Global Neighborhoods: New Pathways to Diversity and Separation

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Global Neighborhoods: New Pathways to Diversity and Separation[1]

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Analyses of neighborhood racial composition in 1980–2000 demonstrate that in multiethnic metropolitan regions there is an emerging pathway of change that leads to relatively stable integration These are "global neighborhoods" where Hispanics and Asians are the pioneer integrators of previously all-white zones, later followed by blacks. However, region-wide segregation is maintained at high levels by whites' avoidance of all-minority areas and by their continued exodus (albeit at reduced levels) from mixed settings. Globalization of neighborhoods adds a positive new element of diversity that alters but does not erase the traditional dynamic of minority invasion succession.

There is a long-standing consensus among social scientists about the typical path of neighborhood change that underlies persistent residential segregation between blacks and whites. Decades ago, Chicago school sociologists introduced an ecological metaphor of invasion and succession to describe a common tendency for entry of African-Americans into previously all-white neighborhoods where the housing stock was aging and middle-class people and families with children were leaving (Hoover and Vernon 1959). Black "invasion" would be followed by continued racial change, leading finally to a predominantly black composition (Duncan

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and Duncan 1957; Taeuber and Taeuber 1965; Aldrich 1975; Schwirian 1983). Many white neighborhoods, it was recognized, remained resistant to black invasion, but once begun the process was nearly certain to result in "succession." This model is so widely accepted that empirical studies of community racial composition (Guest 1978) have embraced terms like "invasion" and "succession" as cross-sectional descriptors of neighborhoods with modest or large shares of black residents, respectively. Some scholars have investigated the alternative possibility of "stable integration" (Molotch 1972; Ottensman and Gleason 1992; Ellen 2000; Maly 2005). At best, they find that a mix of white and black residents can be maintained over time in unusually favorable conditions. The search for stable integration, as Saltman (1990) characterizes it, is a "fragile movement."

We argue that the theory of racial transition that served well for much of the 20th century must be reconsidered in an era when massive waves of Hispanic and Asian immigration are transforming the racial and ethnic composition of metropolitan America (for a broader review of the implications for segregation, see Fong and Shibuya [2005]). In our analysis the outstanding feature of the "global city" (defined by Sassen [1991] on the basis of its financial innovation and control functions) is its ability to draw people from all parts of the world, creating a new population diversity that affects the familiar pattern of race relations in black and white. We identify the corresponding phenomenon of "global neighborhoods"—neighborhoods where the simple place categories of predominantly white, predominantly black, or racially mixed are no longer adequate.

The most important new category is that in which all four major racial/ethnic groups (whites, blacks, Hispanics, and Asians) are included. We observe a rapid growth of such neighborhoods, whose creation and persistence are fundamentally at variance with the invasion-succession model. These are not temporarily integrated places, diverse only as long as it takes for whites to abandon them. Nor do they arise out of processes of aging, disinvestment, and deprivation. We argue that stable diversity is possible and that it can occur in average or even better-than-average neighborhoods, if and only if black entry is preceded by a substantial presence of both Hispanic and Asian residents. Global neighborhoods do not erase racial boundaries, but they introduce new dynamics that need to be taken into account by urban theory.

We are not the first to suspect that immigration is having an impact on patterns of residential segregation. Lee and Wood (1991) speculated that something was already changing in the 1970s. "The dominant trend," they hypothesized, "is toward complex multiethnic neighborhoods in which all four groups are present. Whether the dynamics underlying this trend are captured adequately by the succession model seems doubtful. At a minimum, the way in which the model depicts competition needs to

be extended beyond the simple two-group scenario" (p. 37). Recent fieldwork on intergroup relations in diverse neighborhoods (Nyden et al. 1998; Sanjek 1998; Maly 2005) reinforces this suggestion, and scholars are showing new interest in measures of neighborhood diversity (Maly 2002) to complement measures of segregation.

What is new in our study is an explicit alternative model based on evidence from 1980 to 2000 of how Asians and Hispanics affect the paths of neighborhood change. We will show that two directions of change coexist in global neighborhoods. One of these is a persistent process of white flight and white replacement by minorities (now including Hispanics and Asians in addition to blacks), the same demographic shift that underlies the familiar model of invasion and succession. The other is the new diversity that Sanjek (1998) terms "the future of us all"—a future of mixed neighborhoods overcoming the black-white divide, where Sanjek believed members of all groups would learn to live together. We do not offer insights here on the personal connections created in different kinds of neighborhoods, but we do examine the phenomenon of residential mixing. In this respect the most pessimistic reading from the 1990s of trends in residential patterns was that American apartheid would continue into the 21st century (Massey and Denton 1993). The most optimistic reading saw the newly multiethnic metropolis poised for a breakthrough in neighborhood diversity (Farley and Frey 1994). Our purpose here is to demonstrate that processes posited by both scenarios are taking place at the same time and that the era of global neighborhoods creates new possibilities for residential integration without erasing the old racial boundaries.

WHITE FLIGHT AND MULTIETHNIC BUFFERS

The theoretical invasion-succession model was based on decades of observation of white flight from places where blacks had gained a foothold. A handful of studies have emphasized other aspects of neighborhood racial change. Lee and Wood's early study showed, for 1970–80, that in most Western metropolitan regions, succession from mixed-race to all-black neighborhoods was uncommon, especially in tracts with a large Hispanic population. In the prototypical case of Los Angeles, "Hispanics and Asians replaced departing whites and decreased the chances of black residential dominance" (Lee and Wood 1991, p. 32). This example shows that the new "complex multiethnic neighborhoods" have the potential to become all minority. They may become more diverse than black neighborhoods, but they are not necessarily areas of stable white-minority integration. Another study of the same 1970–80 decade (Denton and Massey 1991)

suggested that neighborhood diversity was increasing, by showing that the prevalence of all-white tracts was declining nationally in that period while the share of tracts with combinations of two or three minority groups (tracts including blacks, Hispanic, or Asians—although not necessarily whites) was growing. But they also presented evidence that (1) there was a countertrend for tracts including blacks in combination with other minority groups to become all black; (2) neighborhoods with whites plus Hispanics only or with multiple minorities were likely to lose their white populations; and (3) white population loss was more likely in neighborhoods with larger minority shares, in neighborhoods with multiple minority groups, and in neighborhoods that were geographically nearer to tracts with a more than 50% black population.

If these results were the whole story, they would be largely consistent with the invasion-succession model. There is another narrative, although up to now the evidence supporting it has been weak. This is the conjecture that the presence of Hispanic and Asian neighbors provides a protection against white flight, or in the terminology of Farley and Frey (1994; also Frey and Farley 1996) a "buffer." Buffering is shorthand for the argument that the movement of "more fully assimilated second and third generations of Latinos and Asians to higher-status, more integrated communities" provides "a push that should lead to greater integration of blacks both with more fully assimilated minority members and with whites" (Frey and Farley 1996, p. 42).

Certainly whites are less segregated from Hispanics and Asians than they are from blacks (Denton and Massey 1988; Iceland 2004; Logan, Stults, and Farley 2004). This difference is accentuated after controlling for differences in personal background characteristics. Logan et al. (1996) estimated locational outcomes at the individual level, including such controls, in five large multiethnic metropolitan regions (New York, Los Angeles, Chicago, Miami, and San Francisco). In each one, they found that Hispanics and Asians lived in census tracts with two to three times the share of non-Hispanic whites as did comparable blacks. It would not be surprising, then, if "more fully assimilated second and third generations" of these groups became the initial integrators of white neighborhoods.

The buffer hypothesis goes a step further to posit that whites would remain in these places if blacks also entered. Why would they remain? The term "buffer" may imply that Hispanics and Asians live in an intermediate zone between whites and blacks within the same census tract (reducing their geographic proximity). Or it may refer to a social buffer, not a geographic one, in which the presence of other groups reduces the salience of black neighbors to whites, even when they live on the same block. The history of entire metropolitan areas or specific neighborhoods could help to explain this lower salience. For example, some metropolitan

regions with large Hispanic and Asian populations are not traditional areas of black settlement. During the Great Migration, large black ghettos were the norm in cities in much of the Northeast and Midwest, but many black residents arrived after that period in newer cities without that history. It is plausible that, for them, racial barriers may always have been lower. Iceland (2004) goes further, suggesting that the contemporary presence of multiple minority groups can undermine the black-white dichotomy, even in areas where it was historically entrenched.

Scholars have sought support for the buffering hypothesis through studies of the correlates of segregation at the city or metropolitan level. Frey and Farley (1996) focused on black segregation from all other groups combined, rather than from non-Hispanic whites alone. This research studied 37 metropolitan regions that the investigators classified as multiethnic, defined as areas where the share of at least two of the three major minority groups was higher than in the nation as a whole (the threshold values were 9.0% for Hispanics, 2.9% for Asians, and 12.1% for blacks). In these multiethnic metropolises, they argued, mixed-race neighborhoods should be more stable and blacks should be more dispersed than in regions where they are the dominant minority group (p. 43). Contradicting this hypothesis, they found that multiethnic metropolitan regions did not have significantly lower black-nonblack segregation in 1990. Decline in black-nonblack segregation during 1980–90 was greater in multiethnic regions and where the Hispanic population grew faster than the black population (a finding replicated for 1980–2000 by Iceland [2004], using a different procedure). However, declining black-nonblack segregation could result either from black integration with whites or from the replacement of whites by other minorities, like the Los Angeles case noted above. Therefore, the findings are inconclusive.

In studies focused on black-white segregation, the findings are also mixed. Farley and Frey's earlier analysis of all metropolitan areas (1994) showed that black-white segregation was significantly lower in 1990 in those areas where a larger share of the minority population was Hispanic and Asian. But segregation did not decline more between 1980 and 1990 in metropolises where the Hispanic and Asian population grew faster than the black population. This analysis was replicated for 1980–2000 by Logan et al. (2004), who found no effect of Hispanic or Asian population size on change in black-white segregation.

We will argue that these studies have looked for evidence at the wrong geographic scale. Because both white flight and buffering are important constituents of neighborhood change in the current period, and because they are occurring simultaneously in different parts of the same regions, the way to discover them is to examine changes over time in individual neighborhoods and to pay attention to conflicting trends. More attention

needs to be given to the pathways of change, rather than simply the trend line in measures of segregation or neighborhood diversity.

PATHWAYS OF NEIGHBORHOOD CHANGE

Research on invasion and succession has focused on a standard sequence of change, going so far as to posit a specific "tipping point" at which succession was inevitable. There have been fewer studies of changes in a multiethnic context. Nyden et al. (1998) studied several racially and ethnically diverse places in detail and pointed out that they were created in various ways, including "an influx of immigrant groups; a change in neighborhood composition as an aging White population moves out or dies and new residents take their place; and reinvestment in formerly rundown neighborhoods that brings a modest increase in White, Anglo, middle-income residents while a sluggish real estate market inhibits wholesale gentrification and resegregation" (p. 11). Hence, diversity could be temporary (until the last white resident leaves or until gentrification can run its course), or it could be longer lasting.

