crime for areas of varying colors across a large and diverse set of places. Several key findings with broad implications emerge.

The results underscore the critical role of citywide segregation and
confirm that this factor has broad effects on neighborhood violence, above and beyond its contributions to structural disadvantage. Higher levels of segregation are associated with higher levels of violent crime regardless of the racial/ethnic composition of neighborhood residents. Even the most privileged groups (i.e., whites) are unable to avoid the criminogenic consequences of segregation by living in separate neighborhoods within highly segregated cities. Thus, it behooves whites as well as other residents of such places to work collectively to address structural concerns that contribute to higher violence. Whites and others who focus primarily on punishment of errant individuals to deal with the crime problem but neglect or work against programs and structures that reduce underlying structural problems associated with criminal violence do so at their own peril. The reality is that increased local violent crime is a significant cost of residing in cities with high levels of segregation. Yet, segregation is not the only higher-level contextual condition that sets the stage for violence at the neighborhood level. Places with fewer manufacturing jobs also have considerably higher violence rates. This effect is consistent with arguments regarding the consequences of a weak macroeconomic climate for local communities (Wilson 1987, 1996; Crutchfield 1989; Crutchfield, Matsueda, and Drakulich 2006).

More generally, our findings document the importance of a multilevel approach for understanding the sources of local violence. As we have noted, structural analyses of criminal violence assume that macrolevel segregation leads to high rates for minority areas and maintains low levels for majority communities. However, researchers heretofore have not tested this critical assumption because data have not been available to examine the implied cross-level model. The findings reported above confirm what has been assumed and demonstrate that the effects of city characteristics are sizable and apply across a variety of types of racial/ethnic communities. Future researchers should build on these findings by examining the role of additional macro conditions (e.g., political structure and processes, financial health and investments) in neighborhood violence and assessing whether the importance of such factors is contingent on the type of urban environment (e.g., suburban vs. central city, expanding vs. depopulating).

Although our research establishes that city characteristics do indeed set the context for neighborhood violence, these macrolevel features do not offset the importance of neighborhood characteristics as proximate causes of violent crime. To the contrary, the neighborhood variables of central focus here, structural disadvantage and racial/ethnic composition, are powerful predictors of neighborhood violent crime in the large set of cities examined. The fact that greater neighborhood structural disadvantage is associated with higher levels of violence will not come as a surprise.
Virtually all prior research establishes this link (see reviews by Peterson and Krivo [2005] and Pratt and Cullen [2005]). By contrast, one may find the results for racial/ethnic composition somewhat more puzzling. These show that, even with neighborhood disadvantage controlled for, rates are higher in areas populated by blacks and other nonwhite groups than in white communities, with one exception: rates for Latino neighborhoods do not differ significantly from those for white areas. This raises two questions: Why are Latino patterns distinct from other nonwhite communities? And why, despite the broad influence of city segregation and neighborhood disadvantage, is violence significantly higher in a variety of types of nonwhite communities than in their white counterparts? There are several potential answers to the first question. Vélez (2006) raises the possibility that, compared to black areas, Latino neighborhoods benefit from closer ties to local government officials and to economic agencies. Martínez (2002) argues that Latino neighborhoods differ from other areas with subordinate populations in terms of historical racism and discrimination and the frames of reference (abroad vs. the United States) used to evaluate their circumstances. Also, several recent analyses indicate that Latino communities with large shares of immigrants have lower levels of violent crime (Lee et al. 2001; Martínez 2002; Vélez 2006; Sampson 2008). Future research is needed to assess how broadly the protection from violence through immigration (or other possible sources) applies. Is it limited to Latinos and, therefore, related to something unique about this group, such as improved social capital associated with the establishment of ethnic enclaves or the expansion of community institutions (Vélez 2006)? Or does it apply more broadly to the range of racial/ethnic neighborhoods, as suggested by Martínez and Nielsen (2006)?

