The Racially Fragmented City? Neighborhood Racial Segregation and Diversity Jointly Considered

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Abstract:
This essay reflects on the racial configuration of urban space. Previous research tends to posit racial segregation and diversity as either endpoints on a continuum of racial dominance or mirror images of one another. In this paper we argue that segregation and diversity must be jointly understood; they are necessarily related, though not inevitably as binary opposites. Our view is that the neighborhood geographies of US metropolitan areas are simultaneously and increasingly marked by both racial segregation and racial diversity. We inspect the neighborhood racial structure of several large metropolitan areas for 1990 and 2000 to demonstrate the “both/and”-ness of segregation and diversity.

Key words: racial segregation, racial diversity, racialized urban space
“If you wish to ride with me you must come into the “Jim Crow Car.” There will be no objection—already four other white men, and a little white girl with her nurse, are in there. Usually the races are mixed in there, but the white coach is all white. Of course this car is not so good as the other, but it is fairly clean and comfortable.” WEB DuBois The Souls of Black Folk, (1903 93)

*The Souls of Black Folk* is a sociological classic and a historically important documentation of the everyday lives of African Americans at the turn of the twentieth century. It’s best remembered for DuBois’ prediction that “the problem of the Twentieth Century is the problem of the color-line”. We take our lead here, however, from this other passage that shows how racial mixing in “Jim Crow Cars” framed segregation in the all-white section of trains. Racial separation has rarely been, so to speak, simply black and white.

This essay concerns racial segregation and diversity. Our interest is not rail cars but the neighborhoods that comprise US metropolitan areas (MSAs), and not the turn of the twentieth century but the turn of the twenty-first. When residential segregation is jointly considered with its opposite (i.e., racial diversity), they are usually positioned as the binary endpoints of a uni-dimensional continuum of racial dominance. In this view, as neighborhoods become less segregated, they necessarily become more racially diverse and vice-versa. That is to say, neighborhoods are “either/or” — either they are racially segregated to varying degrees or they are racially diverse to varying degrees. This ontology reduces segregation and diversity to mirror images of one another. We agree that segregation and diversity must be jointly considered and are necessarily related, but we resist the temptation to conflate them into a single continuum of racial variability. We make the case that the neighborhood geographies of
MSAs are increasingly marked by both racial segregation and racial diversity. Using a new variant of an old technique, we present case studies of several large MSAs to showcase the “both/and”-ness of diversity and segregation.

Our perspective recognizes “folds” in the racial continuum enabling a reinterpretation of the racial landscapes of metropolitan places. To illustrate, a gradational view of segregation and diversity would designate a neighborhood, say, “moderately diverse”. Such a perspective misses the meaningful distinction between a moderately diverse neighborhood where blacks are the dominant racial group and a moderately diverse neighborhood where Latinos are the dominant racialized group.1 These neighborhoods are both, to a degree, segregated (with a black- or Latino-majority) and integrated (in the sense that the area contains a significant presence of other groups). Operationally, we present a simple-to-understand, cross-sectional classification scheme that is easily deployed using publicly available Census data. Specifically, by intersecting levels of segregation by levels of diversity, we distinguish groups of tracts by how diverse they are (low, medium, and high) by which racial group is numerically dominant. This classification scheme also allows for the analysis of neighborhood racial dynamics across census year.

By investigating the segregations and diversities that mark urban space, we move beyond binary thinking embedded in references to the “black-white divide” or questions such as “to what degree is this neighborhood segregated or diverse?” In so doing, the analysis offers a re-reading of changing racial landscapes in US neighborhoods that builds on other efforts to re-imagine geographies of race (Delaney 2002). Another, more direct, interpretation of this work is as a response to the call by Johnston et al. (2009 91) for an infusion of “more geography” into studies of urban segregation.
The essay proceeds as follows. A brief review of the literature on segregation measurement features some of the recent contributions that privilege spatial relations and those that try to account for the increasingly multiracial compositions of contemporary MSAs. We then detail our neighborhood classification scheme and illustrate its utility in three ways. The first uses the summary counts of neighborhood type for sixteen MSAs comparing 1990 with 2000. We then produce pairs of maps for three MSAs that show cartographically how the spaces of diversity and segregation have shifted over this decade. We also summarize these changes using transition matrices that pinpoint the types of neighborhoods that have shifted classification. The conclusions broaden the discussion to contemplate, among other things, how future applications of the technique may unpack other dimensions of neighborhood diversity/segregation.