Two quantitative studies of neighborhood change offer evidence for both scenarios. One study (Alba et al. 1995) focuses on the New York metropolis in 1970–90. This study explicitly categorizes census tracts by the presence of non-Hispanic whites as well as blacks, Asians, and Hispanics, and it presents a transition matrix of shifts in composition over time. The findings point to a decline of all-white neighborhoods and an emergence of more diverse categories involving Hispanics and Asians (and less often blacks) in combination with whites. But there is a countertrend involving the loss of whites from mixed neighborhoods: about a third of tracts with whites, blacks, and Hispanics in 1970 lost their white presence by 1990, as did about one in five tracts that began with all four groups. The second study (Friedman 2008) tracks a national sample of large metropolitan regions for 1980–2000 (see also Ellen [1998], who studied 1980–90 with similar methods and results). Friedman uses a simpler classification of the population as non-Hispanic white, black, and "other race" (including Hispanic, Asian, Native American, and other races in one category). She reports a sharp decline of predominantly white tracts, rapid growth of white-other race tracts (not including blacks), and a quite modest increase in the number of multiethnic tracts including whites, blacks, and other races. When blacks were present along with whites in 1980, it was most often in white-black tracts. By 2000, consistent with the buffering hypothesis, black-white coresidence was mainly in white-black-other race (or multiethnic) tracts. But because Friedman finds that a

majority of the multiethnic tracts existing in 1980 had lost their white presence by 2000, her results suggest that buffering may be temporary.

These studies highlight three common forms of neighborhood change that have special relevance to our examination of global neighborhoods. The first is the disappearance of the all-white enclave. The second is the entry of blacks into communities where whites already have Hispanic or Asian neighbors or both. The third is white flight from mixed neighborhoods. We will focus on these transitions in greater detail to examine their prevalence and the conditions under which they occur.

The Disappearance of the All-White Neighborhood

Several studies listed above emphasize the declining share of all-white census tracts, although they employed different classification schemes. Denton and Massey's very strict definition of all-white tracts included only those where neither blacks nor Hispanics or Asians had a presence as high as 30 persons. By this definition, the national share of all-white tracts declined from 14% in 1970 to 7% in 1980. Alba et al. (1995) classified as "all white" those tracts where no minority group had as many as 100 residents. These were 29% of tracts in the New York metropolis in 1970 but only 7% in 1990. Friedman (2008) defined "predominantly white" neighborhoods as those with more than an 80% white population and where neither blacks nor other races comprised as much as 10%. Their share dropped from 54% to 28% of census tracts in her national sample between 1980 and 2000.

What population dynamics explain the disappearance of white neighborhoods? One factor is purely demographic—the metropolitan population as a whole is growing and becoming more diverse. Where the criterion is a fixed absolute minority group size, growth of the tract population even without a change in its composition could move a tract over the threshold number. Or if minority populations grow in a metropolis over time, even without changing their spatial distribution, the number of all-white tracts in that region would be expected to decline. In these cases, there would be no change in segregation as it is most often measured through the Index of Dissimilarity. If the definition of all-white neighborhoods were adjusted for the changing overall composition of the metropolis, in fact, there would be no decline of white neighborhoods.

The invasion-succession model offers clear predictions for which all-white neighborhoods are most likely to increase their share of minority residents. As formalized by Hoover and Vernon (1959), invasion is rooted in a natural loss of attractiveness of zones, with aging and deteriorating housing stock causing groups with more options (whites and higher-income residents) to begin abandoning the area, thus creating vacancies

to be filled by others. Hence, whites remain in neighborhoods where they constitute a large majority and where other conditions (e.g., income, education, and home ownership rates) suggest an attractive housing market. They leave and new minorities are able to enter when conditions suggest that the neighborhood is no longer attractive to people with other options. These regularities have been repeatedly confirmed in metropolitan areas (Lee and Wood 1991) and in central city settings (Taeuber and Taeuber 1965; Guest and Zuiches 1971) as well as in suburban regions (Guest 1978; Logan and Schneider 1984). We will test whether they continue now to be predictors of disappearing all-white neighborhoods in multiethnic metropolises or whether, in this new context, minorities gain entry even into "higher-status, more integrated communities," as Farley and Frey suspect.

Entry of Blacks into Mixed Neighborhoods including Whites

The initial entry of blacks into a neighborhood with whites is less common than the entry of Hispanics or Asians. In the New York metropolis, out of more than 1,000 all-white tracts in 1970, only five had made the transition to white-black in 1990 (Alba et al. 1995). In contrast, more than 200 all-white tracts experienced the entry of blacks along with Hispanics or Asians. A larger number, more than 400, experienced Hispanic or Asian entry without blacks. In Friedman's (2008) national sample, the transition from predominantly white to white-other-race in the 1980s was three times more likely than the transition from predominantly white to white-black. In the 1990s, it was seven times more likely.

Explaining black entry into mixed neighborhoods creates a test of two clearly competing hypotheses. From the perspective of invasion succession, as noted above, the main predictors of black entry should be indicators of weak neighborhood resources: low average income, transient population, and so on. The buffering hypothesis suggests that a strong predictor of black entry should be the prior presence of more Hispanics or Asians, with no necessary implication that the neighborhood is becoming less attractive to people of any race.

White Flight

A third theoretically crucial kind of transition is the loss of the white population from racially mixed neighborhoods. White flight was common in the New York metropolis during 1970–90. About one in four white-black tracts in 1970 had no white presence in 1990; the same was true of about a third of white-black-Hispanic tracts and about one in five tracts that had included all four groups. Remarkably, white flight (by this measure) rarely occurred except in tracts that had a black presence at the

initial time point. In Friedman's (2008) research, declining white presence is indicated by the shift from "multiethnic" to the predominantly minority categories, where the percentage white dropped below the 40% threshold. This transition occurred in 35% of multiethnic neighborhoods in the 1980s and 43% in the 1990s.

Once again, from an invasion-succession perspective the key hypothesis is that white flight is precipitated by community decline. From the perspective of multiethnic buffering, the hypothesis is that white flight from areas with a black presence is less likely in places with a larger share of Hispanics and Asians.

These considerations lead to the following hypotheses about the predictors of these three specific types of transition. As noted above, there is considerable empirical support for the invasion-succession model, while the relevance of buffering has yet to be demonstrated.

Invasion-Succession Hypothesis.—*Minorities are more likely to enter all-white neighborhoods, blacks are more likely to enter mixed neighborhoods, and whites are more likely to desert areas with a lower-income, more transient population and other indicators of unattractiveness in the housing market.*

Buffering Hypothesis 1.—*Minority entry into all-white neighborhoods is unrelated to levels of market attractiveness or is more likely in areas with average or higher attractiveness.*

Buffering Hypothesis 2.—*Black entry into neighborhoods with a white presence is more likely in areas with a higher share of Hispanic and Asian residents.*

Buffering Hypothesis 3.—*White flight from neighborhoods including blacks is less likely in areas with a higher share of Hispanic and Asian residents and may be unrelated to levels of market attractiveness.*

RESEARCH DESIGN

To test these hypotheses, our plan is to analyze neighborhood change in racial composition using information from 1980 through 2000. We first develop criteria for a multifold classification of local areas on the basis of the distribution of residents by race and Hispanic origin. We evaluate the distribution of neighborhoods across these types in 1980 and 2000, showing the overall rise and fall of each category. We then trace the evolution of each type of neighborhood. As we shall show, when diversity is reduced it is most often the result of white exodus from racially mixed neighborhoods, and when diversity is increased it is most often not by white entry but rather by introduction of a new minority group into a neighborhood where whites are already present. We then analyze the

predictors of the key paths of change that represent increasing or decreasing diversity.

Data Sources

This study relies on tract-level data from the U.S. population census in 1980, 1990, and 2000. Census tracts are geographic areas that typically have a population between 2,500 and 8,000. Although designed to be relatively permanent, geographic boundaries of census tracts do change over time. Across censuses, tracts can be merged, split, or otherwise reconfigured; this poses a challenge to the comparability of tract geography over time. Therefore, we use the Neighborhood Change Database (NCDB; see http://www2.urban.org/nnip/ncua/ncdb.html), which provides 1970–2000 long-form census variables recalculated and normalized to the 2000 census tract boundary. As a result, all higher-level geographies including metropolitan regions for previous censuses adopt the 2000 census's definition.

NCDB was jointly developed by the Urban Institute and Geolytics. It employs geographic information system (GIS) mapping procedures to overlay tract boundaries from different census years to identify boundary changes. Block-level components are used to reconfigure the discrepant earlier tracts to conform to the 2000 geography, and block-level demographics from the 1990 redistricting release PL94-171 are used to determine the population proportion of each earlier tract to be assigned to the new 2000 tract. These population weights are then applied to the various 1980 and 1990 tract-level variables to convert them to 2000 tract boundaries (Tatian 2003, app. J). Despite its utility, several limitations of this data set need to be kept in mind. For several reasons, NCDB does not provide a perfect match between censuses. Some complex patterns of boundary changes make exact reconfiguration impossible. For instance, 45% of 1980–2000 matching in NCDB involves multiple tracts at both censuses, which makes it much more prone to error than the simpler scenario of a merger or a split. In addition, the reconfiguration is based on assumptions made in order to estimate data values for reconfigured tracts: (*a*) that the population is randomly spread within blocks, (*b*) that social and economic characteristics of the residents are homogeneous across blocks within tracts, and (*c*) that block-level population distributions from 1990 can be applied to 1980.

Consistent with the prior literature, we study four groups in this article: non-Hispanic whites, non-Hispanic blacks, Hispanics, and Asians. For 1980 and 1990, when respondents could choose one racial group only, the combined use of race and Hispanic origin variables allows unequivocal categorization of these groups. The categorization became more compli-

cated for 2000, when respondents were allowed to select one or more of six racial categories. NCDB adopted "racial bridging" rules to create categories comparable to prior censuses, by assigning multiracial groups to single-race groups. Because multiracial selection is rare (about 2% of respondents nationwide selected more than one racial group), little error is introduced by the use of these racial categories. NCDB's race data rely on long-form tables drawn from a one-in-six sample only, which introduces some random error into the data set.

To simplify the presentation, in the following tables we have aggregated data for tracts in all metropolitan regions in the sample. There are significant differences across regions in the relative proportions of types of tracts, but similar trends are found in all of them.

