PATTERNS OF LOCAL SEGREGATION: DO THEY MATTER FOR CRIME?

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Urban areas are characterized by the uneven distribution of social groups across geographic space. This is most noticeable in pervasive levels of residential segregation by race, ethnicity, and economic status across U.S. cities and areas within cities (Fischer 2003; Fischer et al. 2004; Jargowsky 1996; Logan, Stults, and Farley 2004; Massey and Denton 1993). Many studies have shown that such segregation is associated with a variety of social problems for communities with high concentrations of disadvantaged and minority residents (Charles 2003; Crane 1991; Cutler and Glaeser 1997; Massey 2001; Peterson and Krivo 1993, 1999; Shihadeh and Flynn 1996), and simultaneously carries with it social benefits for localities that have more advantaged and White populations (Bonilla-Silva 2001; Krivo, Peterson, Rizzo, and Reynolds 1998). Yet, research on the consequences of residential segregation rarely explores how the inherently spatial nature of the process of segregation is connected with the geographic distribution of social outcomes. Rather, studies rely on measures of segregation that summarize the racial, ethnic, or economic composition of neighborhoods within a city without considering where areas with different compositions are located relative to one another (Cutler and Glaeser 1997; Krivo and Peterson 1996, 1999; Massey and Denton 1993; McNulty 2001; Peterson and Krivo 1993). A growing body of literature has attempted to rectify this problem by developing segregation measures that incorporate the spatial position of distinct populations (e.g., Black versus White, Hispanic versus non-Hispanic, poor versus non-poor; see Reardon and O'Sullivan 2004; Wong 2001, 2002). In this paper, we extend this work to more fully describe the local spatial dynamics of residential segregation by race, ethnicity, and economic status, and explore their consequences for levels of a single social outcome--urban crime.

We begin from a framework that recognizes that the levels and consequences of local segregation need to be distinguished from those of region-wide segregation which are so widely studied (Peterson, Krivo, and Browning 2006). Here, we consider *region-wide segregation* as the unequal distribution of groups (racial, ethnic, economic, etc.) across neighborhoods within a broad region (city, county, metropolitan area). *Local segregation* refers to homophily with respect to racial, ethnic, or socioeconomic composition among neighborhoods that are linked to one another through contiguity or other physical features that spatially connect them (e.g., roadways). Thus, every neighborhood within the broader region is more or less *locally* segregated depending on the extent to which it is similar or dissimilar from other neighborhoods that are proximate to it.

Drawing on theoretical writings on segregation, race, and local social problems, this distinction in the levels of segregation is critical for understanding the diverse ways in which residential segregation affects different populations within urban areas. Most writing on segregation in the United States emphasizes its region-wide character and how this intensifies social problems, including crime, among segregated disadvantaged populations, especially Africans Americans. Yet even within highly segregated regions, groups may live closer or farther from one another and the effects of such proximity or distance may differ depending upon the extent of power and resources each group holds in society. Thus, within the racial structure of the U.S. in which Whites are the most privileged and African Americans are at the bottom of the hierarchy (Bonilla-Silva 2001; Bonilla-Silva and Glover 2004; Marable 2004), neighborhoods in the center of a large urban Black belt may suffer greater problems resulting from spatial isolation than those near to its edge (Krivo, Peterson, and Karafin 2006; Peterson,

2

Krivo, and Browning 2006). Conversely, White areas that are farthest from such a Black belt and that are surrounded by other White areas may incur greater social advantages than White communities located closer to the Black belt. While a considerable body of research has examined the influence of the percentage Black in a neighborhood on a host of social outcomes, this approach does not recognize the degree to which neighborhood processes are affected by interconnections across more or less permeable boundaries, greater or lesser physical distance from similar and dissimilar local areas, and differential situations of groups within society.

In this paper, we measure the extent of local segregation as conceptualized above in such a way as to capture the differential level of such segregation for groups with varying social positions. To do so, we apply Wong's (2002) local segregation indices which are spatially adjusted P* exposure measures. Following Wong, two local segregation indices are constructed to reflect the fact that the extent of exposure of two groups to one another is asymmetric and depends partly on the sizes of the groups. For example, when Whites outnumber Blacks, the chance that a Black person has contact with a White individual is greater than the likelihood of a White person having contact with a Black. Wong's local segregation indices capture this asymmetry and are scaled so that higher values reflect greater group segregation (i.e., lack of exposure). This is achieved by subtracting each exposure value from one. Taking the Black-White example again, one minus the exposure of Whites to Blacks in neighboring areas provides the level of White local segregation; one minus the exposure of Black to Whites in neighboring areas provides the level of Black local segregation. Using these two separate measures of local segregation is important for both descriptive and analytic reasons. As noted above, high levels of White local segregation in the U.S. represent substantively different social circumstances than

3

high levels of Black local segregation. Thus, it is critical that we construct local spatial

segregation measures that distinguish these two situations. Doing so, in turn, allows us to

explore the substantive question of whether local segregation of advantaged groups, such as

Whites, increases positive outcomes while local segregation of less powerful populations, such as

African Americans, increases disadvantageous outcomes, and potentially in varying degrees of

magnitude.