**Background**

Chicago School sociologists produced the first conceptual framework to comprehend the racial and ethnic residential patchworks in US cities (e.g., Park & Burgess 1984[1925]; Sibley 1995 offers an alternative view). The index of dissimilarity emerged in the 1950s as the preferred method from these exchanges and its status went unchallenged for several decades. Then, in the 1970s, researchers started to question the interpretability of the dissimilarity measure, and advocated for a variety of increasingly sophisticated alternatives (e.g., Cortese, Falk, and Cohen 1976; Jakubs 1977; Falk, Cortese, and Cohen 1978; Massey 1978; Winship 1977, 1978; Sakoda 1981). The index of dissimilarity still dominates, but instead of reigning supreme as it did in the past it now heads a growing pack of indexes designed to summarize different dimensions of
Geographers have joined these debates, proposing a number of extensions to enhance the spatial and scalar properties of segregation measures (e.g., Brown and Chung 2006; Ellis et al. 2007; Jakubs 1981; Johnston et al. 2009; Reardon and O'Sullivan 2004; Wong 1998; 2002; 2008; Wu and Sui 2001). Most of these approaches offer new ways of measuring segregation accounting for the spatial distribution of groups and individuals and/or accounting for the increasingly multiethnic makeup of MSAs. To the best of our knowledge, few researchers start from the idea that segregation and diversity fold together. As we have no interest in joining a “which index is best” fracas, rather than providing a long recitation of previous research layered with a comprehensive comparative analysis, we contextualize our analysis in two ways. First, we rehearse the Johnston, Poulsen, and Forrest’s innovations designed to analyze segregation comparatively (e.g., Johnston et al. 2003; 2004; 2005; 2006a; 2006b; 2007; Poulsen et al. 2002a; 2002b). Second, we tap the literature on neighborhood stability. This work categorizes census tracts according to criteria often associated with neighborhood racial mix.

*Johnston, Poulsen, and Forrest*

The volume of papers published in the last decade using Johnston et al.’s method for comparative segregation analysis requires we situate our work relative to the framework they have developed. These scholars acknowledge that their scheme is based on arbitrary divisions, as are all such schemes. They differentiate areas (neighborhoods, tracts, blocks, etc.) that are predominantly white (sometimes called “host society” and/or “settler society”) from all others.
They then subdivide these white areas into two categories depending on whether the percentage white is greater than or less than 80 percent. All remaining areas are then divided based on the degree of racial compositional mixing in the neighborhood (from \(^1\) areas where whites are a substantial minority of the area’s population to \(^2\) areas that are not dominated by any single group through to \(^3\) areas that are dominated by a single minority (non-white) group.) Rhetorically and in practice, Johnston and his colleagues are careful to delineate that there are multiple variants of the last two categories in their scheme – one for each minority (non-white) group present in the population.

Generally, the Johnston et al. framework consists of 6 basic categories (the last 2 categories can be expanded as needed to account for multiple non-white minority groups). It has several strengths. First, their approach recognizes multiple “types” of segregation, including the possibility that areas are compositionally plural. Second, it provides a conceptually stable taxonomy that can be applied to studies of change over time and across national contexts, where the specific racial groups identified in national censuses differ. This is an important innovation and opens up a set of new research areas.

Their approach accents the analysis of multiple types of segregation, rather than residential mixing. It also places whites center stage. This is perhaps understandable in light of the persistence of white racial dominance in all walks of life including housing markets. In terms of analyzing racially mixed neighborhoods, their method only distinguishes neighborhoods with a strong white numerical minority from those where whites are less strongly represented. This means it is empirically unable to “see” neighborhoods that are mixed and have specific non-white groups as the most numerous (Peach 2009). We feel that in both cross-sectional and
change-over-time senses, it is increasingly important to recognize multiple types of mixed neighborhoods, with attention to the specific non-white groups that characterize these spaces. Our approach highlights both a) multiple types of segregation (without implying equivalence between areas where whites are the majority and areas where non-whites are the dominant population) and b) multiple types of diversity.