Method of Classification and Analysis

The analysis involves several steps. The first two are decisions about method. One is the choice of metropolitan regions to include in the study, on the basis of the racial/ethnic composition of their populations during 1980–2000. Another is to solve the problem of neighborhood classification. What are the exact criteria to delineate the conceptual categories that the study is based on, for example, how "white" is an all-white tract, and what representation of a group in a tract is enough to count the group as "present"?

Having made these methodological choices, our exploration of the data begins with documentation of trends over time in the relative frequency of different types of neighborhoods and in the proportion of group members who live in each type. Here we demonstrate the disappearance of all-white neighborhoods, the rapid growth of the most diverse four-group neighborhood, and the persistence of various types of minority neighborhoods. We also show that the results are not dependent on a particular classification scheme but appear in a similar pattern even when very different criteria are used to classify neighborhoods.

The next step is to examine the evolution of neighborhoods. Following the lead of prior studies, this is done through construction of a transition matrix. We have studied transition matrices for the single decades 1980–90 and 1990–2000. Here we present mainly the results for the full two-decade period, 1980–2000. For every tract in 2000, the transition matrix reveals the category that the tract fell into 20 years before. It shows that some pathways of change and some kinds of persistence are remarkably common, while others are rarely found. For the three key transitions—from all white to mixed, the addition of blacks to tracts with the other three groups, and the loss of whites from the most diverse tracts—data are also presented on decade-by-decade changes. These descriptive anal-

yses and their interpretation in terms of pathways of racial change are the basis for the core conclusions of the study. Subsequent analytical steps are intended to examine why these transitions occur, testing the applicability of invasion-succession and buffering explanations.

IDENTIFYING DIVERSE METROPOLITAN AREAS AND DIVERSE NEIGHBORHOODS

The new diversity spawned by immigration is hardly uniform across the country. Figure 1 illustrates the variations in the percentage of the population born abroad in 2000 by metropolitan region. The darkest-shaded areas had more than 15% foreign born, while the lightest areas had less than 5%. Clearly, we should not be looking for global neighborhoods in much of the United States, especially not in parts of the Midwest and South where the traditional black-white color line prevails. But what level of diversity is enough to merit a closer look?

The problem of establishing cutoffs is critical in this study because we need to set criteria first for which metropolitan regions to study and then to classify census tracts within them. We have experimented with several alternative approaches at the metropolitan level, seeking criteria that would (1) establish that there is a significant presence of whites and all three minority groups but (2) not disqualify a region if one of the three minority groups fell modestly short. We have selected 24 metropolitan regions where in 1980, 1990, and 2000 at least two minority groups were present at or above their average national level and the third group was present at or above one-half of their average national level.[2] Table 1 lists the threshold values. These shifted over the decades, beginning quite low for Asians (1.1% in 1980, meaning only 0.55% was the absolute minimum presence for that year for a metropolis to be included in our sample). The analysis includes only metropolitan regions that met these criteria in every decade. Arguments could be made for studying more metropolitan regions or fewer; we view our criteria as a starting point for future studies.

These selection criteria identify a set of metropolitan regions that clearly stand out from the U.S. average. In 2000 the aggregate population of these areas was less than half non-Hispanic white (49.1%), and it was 14.4% non-Hispanic black, 27.4% Hispanic, and 8.8% Asian. The selection includes many of the largest metropolises: New York (plus Newark, Jersey City, Bergen-Passaic, and Trenton), Chicago, and Los Angeles. The West and Southwest are well represented, especially California (San Francisco,

[2] As noted above, Frey and Farley (1996) described as "multiethnic" a larger set of 37 areas in which any two minority groups were present to this degree in 1990, regardless of the population of the third group.

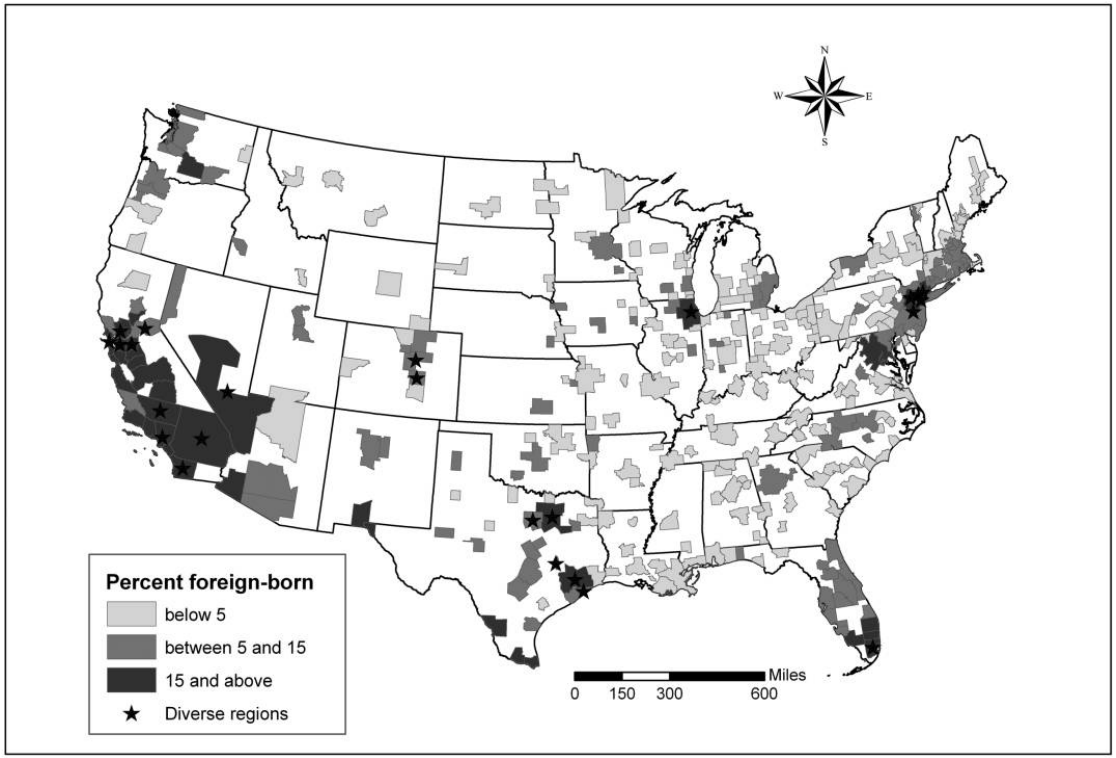

FIG. 1.—U.S. population percentage foreign born

TABLE 1
AVERAGE COMPOSITION OF METROPOLITAN AREAS IN THE UNITED STATES

	1980		1990		2000	
	%	SD	%	SD	%	SD
Non-Hispanic white ...	82.7	14.2	80.2	15.3	74.8	16.7
Non-Hispanic black ...	9.5	9.8	9.9	10.0	10.9	10.6
Hispanic	5.9	11.6	7.3	12.8	9.9	14.3
Asian	1.1	3.5	2.0	4.1	2.9	4.8
Other	.8	.9	.7	1.8	1.5	2.0
Total	100		100		100	

Sacramento, San Diego, Bakersfield, Oakland, Riverside, Stockton, and Vallejo) and Texas (Dallas, Fort Worth, Houston, College Station, and Galveston). Others, more regionally isolated, include Miami, Denver, Colorado Springs, and Las Vegas. These metropolitan regions are identified with a star in figure 1.

The next methodological decision is how to classify census tracts within each metropolitan region in terms of the specific combination of groups that are present in them. Unlike Denton and Massey (1991), we are interested not only in the combinations of minority groups but also in the variable presence of non-Hispanic whites. This brings to 15 the number of neighborhood types that we will need to track (as in Alba et al. 1995). They could be all white, all black, all Hispanic, or all Asian. They could include any combination of two groups (white and black, black and Hispanic, etc.) or of three groups, or they could include all four groups.[3]

What should be the criteria for classifying tracts into these categories? As Smith (1998; see also White 1986) points out, most measures of neighborhood diversity or integration are based on the relative presence of group members (i.e., their percentage of the population) rather than their absolute number. This is true of the Index of Dissimilarity, in which a group that is present in a subarea to the same extent as it is in the full area (regardless of its absolute size) does not add to the value of the segregation score. It is also characteristic of Maly's (2000) Neighborhood Diversity Index and classification schemes used by Ellen (2000) and Fasenfest, Booza, and Metzger (2004). Yet some previous studies of racial transitions used a fixed numerical threshold: 30 residents for the 1970–80 decade (Denton and Massey 1991) or 100 residents for 1970–90 (Alba et al. 1995). One difficulty with a fixed number is that tract populations

[3] For simplicity, these types are referred to below with abbreviations that identify which groups are present. For example, "A" denotes an Asian-only tract, and "WBHA" denotes a tract where all four groups are present.

vary widely, and 30 group members are a stronger presence in a tract with 150 residents than in a tract with 7,500 residents (these sizes are not typical but also not rare). To reduce the impact of such variation in tract size, Alba et al. (1995) limited their analysis to tracts with at least 500 residents. Another difficulty is that any fixed number will be more difficult to attain for a small group (this would be Asians in most metropolitan regions) than for a large one and will represent a different degree of under- or overrepresentation.

For some purposes, a fixed number may be the right choice; even in a very large tract, a population of 30 or 100 group members does establish a presence. We choose to use a percentage criterion instead. Our criterion also takes into account the group's share of the total population in the metropolitan areas that we study. This is not true of all indexes. For example, the Entropy Index reaches its maximum value of diversity in cases in which every group is present in the same proportion (if there are four groups, therefore, the most diverse neighborhood is the one with 25% of the population from each group). This is an unreachable standard because groups vary in overall size. In fact, it may not be a desirable criterion. In most metropolitan regions, a neighborhood that is 25% Asian represents an extreme level of Asian concentration, while a 25% non-Hispanic white neighborhood is one where whites are severely underrepresented. We use as a reference point the percentage of each group in the overall population of the 24 metropolises in each year (1980, 1990, and 2000) of the study. Allowing the reference point to shift over time responds to the rapid growth of Hispanic and Asian populations. If the same criterion were used throughout the period, the growth of these groups would necessarily result in a rising number of tracts where they are present, even if there were no shift in their relative location across neighborhoods. It could be argued that the criteria should also vary across metropolitan regions. In a study focused on a single region, we would agree that the criteria should be tailored to that region's racial and ethnic makeup. In this study in which results are aggregated across all 24 "diverse" regions, our preference is to ensure that the criteria identify similar kinds of places in every region.