Our answer to the question regarding other nonwhite neighborhoods relates to our key argument that higher levels of violence and other social problems are tightly connected with the spatial hierarchy of whites and nonwhites in the racialized structure of the United States. Clearly, we observe a lack of parity in criminal violence between white and nonwhite communities, even taking into account the broad role of segregation and disadvantage. Yet, judging from our graphs of predicted violence rates for the types of white, black, and Latino neighborhoods that are actually found in large urban areas (fig. 3), it is equally clear that there is a nearly complete lack of parity in the residential contexts of these populations. Simply put, blacks and Latinos live in separate social spheres from their white counterparts. This is seen in the fact that there are no African-American neighborhoods in the least racially segregated cities in our sample and few Latino areas in these places (64, or 5.7% of Latino tracts). Indeed, 64% of blacks in the 79 cities studied here live in the 22 highly...
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In the 79 cities in our sample, 37% of non-Latino whites and 56% of Latinos live in the 22 highly segregated places.
Estimated Equations for Multilevel Hierarchical Generalized Linear Model (HGLM)

Level-1 model (both equations in table 3):

\[
\eta_{ij} = \log(\lambda_{ij}) = \beta_{0j} + \beta_{0j}(\text{disad}_{ij} - \text{disad}) + \beta_{2j}(\text{disadsq}_{ij} - \text{disadsq}) + \beta_{3j}(\text{blkngh}_{ij}) + \beta_{4j}(\text{ltngh}_{ij}) + \beta_{5j}(\text{minngh}_{ij}) + \beta_{6j}(\text{intngh}_{ij}) + \beta_{7j}(\text{resin}_{ij}) + \beta_{8j}(\text{forborn}_{ij} - \text{forborn}) + \beta_{9j}(\text{yngmale}_{ij} - \text{yngmale}).
\]

Level-2 model (model 1, table 3):

\[
\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{seg}_{j} - \text{seg}) + \gamma_{02}(\text{cdisad}_{j} - \text{cdisad}) + \gamma_{03}(\text{manuf}_{j} - \text{manuf}) + \gamma_{04}(\text{citypop}_{j} - \text{citypop}) + \gamma_{05}(\text{pcblk}_{j} - \text{pcblk}) + \gamma_{06}(\text{pcmovers}_{j} - \text{pcmovers}) + \gamma_{07}(\text{cforborn}_{j} - \text{cforborn}) + \gamma_{08}(\text{cyngmales}_{j} - \text{cyngmales}) + \gamma_{09}(\text{south}) + \gamma_{10}(\text{west}),
\]

\[
\beta_{1j} = \gamma_{10} + u_{1j}, \quad \beta_{2j} = \gamma_{20} + u_{2j}, \quad \beta_{3j} = \gamma_{30}, \quad \beta_{4j} = \gamma_{40}, \quad \beta_{5j} = \gamma_{50}, \quad \beta_{6j} = \gamma_{60}, \quad \beta_{7j} = \gamma_{70}, \quad \beta_{8j} = \gamma_{80}, \quad \beta_{9j} = \gamma_{90}, \quad \beta_{10j} = \gamma_{100},
\]

Level-2 model (model 2, table 3):

\[
\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{seg}_{j} - \text{seg}) + \gamma_{02}(\text{cdisad}_{j} - \text{cdisad}) + \gamma_{03}(\text{manuf}_{j} - \text{manuf}) + \gamma_{04}(\text{citypop}_{j} - \text{citypop}) + \gamma_{05}(\text{pcblk}_{j} - \text{pcblk}) + \gamma_{06}(\text{pcmovers}_{j} - \text{pcmovers}) + \gamma_{07}(\text{cforborn}_{j} - \text{cforborn}) + \gamma_{08}(\text{cyngmales}_{j} - \text{cyngmales}) + \gamma_{09}(\text{south}), + \gamma_{10}(\text{west}).
\]

\[
\beta_{1j} = \gamma_{10} + u_{1j}, \quad \beta_{2j} = \gamma_{20} + u_{2j}, \quad \beta_{3j} = \gamma_{30}, \quad \beta_{4j} = \gamma_{40}, \quad \beta_{5j} = \gamma_{50}, \quad \beta_{6j} = \gamma_{60}, \quad \beta_{7j} = \gamma_{70}, \quad \beta_{8j} = \gamma_{80}, \quad \beta_{9j} = \gamma_{90}, \quad \beta_{10j} = \gamma_{100},
\]
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