**Neighborhood Stability and Neighborhood Transition**

A related strand of research that helps contextualize our ideas is that subset of the literature devoted to neighborhood stability and transition in a multiethnic framework. Like Johnston and his collaborators, this group of scholars deploys typologies of neighborhoods that include multiple types of racially diverse areas (e.g., Denton and Massey 1991; Ellen 2000; Fasenfest et al. 2006; Friedman 2008; Rawlings et al. 2004; see also Reibel and Regelson 2007; Lee 1985; Lee and Wood 1990). Fasenfest et al. (2006) observe the growing diversity of metropolitan America and ask how these larger trends play out in neighborhoods. As they think about the long-term trends toward greater diversity, they devote considerable attention to the stability over time of diverse neighborhoods. They are particularly interested in the impact of neighborhoods that show stable mixing between blacks and white. Stably integrated neighborhoods are important as an object of study because their existence suggests that spaces of racial mixing are not necessarily the transitory products of “white flight” or “gentrification”. Fasenfest et al. (2006) design a classification scheme, typical in this sort of work (cf. Freidman 2008; Jones 2008), for neighborhood types that treats blacks and whites separately and all other minorities grouped into a class they call “Other.” Looking at the 10 largest MSAs, they imagine two general sorts of neighborhood: Homogenous and Mixed-race. Homogenous neighborhoods
have three subtypes:

1) “Predominantly white”: >80% white and no minority > 10%.

2) “Predominantly Black”: > 50% black and no other minority > than 10%.

3) “Predominantly other”: > 50% nonblack minority and < 10% black.

Mixed neighborhoods have 4 subtypes.

1) “Mixed white/other”: 10-50% nonblack minority and <10% black.

2) “Mixed white/black”: 10-50% black and < 10% nonblack minority.

3) “Mixed black/other”: >10% black, >10% nonblack minority and < 40% white.

4) “Mixed multi-ethnic”: >10% black, >10% nonblack minority and > 40% white.

Fasenfest et al. (2006) discuss their typology in the context of what they differentiate as absolute vs. comparative approaches to defining neighborhood racial composition. By this, they distinguish absolute approaches that apply pre-defined categories to all MSAs from comparative approaches that take into consideration the racial composition of the metropolitan area in defining the categories. Fasenfest et al. use an absolute approach that intends to “recognize the growing role of Latinos and Asians in neighborhood integration” (p. 98) and yet oddly combine all non-black minorities into a single “omnibus “other” category.” Conceptually, this approach does allow the data to reveal patterns of integration more complex than a simple white/black typology. Still, very real differences are missed between neighborhoods where Latinos are the dominant group and neighborhoods where Asians are the dominant group.

Two other closely related studies are worth noting; both pivot again on black-white divides and mixing. Ellen (2000) reports that ~57 percent of “integrated neighborhoods” (i.e., those between 0-50 percent black) in 1970 remained that way in 1990. Rawlings et al. (2004) also were interested in black-nonblack mixing and neighborhood stability in several dozen of the
largest MSAs where blacks formed the largest minority group (and where Latinos comprise 20 percent or less of the metropolitan population, thus excluding New York, Los Angeles and Miami from the analysis). They found that about 80 percent of mixed-majority white neighborhoods (where blacks constitute 10–50 percent of the neighborhood’s population) in 1990 retained that mix in 2000. The most stable neighborhoods within this group were those in which the share of the black population was about 10 percent. Freidman (2008), commenting on this project, observed that “majority white” places were broadly defined and that the study goes some way to explaining why the level of stability in this study is so much higher than Fasenfest et al. (2006) found. In response, however, Friedman (2008) looked at the 61 MSAs with populations exceeding 1 million in 2000. In 2000, this set accounted for 72 percent of all metropolitan blacks, 73 percent of all metropolitan Latinos, and 80 percent of all metropolitan Asians. Friedman’s neighborhood taxonomy built expressly on Ellen (2000) and Fasenfest et al. (2006) and identified seven types of neighborhood that differ from Fasenfest et al.’s in only minor ways. Friedman’s typology reproduces the problem identified in Fasenfest’s scheme – non-black minority groups are grouped together into a single expanded “other” category, which does not allow for the kind of group-specific views we seek.