Even these choices leave open the question of how closely a group's share of the tract population needs to approach the group's share of the aggregate population to qualify as "present." We have tested in the range of 10%–50% of the aggregate share. This means, for whites in 2000, for example, who were 49.1% of the population in our diverse regions, that we tested criteria ranging from as little as 5% (this is the 10% criterion) to as high as 25% (this is the 50% criterion) of the tract population. At any of these levels, whites were underrepresented, but one could argue that there were "enough" whites to classify them as present. For the

smallest group, Asians, who were 8.8% of the aggregate population, we tested criteria as low as 0.9% and as high as 4.4% in the tract.

We adopt the 25% criterion for the remainder of this study. We have replicated all of the analyses for the 15% and 50% criteria, and results on the patterns of change are robust across the threshold levels that we tested. The appendix provides a comparison of the distribution of tracts in 1980, 1990, and 2000 based on each of these percentage criteria. The appendix also compares the distribution of tracts over time based on the 25% criterion with the alternative of an absolute number threshold of 100 persons.

To clarify how tracts are classified by the 25% criterion, table 2 presents the average racial composition of each category of tract in 1980, 1990, and 2000. The table shows that all-white tracts averaged 93.7% white in 2000, with small shares of black (0.9%), Hispanic (3.8%), and Asian (1.1%) residents. All-black tracts averaged 94.8% black, all-Hispanic tracts 92.4% Hispanic, and all-Asian tracts 86.2% Asian. At the other extreme, the most diverse type of tract containing all four groups (WBHA) had an average composition very close to each group's share of the total metro population. They had a near majority of white residents (47.9%; somewhat below whites' 49.1% share of the total population of these metros). Blacks were 13.1%, compared to 14.4% of the metro total. Hispanics were 26.7%, close to their 27.4% of the population. And Asians were 11.9%, compared to 8.8% of the total. The results in table 2 make as clear as possible what we have in mind when we use terms like all white, all minority, or diverse to describe neighborhoods.

The table also shows some shifts in the average composition of different types of tracts between 1980 and 2000. These shifts reflect the general decline in the non-Hispanic white share of the population and the growth of the Hispanic and Asian populations in these regions. The average WBHA tract in 1980, for example, had a much larger white population (59.2%) and fewer Hispanics (18.5%) and Asians (6.8%) than that category of tract in 2000. The growing number of black-Hispanic tracts shifted from having a majority of black residents in 1980 (63.9% black and 30.3% Hispanic) to nearly equal shares of both groups (48.4% and 47.0%, respectively). Blacks were typically the largest group in BHA tracts in 1980 but very much outnumbered by Hispanics in 2000. And in nearly every category of tracts with a white presence, the percentage of whites declined during these years. This said, the changes did not make the differences between these categories less meaningful. Table 2 demonstrates that each category retained the distinctive average profile that is intended by our approach to classification.

TABLE 2
AVERAGE COMPOSITION OF TRACTS BY TYPE IN 2000 (25% Criterion)

	1980				1990				2000			
	W	B	H	A	W	B	H	A	W	B	H	A
A	9.7	1.0	2.6	87.3	8.0	1.1	2.5	88.8	6.3	1.2	2.5	86.2
H	8.7	.7	89.9	.3	7.5	.6	91.1	.6	6.1	.8	92.4	.7
HA	7.9	.8	80.8	10.3	8.2	1.3	75.0	15.7	6.7	1.4	71.6	20.3
B	2.5	95.7	1.5	.1	2.1	95.8	1.6	.2	1.8	94.8	2.6	.4
BA	5.4	88.3	2.3	3.8	5.0	82.2	3.0	9.6	3.5	81.6	3.9	10.5
BH	5.1	63.9	30.3	.2	4.0	58.0	37.2	.4	3.6	48.4	47.0	.8
BHA	7.5	54.7	32.7	4.7	6.5	38.4	45.2	9.6	6.4	30.7	49.9	12.5
W	97.0	.5	1.9	.4	95.8	.6	2.7	.6	93.7	.9	3.8	1.1
WA	93.5	.9	2.2	3.2	89.2	1.1	3.2	6.4	83.7	1.3	4.2	10.5
WH	77.5	.8	20.7	.4	73.2	1.1	24.3	.8	62.7	1.3	34.2	1.1
WHA	75.6	1.3	17.6	5.0	69.3	1.6	19.9	8.9	61.6	1.7	24.6	11.7
WB	71.3	25.8	2.2	.3	72.7	23.1	3.2	.6	64.4	30.0	4.3	.9
WBA	78.2	15.2	2.6	3.8	75.5	14.2	3.6	6.4	72.0	12.7	4.9	10.0
WBH	52.5	26.1	20.6	.3	52.0	21.6	25.1	.7	44.0	20.1	34.3	1.1
WBHA ...	59.2	15.0	18.5	6.8	54.8	13.2	21.9	9.7	47.9	13.1	26.7	11.9

NOTE.—A = Asian; B = black; H = Hispanic; W = white.

TRANSITIONS

We now report the volume of various types of changes in racial composition, beginning with how many people were affected by these changes. To do this, we start with a simplified tabulation that divides tracts into just four categories, on the basis of whether whites were present in 1980 or 2000. These are (1) all-minority tracts (with varying combinations of minority groups) in both 1980 and 2000, (2) mixed tracts where whites were present in varying combinations with other groups in both years, (3) tracts that had no white presence in 1980 but gained a white presence by 2000, and (4) tracts where whites were present in 1980 but not in 2000—examples of white exit. Table 3 provides these population counts for both 1980 and 2000.

In this simplified scheme, where did members of each group live, and in what setting did their numbers increase the most? The figures show that neighborhood changes had relatively small effects on the distribution of the white population. There was a modest shift associated with white exit. Out of more than 29 million whites, about 1.5 million lived in tracts that experienced this sort of change in 1980, and only about 0.4 million whites remained in them in 2000. So the volume of white exit by this measure was 1.1 million. This loss was nearly balanced by an increase of the white population in tracts that retained a white presence in combination with one or more minority groups, a change that represents

TABLE 3
POPULATION OF TRACTS IN FOUR CATEGORIES, 1980 AND 2000

	ALL MINORITY IN 1980			WHITES PRESENT IN 1980		
	All Minority in 2000	Added Whites	Total	White Exodus in 2000	Whites Remained	Total
Population:						
1980	6,432,347	242,941	6,675,288	4,257,389	34,586,763	38,844,152
2000	6,459,392	274,143	6,733,535	5,713,175	47,830,414	53,543,589
Whites:						
1980	321,701	25,744	347,445	1,549,855	27,803,012	29,352,867
2000	160,676	71,153	231,829	420,199	28,671,006	29,091,205
Blacks:						
1980	4,221,973	130,418	4,352,391	831,416	1,650,360	2,481,776
2000	3,402,498	103,359	3,505,857	1,364,433	3,902,091	5,266,524
Hispanics:						
1980	1,732,996	73,340	1,806,336	1,634,364	3,721,124	5,355,488
2000	2,665,656	72,275	2,737,931	3,322,606	10,595,073	13,917,679
Asians:						
1980	133,286	12,341	145,627	221,361	1,265,114	1,486,475
2000	215,533	25,732	241,265	589,132	4,489,381	5,078,513

growing exposure to diversity. There was therefore little net change in exposure of the white population to minorities. Almost entirely absent was movement of whites into newly integrated neighborhoods that were previously all minority.

In contrast, for each minority group the predominant change was growth in tracts that had a white presence in 1980 and where whites remained in 2000. This pattern generally represents increasing diversity. It was the Asian population that most dramatically increased exposure to whites by this measure. The number of Asians more than tripled in tracts with a continuing white presence, an increase of 3.2 million. In comparison, Asian growth in areas of white exodus and in all-minority tracts was modest.

For blacks and Hispanics, there were large shifts in the direction of both increasing diversity and persistent segregation. Representing greater exposure to whites, the total black population of tracts where whites remained more than doubled, increasing by about 2.3 million, while the number of blacks living in tracts that remained all minority dropped by 0.8 million. The countertrend is that about 1.4 million blacks lived in places that became all minority in 1980 because whites exited, and these tracts themselves housed a growing black population. Consequently, a majority of blacks continued to live in all-minority neighborhoods despite the trend toward diversity. The Hispanic population exploded in tracts where whites maintained a presence, from 3.7 million in 1980 to 10.6

million in 2000. But this growth was also partly counterbalanced by the 3.3 million Hispanics who lived in areas of white exodus and the increase of 0.9 million in areas that remained all minority.

We turn now to a more detailed examination of change over 20 years at the tract level. Results are presented in table 4 in the form of a 15 × 15 transition matrix. Tracts listed across the columns are categorized by their composition in 2000; their 1980 composition is shown in the stub column. Cell entries are the number of tracts, not taking into account their population size. The discussion below includes information, which is not found in the table, on the average racial composition of tracts in each cell in 1980 and 2000. We have also examined the separate 1980–90 and 1990–2000 transition matrices and found a smaller volume of change, but in similar directions, in both decades. We summarize some of the most significant 10-year paths of change in more detail in a following section.[4]

Changes in Tracts with a White Presence

We begin with the lower-right-hand quadrant of table 4: tracts that had a white presence in both 1980 and 2000. The single most notable change is increasing diversity of tract composition where whites are present. For example, there has been a substantial decline in the share of all-white tracts. Of the 1,210 all-white tracts in 1980, only 333 remained all white. These 333 tracts averaged 97.5% white in 1980 and remained 94.0% white in 2000. Nearly three-quarters of the all-white tracts added other groups,

[4] One question raised in the review process is whether the picture might be different for metropolitan areas that met the criteria in 1980 but fell below the threshold criteria in either 1990 or 2000. There were three such cases: Merced, Calif. (population 210,554 in 2000), Salinas, Calif. (401,762), and Vineland-Millville-Bridgeton, N.J. (146,438). Merced and Salinas had very large Hispanic populations by 2000 (over 45%), substantial Asian populations (over 8%), but modest and declining black populations (3.9% and 4.0%, respectively). Vineland-Millville-Bridgeton had large Hispanic and black populations throughout the period but a small Asian presence (falling below our threshold in 2000 with only 1.1% Asian). These three metropolitan regions contain only 158 census tracts, not enough to have a major impact on the findings reported here. They are distinctive in including only one tract that was all minority in 1980 and remained all minority, and only 21 tracts that became all minority in 2000 as a result of a declining white population share. Trajectories of other tracts are similar in some respects to what is reported here for the sampled regions: the largest share of tracts in 2000 were WHA and WBH, the largest source of WBHA tracts were those that were previously WHA, and the majority of WBHA tracts in 1980 remained WBHA. One difference is that by 1980 there were only two all-white tracts in these metropolitan regions. Another difference, likely because of the declining black populations in the two California cases, is that 10 of 42 WBHA tracts in 1980 lost a black presence in 2000, reverting to the WHA category.