To both describe patterns of local segregation by race, ethnicity, and economic status and

explore its consequences for one social outcome, neighborhood crime, we examine data for a set

of 36 large cities for which census tract crime data have been collected as part of the National

Neighborhood Crime Study (NNCS). The NNCS is a unique data set that includes reported

crime counts from police departments and sociodemographic information from the census for all

tracts within a representative sample of 91 U.S. cities with populations over 100,000 for 2000.

No central repository of crime information in the United States exists for units smaller than entire

police department level (i.e., cities or other broad policing units) and the NNCS constitutes the

first attempt to compile neighborhood crime data for more than a very small number of cities

(most commonly just a single city).[1] Here, we examine a subset of 36 places in the NNCS that

are large enough (populations over 300,000) for variation in local segregation to be meaningful

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[1] The NNCS consists of a sample of 91 cities from all places with a population of at least 100,000 in 1999. It includes central cities and large suburbs, places in all regions of the country, those with declining manufacturing bases and healthy economies, and cities that vary in their levels of racial residential segregation. The places in the sample are highly representative of cities over 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 percent from the population of large places.

(see Appendix A for a list of the cities).[2] The number of census tracts within these cities ranges

from 63 in Arlington, TX to 827 in Los Angeles, CA. The cities included are located in all

regions of the country and vary considerably in levels of city-wide Black-White and Latino-

White segregation (the Black-White Index of Dissimilarity varies from 29 to 85; the Hispanic-

White Index of Dissimilarity varies from 22 to 70).

Census data for race by Hispanic/Latino identification and household income of tracts

will be used to construct Wong's local segregation indices for non-Hispanic Blacks, non-Hispanic

Whites, Hispanics, low-income households (under $20,000, somewhat more than the poverty line

for a family of four), and affluent households ($75,000 or more, approximately four times the

low-income standard).[3] Maps and summary descriptive statistics will be used to explore levels

and variability in patterns of each type of local segregation. Each local segregation indicator will

then be added to basic models of neighborhood violent (murder and robbery) and property

(burglary, larceny, and motor vehicle theft) crime.[4] These models will include age composition,

disadvantage (an index combining poverty, low wage jobs, joblessness, female headed families,

professional workers [reverse coded], and college graduates [reverse coded]), residential

instability (an index combining renters and recent movers), immigration (an index combining

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[2] Two cities in the NNCS with populations over 300,000 are excluded because of
missing data for several crime types.

[3] The low-income and affluent household income thresholds are constrained by the
household income distribution provided in census summary files.

[4] The five violent and property crimes being examined are a subset of the seven Federal
Bureau of Investigation's index offenses. The violent offenses of rape and aggravated assault
are excluded because of poor data quality in police reports for these crimes in some cities.
Their exclusion allows us to avoid a notable reduction in the sample of cities studied.

foreign born, recent immigrants, and linguistic isolation), residential loans, and racial/ethnic composition. Given the clustering of census tracts within cities, all analyses will be conducted using hierarchical models and will also control for city characteristics widely known to affect crime. These multivariate models will allow us to explore whether local segregation of privileged populations (e.g., Whites, affluent households) increases social advantage in the form of reduced urban crime problems, while local segregation of groups lower in the stratification hierarchy of the U.S. (e.g., Blacks, Hispanics, the poor) heightens crime as a neighborhood social problem.

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Appendix A. List of Included Cities

Albuquerque, NM
Arlington, TX
Austin, TX
Boston, MA
Charlotte, NC
Chicago, IL
Cincinnati, OH
Cleveland, OH
Columbus, OH
Dallas, TX
Denver, CO
Detroit, MI
Fort Worth, TX
Houston, TX
Jacksonville, FL
Kansas City, MO
Long Beach, CA
Los Angeles, CA
Memphis, TN
Miami, FL
Milwaukee, WI
Minneapolis, MN
Nashville, TN
Oakland, CA
Oklahoma City, OK
Phoenix, AZ
Pittsburgh, PA
Portland, OR
San Diego, CA
Seattle, WA
St. Louis, MO
Tampa, FL
Toledo, OH
Tuscon, AZ
Virginia Beach, VA
Washington, DC