In contrast to the existing strategies to comprehend the variability and complexity of racial composition within urban areas, we aim to capture a constructive tension between detail (complexity) and simplicity (comprehensibility). Like the approaches we just reviewed, our framework uses an absolute, rather than relative, definition, which allows meaningful comparisons across multiple cities (cf. Jones 2008 and Maly 2000). Our framework allows for analysis of change; specifically neighborhood racial dynamics. We also link our essay to a
website that facilitates interaction between users/readers and the mapping of racialized urban space.

**The Technique: Data, Methods, and Application**

We start from the position that the classification scheme should be based on *a-priori* logic. Note that the now broad array of existing segregation measures, including those developed by geographers, all attempt to capture the degree to which groups residually live apart from one another. We choose instead to start our approach by evaluating compositional diversity, or the degree to which groups live together. An effective and widely used measure appropriate for census tracts is scaled entropy. The classification system offered below emerged from detailed explorations of the impact on scaled entropy of many configurations of racial composition spread across the 6 major racial categories on the Census (white, black, Latino, Asian, Native American, and other) and with an eye towards classes that make substantive sense and show well on choropleth maps.

We begin by distinguishing 3 levels of diversity that we will subsequently subdivide by the dominant racial group (Figure 1). We define “Low Diversity” tracts as having scaled entropy values less than or equal to 0.3707. This value hinges on two criteria. First, this is the maximum scaled entropy that can be reached in a tract where one of the six racial groups constitutes 85 percent of the population—i.e., each of the other 5 groups constitutes exactly 3 percent of the population. Second, tract scaled entropy can be less than 0.3707 even when no group constitutes 80 percent of the population—for example, scaled entropy=0.36 if Group A constitutes 65 percent, Group B 35 percent, and all other groups 0 percent of the neighborhood
population. Recall that the majority of existing approaches start by setting a threshold for majority group dominance (typically 80 percent) that differs from the threshold for minority group dominance (often 50 percent). The strength of our entropy-based approach is that it forces scholars to think beyond single group dominance, or even pairs of groups, to consider the multiplicity of groups. So, for the 65 percent/35 percent tract, even though Group A does not dominate at the 80 percent level, the tract as a whole is not diverse, and thus, we assert, “fits” in this low diversity category. With a third group present in non-trivial shares, for example in a 65 percent/30 percent/5 percent configuration, scaled entropy rises to 0.44 and the tract would appropriately not constitute a “Low Diversity” area in our classification scheme.

We defined “High Diversity” tracts as those with (a) scaled entropy greater than/equal to 0.7414, and (b) no group constituting more than 45 percent of the tract’s population. The 0.7414 threshold requires that, in addition to satisfying the 45 percent rule, a tract’s top two groups have a combined percentage of no more than 80 percent of the tract population. We define as “Moderately Diverse” those tracts not captured by the other two categories.

A distinguishing feature of our approach is the additional step of identifying the dominant racial group in both the low-diversity and moderate-diversity tracts. Neighborhood concentrations of Native Americans and non-Latino individuals identifying as “Other” are rare in US MSAs. In our sample, only one tract (in Phoenix) was moderately diverse and Native American Indian-dominated. So although Native Americans and “others” play into calculations of neighborhood diversity, we restrict the subdivision of low and moderately diverse tracts into those where whites, blacks, Asians, and Latinos are the dominant groups.
To demonstrate the usefulness of our approach, we use SF3 data from the 1990 and 2000 US censuses to visualize and assess the intersections of neighborhood racial segregation and integration at census-tract scale. We examine these patterns in sixteen large MSAs: Atlanta, Boston, Chicago, Dallas, Detroit, Houston, Los Angeles, Miami, Minneapolis, New York, Philadelphia, Phoenix, San Diego, San Francisco, Seattle, Washington DC. These MSAs represent a variety of regions and range widely in their racial compositions and patterns of mixing. We restrict our analysis to the urbanized areas within each broad metropolitan region to sharpen our focus on the clearly urban portions of these areas. This restriction leaves out rural and low-density exurban portions of metropolitan regions, which often distort the effectiveness of cartographic visualizations, even though they represent spaces that may be factor into the future of segregation and diversity. To facilitate our analysis, we boundary matched the 1990 census tracts to 2000 boundaries, which yielded a sample of over 18,600 census tracts. As the US census frequently changes how it measures race from decade to decade, we matched the 6 racial groupings defined in the 1990 Census (white, black, Latino, Asian, Native American, and other) by collapsing Hawaiian/Pacific Islander into the Asian category, and merging American Indian and Alaska Native into a single Native American category. Census 2000 was the first census to allow respondents to claim more than one race. Following the lead of other researchers who have compared 1990 with 2000, we were forced to collapse mixed-race individuals into the set of single-race categories using a method of proportional assignment to nonwhite categories.