TABLE 4

TRANSITION MATRIX FOR TRACT RACIAL/ETHNIC COMPOSITION, 1980–2000

CATEGORY IN 1980	TRACT CATEGORY IN 2000																TOTAL
	A	H	HA	B	BA	BH	BHA	W	WA	WH	WHA	WB	WBA	WBH	WBHA		
A	2	0	0	0	1	0	1	0	2	0	0	0	0	0	0		6
H	0	59	9	0	1	5	1	0	0	3	1	0	0	1	5		85
HA	1	38	54	0	0	6	9	0	1	0	0	0	0	0	0		109
B	0	1	0	383	23	107	25	1	0	0	2	4	6	2	2		556
BA	0	0	0	21	9	10	9	0	0	0	0	0	2	0	10		61
BH	0	7	1	61	9	420	93	1	0	1	0	1	2	11	10		617
BHA	0	4	16	24	10	142	165	0	0	0	1	0	1	7	15		385
W	0	0	0	1	1	0	2	333	301	137	166	41	46	58	124		1,210
WA	0	0	0	2	1	0	0	112	706	33	240	17	112	18	209		1,450
WH	0	90	13	1	0	20	5	45	46	345	353	4	12	139	270		1,343
WHA	1	82	161	4	1	14	49	22	292	193	1,424	5	48	109	1,301		3,706
WB	0	0	0	13	2	5	2	13	10	3	8	36	29	39	44		204
WBA	0	0	0	8	2	8	1	4	19	0	8	21	88	20	112		291
WBH	0	5	3	19	5	120	44	3	5	24	17	10	10	224	190		679
WBHA	1	7	49	22	6	92	315	6	37	14	137	6	75	155	1,500		2,422
Total	5	293	306	559	71	949	721	540	1,419	753	2,357	145	431	783	3,792		13,124

especially Asians alone (301), Hispanics and Asians (166), or Hispanics alone (137).

The largest increase in tracts with a white presence was for WBHA tracts, which rose from 18.5% to 28.9% of all tracts. This repeats what was already shown in table 2. What is new is information about the trajectories leading to this outcome. The rise in WBHA tracts is mainly because of the stability of tracts that already contained all groups in 1980 and because of the entry of blacks into tracts that previously contained only whites, Hispanics, and Asians. About a third of tracts that were WBHA by 2000 had been WHA in 1980. Hence, the main pathway toward the most diverse racial composition is through the intermediate step of having all groups except blacks. WHA tracts that became WBHA averaged less than 2% black in 1980 but 8.5% black in 2000, an appreciable gain. They also gained Hispanics and Asians. These tracts had been predominantly white (79.1%) in 1980, and they remained, on average, majority white (50.1%) in 2000.

Table 4 demonstrates that it is rare for blacks to enter a tract with white presence, except when both Hispanics and Asians were already in place. The implication is that the all-group tract is the main route to black-white integration. This point is made in a simple but powerful way in figures 2 and 3. These figures present scatter plots that show how the 1980–2000 increase in the percentage of whites and blacks who live in WBHA tracts in a metropolitan region is associated with a decline in segregation in that region (as measured by the Index of Dissimilarity). Only San Francisco is omitted because this is the one metropolis in which there were actually losses in the shares of whites and blacks in this type of tract. The association for the remaining 23 regions is strong (with R^2 of .67 and .76). Growth of WBHA tracts is a powerful predictor of declining segregation.

About two-thirds of WBHA tracts in 1980 remained in the same category by 2000, representing a high level of what could be called stable integration. Of the remainder, nearly 500 lost white presence. A slightly smaller number retained white presence but lost one or more minority groups. These departures limit the contribution of WBHA tracts to black-white integration. Of more concern for the future, the stock of WHA tracts is diminishing. WHA tracts were positioned in 1980 to contribute heavily to creation of all-group tracts because, at that time, they were the most numerous type, accounting for 28.2% of all tracts. But the number of newly minted WHA tracts created from tracts that had been white, white Asian, or white Hispanic in 1980 is not keeping up with the number of transitions from WHA to another type. Hence, the potential for continued creation of the most diverse neighborhoods—while still considerable—is more limited in 2000 than it was in 1980.

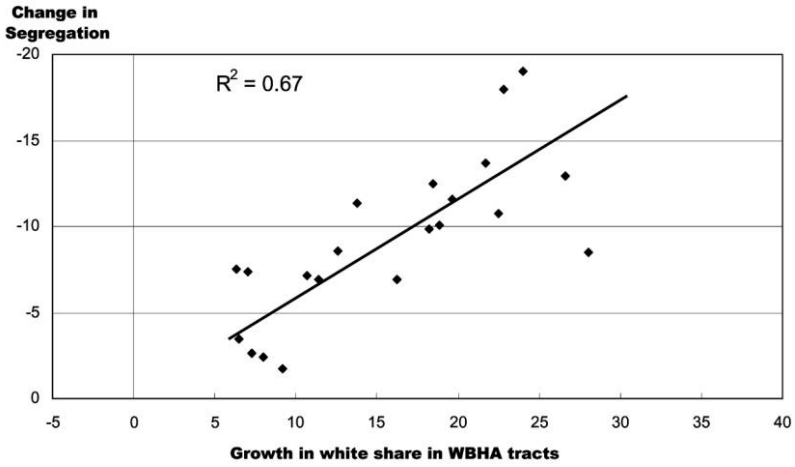

FIG. 2.—1980–2000 percentage increase of whites in WBHA tracts and associated decline in segregation.

Changes in Tracts with No White Presence

We now turn to the situation of all-minority tracts. These, too, are increasing in number, a rise of more than 50% (from 1,819 in 1980 to 2,904 in 2000). More than half (1,727) of all-minority tracts in 2000 were already all minority in 1980 (these are tracts in the upper-left quadrant of table 4). But a considerable number (1,177) resulted from white exit. For example, 492 tracts that were WBHA in 1980 lost their white presence by 2000, the largest share becoming BHA. Such tracts tended to be those that already had a smaller white share in 1980. Those that remained WBHA averaged 64.5% white in 1980, while those that transitioned to BHA had averaged only 39.6% white. Still, the white exodus was considerable, with the white share falling to 7.9% in 2000 in those that became BHA.

White decline is especially important because it appears to be a one-way transition (in the vocabulary of Markov chains, the all-minority category is an absorbing state). Standing out for its absence is a type of change that involves whites moving into minority areas. For example, almost no WHA tracts in 2000 had previously been all Hispanic, all Asian, or mixed HA, although in principle the addition of whites to such neighborhoods could have been a contributor. In fact there are very few cases of any type in which whites were not present in 1980 but had entered by 2000 (this is the upper-right quadrant of table 4 that contains only 92 tracts). This finding provides a strong counterpoint to the rapid growth in the number of WBHA neighborhoods, and it is reminiscent of a key

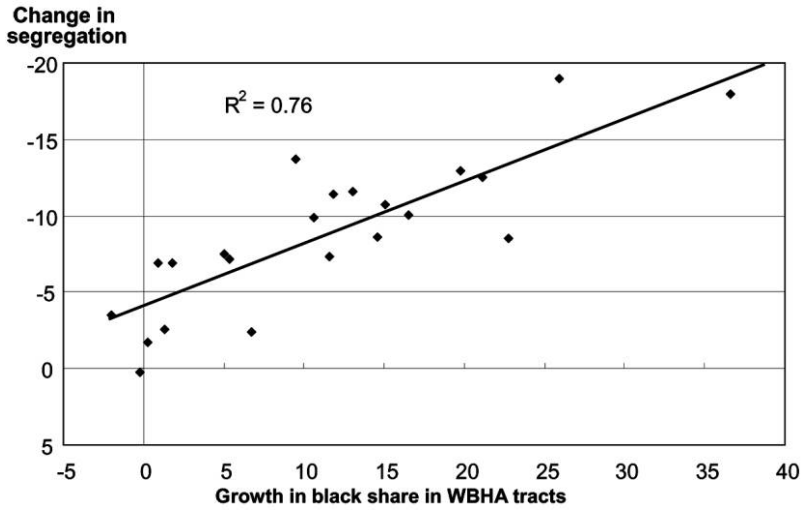

FIG. 3.—1980–2000 percentage increase of blacks in WBHA tracts and associated decline in segregation.

feature of the classic black-white scenario. Invasion and succession in that model were understood to operate principally in one direction; once tracts became all black, it was assumed that a new stable equilibrium had been reached. All-minority tracts are now in the same position of having very little likelihood of future white presence.

Black-only tracts are a significant category. Their number has remained steady over time because a roughly equal number of black tracts add Hispanics or Asians versus those that become all black because of the loss of other groups. Hispanic-only tracts, by contrast, have increased. The main source of new Hispanic tracts is the loss of whites and Asians from formerly WH or WHA tracts. Hispanic-Asian tracts have grown in number for a similar reason, mainly from the loss of whites in WHA tracts. And black-Hispanic tracts have also increased, partly from the addition of Hispanics to formerly black tracts but more often from the loss of whites or Asians from formerly more diverse areas.

One other pathway of change stands out in this table: Asian exit from tracts that were all minority in 1980. In fact, close to half of BHA tracts, half of HA tracts, and half of BA tracts in 1980 lost their Asian presence. These tended to be tracts whose Asian populations were originally relatively small, and a typical change was from about 2.5% Asian to less than 1% Asian.

Changes from Decade to Decade

More can be learned by examining the history of transitions in each decade, separating 1980–90 from 1990–2000. At this level of detail, we focus only on the three starting points that are most important in the global neighborhood context. One question is regarding the trajectory of all-white tracts, where the introduction of Asian or Hispanic presence is presumed to be the least threatening racial change in the perception of white residents, and the introduction of blacks is another theoretically significant alternative. Another is transitions involving WHA tracts, where the most relevant changes involve adding black population (becoming WBHA) or losing white presence. A third concern is the durability of WBHA tracts, which may also experience white exodus or lose the presence of one of the minority groups. The main transitions are displayed in table 5. This table shows the most common outcomes in 1990 and 2000 for tracts that were WHA, WBHA, or W in 1980. The "other" category is the sum of all less common outcomes.

We first note the high degree of stability of WBHA tracts compared to all other types. Neighborhoods often move over time across categories, in part because many of them are near the cutting points that were used to define the categories. The typical case is that 40%–60% of tracts remain in the same category. But table 5 offers three instances of what happens to WBHA tracts over a decade, and in every one, more than 70% remain WBHA. The relative durability of this form of diversity contradicts the usual tipping point assumption of the invasion-succession model. This result suggests that relatively stable integration is possible in a global neighborhood context.