In 1990, the most common type of tract in our sample of sixteen MSAs (48 percent) was “low-diversity white-dominant”. By 2000, less than one third (32 percent) of tracts were low-diversity white-dominant and this type just barely remained the modal category. Figure 1
shows the distribution of tracts across all the categories for (a) all the metropolitan places (Total), and (b) broken down by individual MSA. They are organized from left to right by the MSA with the highest proportion of low-diversity white-dominant tracts in 1990 (Minneapolis) to the lowest (Los Angeles).

Figure 1 about here

While Figure 1 contains many stories, we will highlight what we see as the principal narratives. Every MSA saw the proportion of low-diversity white-dominant tracts shrink; Seattle experienced the largest decline: in 1990, over 80 percent of neighborhoods could be described as low-diversity white-dominant falling to less than 50 percent by 2000. The decline in the proportion of low-diversity white-dominant tracts between 1990 and 2000 went hand in hand with growth in the proportion of all other sorts of tracts, including those which are moderate-diversity white-dominant and those classified outside either of the two white dominated categories.

Many MSAs between 1990 and 2000 became more multiethnic, driven largely by increases in the number and proportion of Latinos and Asians (e.g., Iceland 2004). From the perspective of our research, these changes manifest themselves in various ways. More neighborhoods are Latino and Asian dominated in 2000. And the share of tracts that we class as “highly diverse” grew from 0.82 percent in 1990 to 3.32 percent in 2000, with San Francisco, San Diego, Washington DC, New York, and Minneapolis boasting the highest proportions of highly diverse neighborhoods.
We can look at this in another way; every MSA studied here experienced a reduction between 1990 and 2000 in the total number of low-diversity tracts, with many (about 17 percent) becoming moderately diverse without changing their category of racial dominance. Seattle experienced the largest decadal decline; its proportion dropped from 81 percent to 48 percent. San Francisco has the fewest low-diversity tracts total (14 percent in 2000). Detroit, Boston, Minneapolis, and Chicago have the largest proportion. Figure 1 shows that while these shifts towards diversity were taking place, another story, a narrative of segregation, played out at the same time. The proportion of low-diversity black-dominant tracts remained stubbornly set at around 8.6 percent for the decade. Atlanta, Chicago, Detroit, and Philadelphia all experienced an increase in the proportion of low-diversity black-dominant neighborhoods between 1990 and 2000.

Figure 1 tells several fascinating stories but it does not reveal which neighborhoods experienced a racial transition. A 1990-2000 transition matrix (Table 1) can begin to unpack that line of thinking.

Table 1 about here

Transition matrices like this one (i.e., that contain the tallies by type of neighborhood of all sixteen MSAs) allow us to see the types of neighborhood change taking place between 1990-2000. About 31 percent, \(\frac{5811}{18624}\), transitioned to a different category in the course of the decade. Of the 5811, 3506 changed their diversity classification and 1575 remained in the same diversity category but shifted in racial dominance. Only 136 changed both diversity and racial
classification. In addition, 530 became highly racially diverse and 64 shifted from being highly
diverse to another, less diverse, state.

Looking at the first row of Table 1, we see that of the 8940 low-diversity white-dominant
tracts in 1990, 5935 remained in that state in 2000. Put differently, fully 33 percent of low-
diversity white-dominant tracts in 1990 were in a different class in 2000. These transitions
reveal how increasing diversity emerged, but swathed within the context of white
neighborhood isolation. The majority became moderately diverse white-dominant tracts
(incremental diversification?), but some shifted radically: three to low-diversity black-dominant
(traditional white flight?), two to low-diversity Latino-dominant (emerging forms of white
flight?), and 7 became “highly diverse” (rapid diversification?). Other rows show the persistence
of non-white residential isolation: low-diversity black- and Latino-dominated tracts were more
likely than others to stay unchanged between 1990 and 2000 (89 percent in each case). At other
end of the scale, this table demonstrates the often transitory nature of residential racial mixing:
the class of tracts least likely to retain its 1990 status is the highly diverse set (only 89/153, or
58.2 percent, stayed in that category over the course of the decade).

Examining the columns produces other insights. For example, very few tracts became low-
diversity white-dominated during the decade; 39 moderately diverse white tracts and 3
moderately diverse black tracts moved to the low-diversity white-dominated category. This
means that 99.3 percent of low-diversity white tracts in 2000 were in the same classification in
1990. In contrast, about 90 percent (1449/1604) of low-diversity black tracts and 63 percent
(402/636) of low-diversity Latino tracts retained their 1990 status in 2000. The largest churn
takes place in the highly diverse neighborhoods with only 14% (89/619) of the highly diverse
tracts in 2000 being in this class in 1990. This evidence is consistent with the idea that highly mixed neighborhoods may not be stably integrated and may only exist as diverse for a short period of time as they transition from dominance by one group – typically whites – to dominance by another.

Transition matrices offer one perspective on all this—maps offer another. Space limitations in a journal format preclude us from showing maps of all 16 MSAs for 1990-2000. Accordingly, we offer our impressions of the patterns we find in three MSAs: Atlanta, Los Angeles, and Washington DC. Although we only include maps and accompanying transition matrices for each of these MSAs in this essay we encourage readers to explore neighborhood patterns for all 16 metropolitan regions cartographically at www.mixedmetro.us. This web-based form allows users to interact MSA maps based on our classification scheme with detailed background features (layers) such as roads, place names, and the physical landscape. The web maps also allow users to zoom in on particular areas, perhaps with which they are familiar.

Figure 2 (Atlanta 1990 & 2000 Maps) About here
Table 2 (Atlanta Transition Matrix) About here

Between 1990 and 2000, low-diversity white-dominant tracts declined from 54 percent of all tracts to 29 percent. At the same time, moderately diverse white-dominant tracts grew from about 18 percent to over 30 percent of the total. These transitions are most visible in the northern suburbs. The number of moderately diverse black-dominant tracts also grew, more than doubling from 29 in 1990 to a total of 63 a decade later. The proportion of low-diversity black tracts also increased, east of the metropolitan core around Stone Mountain, from 21.5
percent of the total to 23 percent. Proximate to the two highly diverse tracts in 1990 and the 6 in 2000, ten moderately diverse Latino tracts emerged in the 1990s in and around Norcross (locals refer to this as the Buford Highway corridor, which parallels I-85) to the north. Atlanta’s Latino population began to leave a mark on the landscape in the 1990s in one area of the metropolitan region. In Los Angeles, their presence was far more ubiquitous.

The declining proportion of low-diversity white-dominated tracts evident in almost all MSAs is apparent all over metropolitan Los Angeles, and is particularly noticeable to the east of downtown and in Orange County to the southeast. (The maps and the matrix also reveal a decline in low-diversity tracts of any ilk, from 32 percent of the total in 1990 to 22 percent in 2000.) Note that the decline of low-diversity white-dominated tracts was exclusively associated with a transition to moderately diverse white-dominated tracts: 316 of the 544 converted in this fashion and the remaining 228 tracts were still low-diversity and white-dominated. This pattern is repeated in most western MSAs but not eastern ones. Chicago, for example, not shown, had 30 tracts that shifted from low-diversity white-dominated to low-diversity Latino- or black-dominated in the course of the decade.

The maps and the transition matrix reveal pronounced instability in highly diverse tracts. Only 11 of the 32 tracts that were highly diverse in 1990 remained so in 2000. A greater number (15) transitioned into what we are calling moderately diverse Latino tracts. The 2000 tally of moderately diverse Latino neighborhoods also grew in other ways: 52 transitioned into this
status from moderately diverse white neighborhoods, 2 from moderately diverse black, 6 from moderately diverse Latino, and 1 from moderately diverse Asian.