Another observation is the prevalence of certain specific sequences of change. White tracts (W) in 1980—if they do not remain all minority—are most likely to become white and Asian (WA) in 1990. But they are unlikely to gain a black presence at this point. Then in the following decade, the most common outcome of change is to become WHA. And if they had already moved from W to WHA in the 1980s, the most likely outcome of change is to add black presence as the next step. Similarly, WHA tracts in 1980, if they change, are most likely to become WBHA in 1990 and stay WBHA in 2000. There is a clear pattern of incremental introduction of additional minority groups to areas with a white presence (blacks after Asians and Hispanics), and this phenomenon is key to the emergence of the most diverse global neighborhoods. White exit is among the least likely transitions for WA, WH, WHA, or WBHA tracts, contrary to the expectations of invasion succession.

Third, and perhaps surprising in light of these common sequences, is the weakness of path dependence. That is, the percentage of tracts in

TABLE 5

TRANSITION PROBABILITIES FOR 1980–90 AND 1990–2000: NUMBER AND PERCENTAGE OF TRACTS FOLLOWING EACH PATH

	1980	1990			2000		
Type	No.	Type	No.	%	Type	No.	%
WHA	3,705	WHA	2,018	54.5	WHA	1,196	59.3
					WBHA	508	25.2
					WA	116	5.7
					Other	198	9.8
		WBHA	888	24.0	WBHA	707	79.6
					WHA	79	8.9
					Other	102	11.5
		WH	253	6.8	WH	100	39.5
					WHA	82	32.4
					Other	71	28.1
		WA	236	6.4	WA	143	60.6
					WHA	48	20.3
					Other	45	19.1
		Other	310	8.4			
WBHA	2,422	WBHA	1,771	73.1	WBHA	1,340	75.7
					BHA	183	10.3
					Other	248	14.0
		WBH	177	7.3	WBH	72	40.7
					WBHA	63	35.6
					Other	42	23.7
		BHA	159	6.6	BHA	103	64.8
					BH	28	17.6
					Other	28	17.6
		WHA	124	5.1	WHA	58	46.8
					WBHA	35	28.2
					Other	31	25.0
		Other	191	7.9			
W	1,210	W	566	46.8	W	280	49.5
					WA	128	22.6
					WH	64	11.3
					Other	94	16.6
		WA	289	23.9	WA	143	49.5
					WHA	55	19.0
					Other	91	31.5
		WH	114	9.4	WH	48	42.1
					WHA	27	23.7
					Other	39	34.2
		WHA	99	8.2	WHA	42	42.4
					WBHA	26	26.3
					Other	31	31.3
		Other	142	11.7			

category *x* in 1990 that are found in category *y* in 2000 does not depend strongly on tracts' prior category in 1980. For some categories of tracts in 1990, the only contingency that we might expect is for tracts to revert to their former category. For example, if a WHA tract had recently been all white, perhaps that would make it more likely to return to all white. Alternatively, from an invasion-succession perspective, growth in minority population in one decade is expected to be followed, fairly readily, by white exit. In that case, for example, WHA tracts in 1990 that had been all white in 1980, that had been only WA or WH, or that had experienced growth in any minority group's population during the 1980s would be more likely to lose white presence by 2000.

Table 5 offers considerable information on transitions by WHA tracts, including those that were WHA in 1980 as well as those that became WHA in 1990. They are likely to remain WHA, regardless of what category they were in previously (this is the case for 54.5% of WHA tracts in 1980, 59.3% of WHA tracts in 1990 that were already WHA in 1980, 46.8% of WHA tracts in 1990 that were WBHA in 1980, and 42.4% of WHA tracts in 1990 that were W in 1980). Otherwise they are most likely to transition to WBHA (this is the case for 24.0% of WHA tracts in 1980, 25.2% of tracts that were WHA in both 1980 and 1990, 28.2% of WHA tracts in 1990 that were WBHA in 1980, and 26.3% of WHA tracts in 1990 that were W in 1980). The small range of variation in these transition probabilities is evidence against path dependence.

It is possible to test for path dependency more rigorously with multivariate methods, controlling for other characteristics of tracts in 1980 and examining whether the tract's category in 1980—or whether change in the size of a particular group in the 1980s—affects transitions between 1990 and 2000. We have estimated multinomial logistic regression models, parallel to those for 1980–2000 that are presented in the next section.[5] Some of the effects of 1980 category and of 1980–90 population shifts are statistically significant, but they do not present a clear pattern.

First, all-white tracts in 1990 that had been more mixed in 1980 (WA or WHA) were more likely to add Hispanic or Asian presence by 2000, suggesting a tendency for reversion to their prior category. But curiously, higher gains in Hispanic residents in the 1980s diminished the likelihood to add Hispanic or Asian presence by 2000. There were no effects of 1980 category or 1980–90 changes on the likelihood of adding a black presence by 2000 to these all-white tracts.

There are confusing effects for tracts that were WHA in 1990. Here there is no tendency to return to the prior category. The opposite is true: those that had been all white in 1980 were more likely to add a black

[5] Model results are not presented here; tables are available on request.

presence (becoming WBHA), while those that had been WBHA in 1980 were less likely to add blacks and return to the WBHA category. Those that had been WH in 1980 were more likely to experience white exodus by 2000. If a Hispanic population grew more in the 1980s, it was more likely that a black presence would be added, perhaps supportive of a buffering hypothesis.

Finally, WBHA tracts in 1990 that had been all white in 1980 were significantly more likely to lose white presence by 2000. The history of white presence, for some reason, shows little staying power in this case. More understandably, the greater the increase in black, Hispanic, or Asian population in the 1980s, the more likely it is that whites would be absent by 2000.

PREDICTING PATHWAYS OF STABILITY AND CHANGE, 1980–2000

Having found little evidence that changes in one decade are affected by conditions or changes over the previous 10 years, we focus our attention now on predicting transitions across the full 20-year period. These transitions have the advantage that they are less likely than 10-year changes to reflect random or short-term fluctuations. We test hypotheses from the invasion-succession and multiethnic buffering perspectives using multinomial logistic regression and logistic regression models to analyze changes between 1980 and 2000. In each model the reference category is "remaining the same," and model coefficients estimate the impact of independent variables on the odds of experiencing a particular change outcome.

To simplify the analysis (considering that there are 15 starting points, each of which has 15 possible outcomes), we study here only the three starting points examined in table 5. For parsimony, some outcome categories have been combined to represent the substantively interesting types of change.

Prior studies of neighborhood racial change have identified several potential predictors. For example, Lee and Wood (1991) found that a growing black population was more likely in areas with close proximity to the central business district and to an all-black tract, low socioeconomic status, a younger population, and a larger share of new residents. Tracts with smaller Hispanic populations but larger shares of foreign-born residents were likely to experience greater increases in black percentage. Most important to Lee and Wood, black increases were significantly lower in the West than in the other regions of the country, and this regional variation is their main clue that succession is not a universal process.

The predictors in the following analysis include indicators of the initial

1980 racial composition (percentage black, percentage Hispanic, and percentage Asian). Nativity (share of foreign-born residents) is included here to test whether there is also an independent effect of immigration. Income (median family income) and home ownership (share of owner-occupied housing) are the key indicators of socioeconomic status and market desirability. Family composition (share of female-headed households) is another potential indicator of structural deprivation. Age composition (share of residents age 65 and above) is included as an indicator of aging in place and immobility for long-time residents, often a correlate of white flight and minority entry. Residential turnover (the share of residents who have lived in their homes for less than five years) is a likely predictor of growing minority presence because it reflects vacancies and weaker community ties, while population growth during the period (1980–2000) is viewed as an indicator of community attractiveness and also for the potential of new groups to arrive along with other newcomers.

Following Denton and Massey (1991), the model also includes several spatial variables. Characteristics of surrounding areas are summarized as dummy variables that indicate whether the tract is adjacent to an all-minority tract, an all-white tract, a WHA tract, and a WBHA tract. These variables model the spatial autocorrelation (or clustering of neighborhood types) that is evident in most regions. They represent the substantive role of proximity to all-minority areas (and conversely to all-white areas) in the invasion-succession model and proximity to neighborhoods that whites share with Hispanics and Asians in the buffering model. Regional dummy variables (representing the Northeast, North Central, and Southern states in comparison to the West) and a central-city/suburb dichotomy are also introduced as controls. Results are presented in table 6.

WHA Tracts

We begin with the analysis of the 1980 WHA tracts. One potential end state in 2000 is to remain WHA. This is treated as the reference category in comparison to two alternatives: black entry (becoming WBHA) and white exodus (in which case the most likely end point is HA). Hence, this model is a multinomial logistic regression, and other less common outcomes are omitted from the analysis. A simpler bivariate analysis (not shown here) reveals that WHA tracts that gained blacks were very similar to those that remained WHA in terms of initial racial composition and socioeconomic status. They were distinctive mainly in having a higher share of recent growth. Those that lost whites already had a much lower white presence in 1980 than those where whites remained; in fact, on average they already initially had a Hispanic majority. Their poverty rate

TABLE 6
MULTINOMIAL LOGIT MODELS PREDICTING CHANGE IN WHA, WBHA, AND W TRACTS (Compared to No Change)

	WHA Tracts				WBHA Tracts		W Tracts			
	Black Entry		White Exodus		White Exodus		Asian or Hispanic Entry		Black Entry	
	Change	SE	Change	SE	Change	SE	Change	SE	Change	SE
Minority presence:										
% non-Hispanic black	.679***	.049	.296**	.099	.066***	.006	.147	.124	.743***	.134
% Hispanic	.002	.005	.103***	.008	.073***	.007	.368***	.085	.264**	.103
% Asian	.011	.010	.073***	.013	.023*	.011	.330	.306	.241	.377
Nativity (% foreign born)	−.046***	.007	−.007	.010	.044***	.008	.054*	.022	.017	.026
Median family income (in $1,000)	−.006	.010	−.085*	.034	.046**	.018	.022	.011	−.039*	.017
% homeowner	.0014	.003	.019*	.007	.004	.004	−.014*	.007	−.012	.008
% female-headed household	.114***	.032	.111*	.056	.091**	.031	.239***	.071	.347***	.083
Age (% over 65)	2.121*	.911	−1.952	2.445	2.300	1.536	.028	1.068	−.578	1.614

TABLE 6 (*Continued*)

	WHA Tracts				WBHA Tracts		W Tracts			
	Black Entry		White Exodus		White Exodus		Asian or Hispanic Entry		Black Entry	
	Change	SE	Change	SE	Change	SE	Change	SE	Change	SE
% resident less than 5 years	.018***	.004	.012	.011	.015*	.007	−.027**	.008	−.016	.010
Population growth rate, 1980–2000	.001***	.0002	.001	.0006	.000	.0004	.003***	.0007	.003***	.0007
Metropolitan location:										
Adjacent to all-minority tract	−.252	.159	−.360	.245	.317*	.149	−.327	.340	−.907*	.440
Adjacent to all-white tract	−.135	.181	−.284	.639	−.550	.350	−.805***	.229	−1.273***	.268
Adjacent to WBHA tract	.530***	.094	.220	.200	−.165	.312	.043	.224	.677**	.251
Adjacent to WHA tract	−.877***	.261	−.975*	.431	−.218	.142	.671***	.185	.682**	.225
Central city	.365***	.101	−.181	.230	−.313*	.157	−.110	.218	.578*	.255
Region (compared to West):										
Northeast	.229	.178	.478	.357	.324	.214	.075	.341	1.185*	.492
North Central	.360	.201	1.018**	.382	−.114	.374	.433	.292	1.710***	.440
South	.959***	.165	.383	.414	1.431***	.220	.445	.264	2.267***	.375
Intercept	−1.902**	.616	−5.203***	1.392	−7.597***	.944	.324	1.118	−1.032	1.415
Likelihood ratio	7,015.9				3,498.9		2,048.4			

* $P < .05$.
** $P < .01$.
*** $P < .001$.

was also more than double that of other WHA tracts, reflecting initial differences that also appear in other socioeconomic indicators.