Los Angeles, of course, is increasingly Latino (Davis 2000). Not surprisingly, the number of Latino-dominated tracts between 1990 and 2000 increased from 667 to about 1000. About half the moderately diverse Black tracts in 1990 transitioned to moderately diverse Latino tracts in 2000. The bulk of the gains in Latino dominated tracts, however, derived from neighborhoods transitioning from moderately diverse white to moderately diverse Latino.

The number of Asian-dominated tracts (all but one are moderately diverse) increased from 57 in 1990 to 137 in 2000. 51 of those 57 tracts remained moderately diverse Asian places; most of the gains in this category derived from the transition of 69 moderately diverse white tracts and 11 moderately diverse Latino tracts to Asian dominance. Geographically, Asian areas diffused from Monterey Park in the central the San Gabriel Valley (Li 2009). The other areas that grew are the upland parts of the eastern San Gabriel Valley — the Walnut/Diamond Bar region. Note that the one low-diverse, Asian-dominated tract in both 1990 and 2000 is the downtown Chinatown.

Figure 4 (Washington DC 1990 & 2000 Maps) About here
Table 4 (Washington DC Transition Matrix) About here

The patterns of change in neighborhood segregation and diversity in Washington DC resemble in some respects those of Atlanta. Both places feature a significant decline in the number of low-diversity white-dominant tracts, a growing proportion of low-diversity black-dominant
tracts and the emergence of more highly diverse tracts geographically proximate to an incipient set of moderately diverse Latino-dominant neighborhoods. Both regions have also experienced a growth in the white proportion of the central-city population, which is still an unusual trend in national terms (Dewan 2006). Washington DC, however, differs from Atlanta in some important respects. The growth (from 5 to 46) of the number of highly diverse tracts is the fastest growth rate for this category in any of the MSAs examined. Also, there are several clusters of such tracts: a pair of tracts in DC itself, a cluster near Reston, one centered on Alexandria, another to the southeast of that, and a string to the north running from Silver Spring to Rockville. Many of the very diverse areas likely formed as a result of relatively recent immigrant flows. These neighborhoods offered employment and relatively inexpensive housing to newcomers (Price and Singer 2008).

Discussion and Conclusions

The analysis reported here offers a new distinctly geographical way of apprehending and visualizing neighborhood racial mixing and segregation. The US is becoming more diverse and this is apparent at scales from the nation, to the region, the metropolitan area, to the neighborhood, to the household, to the body. Metropolitan residential neighborhoods are, in some important ways, becoming more racially diverse while significant sections of many urban landscapes remain stubbornly segregated. Moreover, our analysis confirms our expectation that segregation and diversity are not simply the mirror images of one another. Diversity became enfolded within segregation (and vice-versa) in complex ways. Even so, one narrative persists; the geographies of increased diversity have not eliminated the persistence of segregation of Latinos and Blacks from other groups.
We are, of course, by no means the first scholars to acknowledge that the relationship between diversity and segregation is complex and that approaches to urban segregation must account for the increasingly multiethnic nature of the urban experience (e.g., Fong and Shibuya 2005). But the approach we outline in this essay offers a new means to understand some fundamental questions about segregation and diversity. For example, Glaeser and Vigdor (2001) (among others) celebrate the absence post 2000 of completely white tracts in most MSAs. Their gradational perspective on segregation misses key trends in urban processes that our approach picks out. For example, our method reveals that low-diversity white-dominated tracts, while fewer in number, were still the most frequently observed tract type in 2000: that is, almost 32 percent of all tracts. We also show that the number of low-diversity black-dominated tracts fell only slightly over the 1990-2000 period (although about 10 percent of these tracts underwent some form of racial transition during the decade).

We don’t anticipate that our framework will “dethrone” traditional segregation statistics (cf. Peach 2009), or the increasing attention being paid to diversity (via, e.g., entropy-based measures) and innovative spatial measures of segregation; rather, we simply wish to press the point that neighborhood racial transitions cannot be adequately captured by either a one-sided focus on segregation or an exclusive focus on diversity. Instead, by examining the juncture between segregation and diversity, our method shows how racial divisions are enfolded within the context of an increasingly diverse urban world. Put differently, we offer an approach to visualize how increasing diversity occurs side-by-side with patterns of persistent segregation.
Borrowing Steven Vertovec’s phrase, “diversity isn’t what it used to be” (2007: 1024), this essay not only describes a new approach in segregation/diversity studies, but also sets the stage for an exciting new research agenda. For example, building directly on the analysis presented here, future research should explore the low-diversity white-dominated tracts that shifted radically. Further research would help unpack the processes at work in these places (e.g., is this “white flight”?). What processes differentiate stably diverse places from newly diverse places? We suspect the answer to this and other questions about transitions in neighborhood racial configurations may lie in the connections they have to other measures of neighborhood socioeconomic status. For example, how does the age or income structure of tracts relate to the configurations of diversity and racial dominance observed in neighborhoods? How do these and other measures of socioeconomic structure condition the types of transformations observed in our neighborhood racial classification scheme?
Notes:

1 We follow the convention of scholars using Census data in defining as Latino all respondents reported as having Hispanic origin, regardless of their reported race. We understand well the conceptual inadequacy of this single category to capture the rich and varied histories and contemporary realities of racial identity for persons with Latin American heritage.

2 The standard entropy diversity measure for a tract is:

\[ E_j = s \sum_{k=1}^{K} \frac{k_j}{t_j} \ln \frac{k_j}{t_j} \]

where \( k \) indexes the \( K \) racial groups. The maximum value of \( E \) is obtained when tract \( j \)'s population is evenly divided between the racial groups. The number of racial groups limits the magnitude of \( E \)'s maximum value, so we include a scaling constant \( s \) so that it ranges between a minimum of 0 and a maximum of 1. For our computations, we calculated \( E \) based on individuals in 6 racial groups (white, black, Indian, Asian and Pacific Islander, “Other Race” plus Latino/as) created to facilitate analysis of changes during the 1990s. Our racial groups thus reflect what was observable in the 1990 Census, with definitions in the 2000 Census modified to conform as closely as possible. The Asian and Pacific Islander category is a combination of two categories on the 2000 Census which conforms to the 1990 single aggregate category of Asian and Pacific Islander. We allocate individuals reporting multiple racial categories in the 2000 Census to single racial categories using minority-preference proportional weighting (this approach avoids double counting).
If any of the 5 minority groups constitutes less than 3% of tract population, scaled entropy drops rapidly.

We initially evaluated a 50% rule (i.e., no group constitutes an absolute majority) based on precedent in the literature, but that approach captured too many tracts, and tracts with odd characteristics. The minimum scaled entropy for a tract satisfying the 45% rule would be a relatively low .53 – but setting a threshold at .53 would allow tracts into the “High Diversity” category that we did not consider to be highly diverse.

The fact that the threshold for defining “High Diversity” tracts is twice the threshold for defining “Low Diversity” tracts is purely coincidental.

It would be easy to also identify the dominant racial group in tracts defined as “High Diversity.” We chose not to do so in this paper because (a) we want to highlight that in high diversity tracts, no single group is in the clearly visible majority and (b) there were numerically few tracts that satisfied our criteria, and depicting variants of these tracts based on the dominant group introduced too much complexity into our analysis, especially the cartographic representations.
References:


The Racially Fragmented City?


Table 1: Neighborhood Transition Matrix for All MSAs, 1990-2000.

<table>
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<tr>
<th>All MSAs</th>
<th>1990</th>
<th>2000</th>
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<tr>
<td></td>
<td>White, Low Diversity</td>
<td>Black, Low Diversity</td>
</tr>
<tr>
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### Table 2: Neighborhood Transition Matrix for Atlanta, 1990-2000.

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The Racially Fragmented City?
### Table 3: Neighborhood Transition Matrix for Los Angeles, 1990-2000.

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The Racially Fragmented City?
Figure Captions:

Figure 1: Distribution of Neighborhood Types by MSA, 1990 and 2000

Figure 2: Atlanta Neighborhoods Classified by Diversity and Racial Dominance, 1990 and 2000

Figure 3: Los Angeles Neighborhoods Classified by Diversity and Racial Dominance, 1990 and 2000

Figure 4: Washington DC Neighborhoods Classified by Diversity and Racial Dominance, 1990 and 2000