Table 6 shows that the odds of black entry are higher in those tracts that already had a higher black population (although they were below the threshold for black presence in 1980). In tracts that added black presence, the average black increase was about 7 percentage points, from 2% to 9%. All of these tracts began with a significant Asian and Hispanic presence. Beyond that threshold, having a larger share of Hispanics or Asians did not affect black entry. Tracts with a higher proportion of foreign-born residents had reduced odds of black entry. In this respect, the "global" composition of the neighborhood is an obstacle to greater diversity.

Income and home ownership have no effect. More female headship and an older population composition favor black entry. Blacks are more likely to enter in tracts with more recently arrived residents during 1975–80 and faster growth during 1980–2000. In both respects, population flux facilitates greater diversity. Creation of WBHA neighborhoods through this path is much more likely in central city locations and in the South. Contrary to the invasion-succession model, there is no effect of adjacency to an all-minority tract. Adjacency to an existing WBHA tract favors entry of blacks (so that the WHA tract becomes more like its neighbor). Surprisingly, being adjacent to another WHA tract decreases the odds of black entry.

The model for white exodus (again in contrast to remaining WHA) might be expected to be the inverse of the one for black entry. It is only partly so. Whites are more likely to lose their presence in tracts with higher shares of each of the three minority groups. Intuitively, one might interpret this as exodus because whites were barely above the threshold in 1980, and, thus, even a random change could result in dropping below the threshold level. But the reduction was typically more substantial than that. For example, tracts that changed from WHA to HA averaged about 32% white in 1980 but fell to below 8% white in 2000.

Of the socioeconomic variables, tracts with lower income and more female-headed households—but higher home ownership—were more likely to lose whites. There is no effect of nativity, age composition, transient population, or growth. The location variables show white exodus to be more common in North Central metropolitan regions, with no city-suburb differential. The only spatial variable with a significant effect is adjacency to another WHA tract, which decreases the odds of white exit (i.e., the WHA tract remains more like its neighbor).

WBHA Tracts

With WBHA tracts, our principal interest is in white exodus, and the model here is a binomial logit that compares this outcome with no change.

Again, when tracts lost white presence the change was substantial, not simply variation close to the threshold. In WBHA tracts that changed to BHA, for example, the average white share dropped from 40% in 1980 to 8% in 2000. Bivariate analyses showed that WBHA tracts that lost whites began in 1980 with a lower but still substantial share of white residents (39%, compared to about 65% in other WBHA tracts). They also had lower median family incomes (about $43,000, compared to over $50,000 for other tracts in this category), and they had lower standing on other socioeconomic indicators.

Similar to white exodus from WHA tracts, the model shows strong positive effects of the size of each minority group on the odds of white loss (and here Hispanic population share is more consequential than black share). White exodus is also positively associated with diversity as represented by the percentage foreign born. Socioeconomic variables have mixed effects. Surprisingly, whites were more likely to leave higher-income tracts, but they were also more likely to leave tracts with more female headship. There is no effect of home ownership or age composition. Population growth has no effect, but white exodus is greater in areas with a more transient pre-1980 population. There is a strong positive effect on white exodus of adjacency to an all-minority tract, but white exodus is surprisingly less likely in central cities. WBHA tracts in Southern metropolitan regions are more likely to experience white exodus.

All-White Tracts

Table 6 also evaluates predictors of change in tracts that were all white in 1980. As shown above, the number of such tracts declined rapidly. The multinomial logit model predicts two paths of change. One path adds an Asian or a Hispanic presence; this is the most common transition. The other adds blacks, alone or in combination with other minorities. Note that all-white tracts averaged above 95% white in 1980; in 2000 they averaged 90% white in tracts that became WA, 83% white in those that became WH, and only 70%–80% in categories that included blacks.

All-white tracts that added Asians or Hispanics only tended initially to have a higher share of Hispanics than did those that remained all white. They also had a higher initial share of foreign-born residents. In terms of socioeconomic status, they had fewer homeowners and more female-headed households, but their income levels were not different from those that stayed all white. Their level of pre-1980 residential stability was higher, and they grew more rapidly during the period. There are also some significant locational differences. All-white tracts adjacent to other all-white tracts were less likely to add Asians or Hispanics, but those adjacent to WHA tracts were more likely to do so.

All-white tracts that added blacks had a higher share of black residents to begin with. They also had more Hispanics (possibly suggestive of buffering), but the effect of percentage Asian is not significant, nor is the effect of nativity. They tended to have lower incomes and higher female headship. They also grew more rapidly than those that remained all white during the period.

Adjacency to an all-minority tract has a surprising negative effect. Adjacency to an all-white tract reduced the odds of black entry, but adjacency to a WHA or WBHA tract and central city location increased the likelihood of black entry. Black entry is more likely in the Northeast, North Central, and especially in Southern states, compared to that in the West.

Summary of Predictors of Change

One purpose of these models is to test whether minority entry or white exit are associated with the market weakness posited by invasion succession. The answer is mostly negative. Important signs of market weakness, including a high share of elderly residents, a transient population, and slow population growth, do not have the predicted effects. Black entry into WHA tracts and both Asian/Hispanic and black entry into all-white tracts are in fact more likely in places with growing populations, contradicting invasion succession. A few coefficients are in the expected direction. Higher female headship predicts greater likelihood of Asian/Hispanic or black entry into all-white tracts, and minority entry is less likely in tracts with more home ownership (Hispanic/Asian entry) or higher income (black entry). But of these indicators, only female headship, not income or ownership, is related to black entry into WHA tracts, and this finding raises the possibility that the presence of Hispanics or Asians in these tracts (or buffering) changes the traditional dynamic.

The main expectation based on the buffering hypothesis is that black entry would be facilitated by greater Asian and Hispanic presence and that white exodus from integrated tracts would be less likely where there are more Asian and Hispanic residents. Evidence for such effects is slim, although it must be acknowledged that each model was tested within a selection of tracts that already closely resembled one another in terms of racial composition. In a broader analysis, we would have looked for disproportionate black entry into WHA tracts compared to other types of tracts. In this analysis, Hispanic share predicts black entry into all-white tracts. But white exodus increases with the share of Asians, Hispanics, and blacks. This apparent white avoidance of minorities is more compatible with the invasion-succession model than with buffering.

Other predictions are about metropolitan location. Note that these are

characteristics of the tracts' spatial embedment in the urban zone, independent of their own population composition. There are multiple spatial effects that mostly are consistent with spatial clustering, showing a tendency of tracts to remain or become similar to adjacent tracts. As anticipated by invasion succession, whites are more likely to leave WBHA tracts adjacent to all-minority tracts, and black entry to all-white tracts is more likely in central cities. But blacks are more likely to enter all-white neighborhoods that are adjacent to WHA and WBHA tracts, as anticipated by buffering.

CONCLUSION

In certain parts of the country, in metropolitan regions that are home to over 60 million Americans, large-scale immigration is creating a context of global neighborhoods where the traditional black-white color line is replaced by a more complex array of whites, blacks, Hispanics, and Asians. Our research question is how this influx affects long-established patterns of residential segregation and processes of neighborhood racial change.

Other scholars have grappled with this question. Several prior studies unsuccessfully sought a direct connection between the ethnic diversity of the metropolitan population and the level of black-white segregation. Growing awareness of the multigroup context of segregation has encouraged scholars to work with segregation measures where a single index value for a whole metropolitan region is intended to reflect the degree to which all groups tend to be present within the same tract in that region. These measures can generally distinguish between metropolitan regions where single-group tracts or combinations of two groups are predominant versus those where more complex combinations are found. But they do not provide information about which groups are found together or how particular combinations of groups shift over time. The approach taken here is to identify categories of neighborhoods and observe how they change. This approach corresponds better than simpler summary measures to the conceptual question of what groups are found together.

Critical to dealing with such questions is our finding that invasion succession and some aspects of ethnic buffering coexist. In global neighborhoods, we find contradictory patterns of change that both reduce and reproduce segregation. From the perspective of intergroup exposure, the good news is a powerful trend toward representation of all four main racial/ethnic groups in highly diverse neighborhoods: neighborhoods that come close to mirroring the composition of these diverse metropolitan areas as a whole. Blacks often enter diverse neighborhoods when the way

has been prepared by the presence of Hispanics and Asians. What is more, in a considerable number of census tracts this form of diversity has endured across two decades, while it continues to emerge in others. For the often-asked question of whether stable integration is possible, the experience of global neighborhoods suggests that a route exists. In this way, our findings offer the first strong empirical support for the conjecture that immigration diminishes the color line in the metropolis. The all-white neighborhood is becoming a relic of the past, and most whites (and most Asians, as well as many Hispanics and blacks) live in neighborhoods with high levels of diversity.

What is more, the processes creating these mixed neighborhoods are unlike those that underpinned black invasion and succession in the past. Minority entry or white exodus in global neighborhoods is not closely associated with community disadvantage or market weakness in the way that black population growth and white decline are explained in the usual neighborhood life-cycle model. There are some indications that a larger Hispanic/Asian presence in the neighborhood or in adjacent areas can facilitate black entry into neighborhoods where whites remain, as anticipated by the buffering hypothesis.

Although the invasion-succession model does not help much to explain which tracts will experience racial transitions, we have documented continuing white flight, even in the last two decades and even from neighborhoods where Hispanics and Asians are available as a social buffer between whites and blacks. The more blacks, Hispanics, or Asians in a tract, the more likely that whites will leave. Most important, the large expanses of metropolitan space that became all-minority neighborhoods during the 20th century are not attracting white residents. To be sure, there remains considerable racial heterogeneity in such areas, but it is mainly expressed in new relationships between blacks, Hispanics, and—to a lesser extent—Asians. Blacks, in particular, continue to have a heavy concentration in these locales. Hence, the new diversity turns out to be consistent with sustained high levels of segregation, especially between blacks and whites.

This is a disturbing conclusion from a policy perspective because it implies that there is no route to a fully integrated metropolis. Because white flight continues to create new all-minority neighborhoods and because the minority zone is an "absorbing state," a growing share of metropolitan space has little future prospect of white entry. One could imagine that at some point the demand for locations with good access to central business districts may begin to pull white households back into this zone. Parts of the South Bronx have been described as an example where once-minority, now-vacant space can become desirable for redevelopment. But this rarely happened during 1980–2000, and there are obstacles to its

occurrence on a large scale. First, although black residents have tended to leave these areas (as shown in table 3), the continued arrival of Hispanics and Asians prevents them from depopulating. Second, although we have not presented the evidence here, this is also the space that offers the least opportunities for residents (e.g., it has the highest levels of concentrated poverty and the other social and health conditions associated with inner-city poverty, regardless of whether they are actually located in the urban core). Despite the popularity of accounts of widespread urban gentrification, there is no process currently underway that is likely to bring whites into such neighborhoods.

Thinking of paths of change as a transition matrix allows us to raise different questions than the standard approach of ranking metropolitan areas on a scale of neighborhood diversity, entropy, or segregation. How do neighborhood trajectories differ across metropolitan areas with different local histories? Are there perceptible shifts in paths of change even in metropolitan regions with less diverse populations? Where in the metropolis are various categories of tracts or transitions more likely to be found, and how does the spatial model for global neighborhoods correspond to the concentric zone model that proved so useful to the Chicago school ecologists? What neighborhood conditions and community resources are available to people in one sort of neighborhood or another, and if neighborhood disadvantage becomes less important as a determinant of changing racial composition, will group inequalities in locational resources diminish? How does neighborhood diversity translate into opportunities for public education? How is diversity related to disparities in public health or criminal victimization?

If the all-minority neighborhood is a permanent fixture in urban America, more attention needs to be given to the quality of life in this zone. Again speaking from a policy perspective, it is illegitimate to acquiesce to a situation of both separate and unequal. And if there is to be any hope for future integrated neighborhoods in this large slice of the metropolis, these communities must achieve some minimum standard of livability. We have not studied the predictors of white entry into minority neighborhoods because this has been such a rare occurrence. But almost certainly the quality of life, opportunities, and public services in these neighborhoods are currently a deterrent to whites.

The neighborhoods where whites and minorities do increasingly live together pose different questions. What is the capacity of these neighborhoods to grow and to accommodate rising numbers of minorities? Under what conditions could there be a white backlash and acceleration of white flight? Alternatively, is there a point at which whites' experience with diversity will actually undermine the color line, as buffering appears

to do, so that whites' evident reluctance to be less than a population majority in their neighborhoods has less impact on their residential choices?

We hesitate to extrapolate from the transitions found in the last two decades to those that will occur in the future or from the very diverse metropolitan regions studied here to other parts of the country. We suspect that there are metropolitan regions where the Hispanic population alone can play the same buffering role that we found for Hispanics and Asians together in this study. We also suspect that stable integration involving whites and blacks will be less likely in the many metropolitan regions (especially in the Midwest and the South) where an influx of Hispanics and Asians is only a recent phenomenon and where the pattern of white-black segregation has a long history. Indeed, in such areas the new groups may themselves tend to be more residentially segregated as they grow in numbers. We do not foresee a return to the form of segregation typified by all-white neighborhoods because there are now well-established processes for minority entry. But a scenario that has already emerged in the metropolitan regions studied here is a new type of polarization: one not simply between blacks and whites but between a zone of increasing diversity and a minority zone where whites are unlikely ever to venture.

APPENDIX

Comparisons among Different Threshold Criteria

When there is not a well-established criterion for classification to rely on, a natural question is to what degree the results depend on the criteria that are employed. This appendix presents two sorts of comparisons. The first comparison is based on the "relative presence" criterion used in this study; here we vary the degree of presence that is demanded. The second compares the 25% "relative presence" criterion with the alternative of a fixed absolute number of residents; following Alba et al. (1995), we use 100 as the threshold for group presence. In both cases, we calculate the distribution of census tracts across tract types in 1980, 1990, and 2000.

Table A1 presents three different criteria for relative presence. The most demanding is 50% (i.e., the share of group members in the tract is at least half as large as the group's share in the total population of the multiethnic metropolitan regions in the study). At this level, whites are counted as present in a tract only if they are above 32.6% of residents in 1980, 28.9% in 1990, or 24.6% in 2000. The 15% criterion is the least demanding, with whites counted as present at only 9.8% in 1980, 8.7% in 1990, and 7.4% in 2000. Using any of these criteria, a higher share of whites than of any other group is required to establish presence, while the threshold for Asians is the lowest. Also, the white threshold drops over time, while the

TABLE A1
Distribution of Tracts by Racial Composition by Decade and Threshold of Group Presence

	50% Criterion			25% Criterion			15% Criterion		
	1980	1990	2000	1980	1990	2000	1980	1990	2000
Threshold (%):									
White (W)	32.6	28.9	24.6	16.3	14.4	12.3	9.8	8.7	7.4
Black (B)	7.5	7.3	7.2	3.8	3.7	3.6	2.3	2.2	2.2
Hispanic (H)	7.9	10.6	13.7	3.9	5.3	6.9	2.4	3.2	4.1
Asian (A)	1.8	3.2	4.4	.9	1.6	2.2	.5	1.0	1.3
Not assigned	325	199	95	325	198	94	325	198	94
A	15	16	38	6	6	6	2	2	2
H	292	452	669	85	205	294	32	95	164
HA	293	457	575	109	237	308	83	132	178
B	812	861	878	557	572	562	390	428	391
BA	108	88	125	61	53	71	55	33	62
BH	770	930	1,141	617	806	953	551	687	795
BHA	405	557	690	385	536	721	380	514	675
W	3,066	2,515	1,847	1,221	935	590	595	427	208
WA	2,233	2,195	2,323	1,450	1,438	1,449	822	742	694
WH	1,288	1,143	1,006	1,347	993	792	1,092	795	585
WHA	2,176	1,757	1,492	3,709	2,850	2,375	4,050	3,081	2,558
WB	286	366	316	207	202	158	132	112	67
WBA	279	505	566	292	408	452	215	271	266
WBH	422	501	575	682	765	795	812	826	817
WBHA	713	941	1,147	2,430	3,279	3,863	3,947	5,140	5,927
Total	13,483	13,483	13,483	13,483	13,483	13,483	13,483	13,483	13,483

Hispanic and Asian thresholds rise substantially. These are all consequences of our decision to use proportional representation as the basis for classification.

The table also presents the number of tracts in the 24 metropolitan regions that meet these criteria. The number of tracts that we classify in each category depends on the criterion. At 50% in a given year, there are many more tracts classified as all white, all black, or all Hispanic, as well as many more tracts in specific two-group categories, including Hispanic Asian, white Asian, and white Hispanic. And there are more tracts where whites are the absent group (BHA). At 15% in any given year, all of these types are less common, and by far the largest numbers of tracts have multiple groups, especially WBHA and WHA.

Evidently, any statement about the preponderance of single-group versus more diverse neighborhoods is contingent on the definition. The same data could lead to the conclusion that groups tend to be rather separated in these metropolitan areas or highly intermingled, depending on what constitutes separation or intermingling. Much more uniform are the trends over time. Even using the strictest 50% criterion, we find that in some

TABLE A2
Distribution of Tracts by Racial Composition by Decade and Criterion of Group Presence

	Relative Presence (25%)			Absolute Presence (100%)		
	1980	1990	2000	1980	1990	2000
Not assigned ...	325	198	94	462	281	174
A	6	6	6	5	4	4
H	85	205	294	44	77	103
HA	109	237	308	13	20	34
B	557	572	562	415	455	407
BA	61	53	71	4	9	9
BH	617	806	953	391	563	675
BHA	385	536	721	20	52	123
W	1,221	935	590	2,405	1,031	359
WA	1,450	1,438	1,449	300	333	247
WH	1,347	993	792	3,058	2,016	1,332
WHA	3,709	2,850	2,375	1,776	2,335	2,593
WB	207	202	158	399	232	92
WBA	292	408	452	85	107	51
WBH	682	765	795	2,068	1,858	1,611
WBHA	2,430	3,279	3,863	2,038	4,110	5,669
Total	13,483	13,483	13,483	13,483	13,483	13,483

respects diversity is increasing. The number of all-white tracts is much lower in 2000 than in 1980, while the number of WBHA tracts is greater. However, the number of all-Hispanic tracts increased, some combinations that lack whites (e.g., HA, BH, and BHA) also increased, and there was a sharp decline in one of the more diverse categories, WHA. These trends are found in table A1, regardless of which criterion is used.

Table A2 provides a comparison of the 25% relative presence criterion with one based on a 100-person threshold. Some trends are seen in both halves of the table. Two suggest a growing diversity: (1) a sharp decline in the number of all-white tracts and (2) a large increase in WBHA tracts. However, using either criterion shows an increase in the number of all-minority tracts of various kinds, especially H, BH, and BHA tracts. The total number of all-minority tracts increased from 1,820 to 2,915, using the relative presence criterion, and from 892 to 1,355, using the absolute presence criterion.

There are, nevertheless, some appreciable differences between these approaches. The absolute presence criterion yields a much larger number of WBHA tracts (and a larger percentage increase in their number between 1980 and 2000). This is mainly because many tracts with at least 100 whites, blacks, and Hispanics also have very low proportions of those

groups. In a typical tract with a population of 4,500, the 100-person threshold is equal to 2.2% only—the minimum for the relative presence criterion for Asians in 2000 but well below the relative presence criterion for the other groups in any year. Conversely, using the 100-person criterion yields a much smaller number of all-minority tracts. The relative presence criterion would require a white share of at least 12.3% (in 2000), equal to more than 500 persons in a typical 4,500-person tract.

These results support two main conclusions regarding classification criteria. First, regardless of the criteria, there was a large increase in racial diversity corresponding with the decline of all-white neighborhoods during 1980–2000, countered by persistence or growth in the number of each type of all-minority neighborhood. Second, the choice of criteria has a large effect on the frequency distribution at any given time, and the choice of a relative or absolute criterion also affects the direction and magnitude of change in some aspects of this distribution over time.

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