

# Does Socioeconomic Status Matter? Race, Class, and Residential Segregation

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*Spatial assimilation theory predicts that racial and ethnic residential segregation results at least in part from socioeconomic differences across groups. In contrast, the place stratification perspective emphasizes the role of prejudice and discrimination in shaping residential patterns. This article evaluates these perspectives by examining the role of race and class in explaining the residential segregation of African Americans, Hispanics, and Asians from non-Hispanic whites in all U.S. metropolitan areas over the 1990 to 2000 period. Using the dissimilarity index and various indicators of socioeconomic status (SES), we find that in both 1990 and 2000 high-SES racial and ethnic groups were significantly less segregated from non-Hispanic whites than corresponding low-SES groups, especially among Hispanics and Asians—much as the spatial assimilation model would predict. Consistent with the place stratification model, African Americans of all SES levels continued to be more segregated from whites than were Hispanics and Asians, and this changed little between 1990 and 2000. However, the importance of SES in explaining the segregation of African Americans from whites increased over the period, while not for Hispanics and Asian Americans, providing support for a modest increase in the applicability of the spatial assimilation model for African Americans in the 1990s.*

Racial and ethnic residential segregation is a prominent feature of the metropolitan landscape (Fischer et al. 2004; Iceland, Weinberg, and Steinmetz 2002; Logan, Stults, and Farley 2004; Wilkes and Iceland 2004). Many studies have documented the disadvantages this segregation poses for some groups—especially blacks—in terms of schooling, employment, exposure to higher crime, single parenthood, concentrated poverty, and even health and cognition outcomes (Charles, Dinwiddie, and Massey 2004; Cutler and Glaeser 1997; Massey 2004; Massey, Condran, and Denton 1987; Massey and Denton 1993; Santiago and Wilder 1991). Aside from segregation's negative effects on specific outcomes for certain groups, residential segregation speaks to the nature and quality of intergroup relations in U.S. society, where high levels of segregation are often indicative of the considerable social (if not economic and political) distance between groups.

The goal of this study is to focus on the interplay between race and class. Specifically, it examines the role of socioeconomic status (SES) differences between groups in explaining the residential segregation of African Americans, Hispanics, and Asians from non-Hispanic whites throughout the 1990s. Class differences between racial and ethnic groups may help explain differential residential patterns. For example, members of low income groups may simply not be able to afford to live alongside families from higher income groups in high cost residential areas. Thus, our analysis is guided by the following four research questions: Do the levels of segregation of African Americans, Hispanics, and Asians from non-Hispanic whites vary by SES? Does SES play a substantially smaller role in explaining black–white segregation than it does Asian–white and Hispanic–white segregation, given the long history of black–

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white racism, discrimination, and racial conflict? Has black–white segregation declined relative to Asian–white and Hispanic–white segregation in recent years? Has there been a change in the effect of SES on racial and ethnic residential patterns?

We calculate residential segregation indexes, by race and class, for all metropolitan areas in the United States by applying the dissimilarity index to data from the 1990 and 2000 decennial censuses. We use several measures of class, including income, poverty status, education, and occupation. We then employ generalized linear regression models to gauge the roles of race and class in explaining patterns of segregation, controlling for a variety of group and metropolitan area characteristics.

This article makes three noteworthy contributions to the literature on race, class, and segregation. First, studies of the relationship between race, class, and segregation tend to focus primarily on African Americans, and often in a small number of metropolitan areas. In contrast, we compare the segregation of African Americans, Hispanics, and Asian Americans from whites, for all U.S. metropolitan areas. Studying multiple groups is increasingly important because Hispanics recently surpassed African Americans as the largest minority in the United States, and the Asian population has continued to grow rapidly. At the same time, using information from all metropolitan areas allows us to make broad generalizations about segregation patterns across the United States. Second, we provide an assessment of the relative importance of race and class for different groups in a multivariate framework, allowing us to draw stronger conclusions about these associations. Third, we use data from the most recent decennial censuses to assess the theoretical models of interest: spatial assimilation and place stratification. Importantly, there are indications that the roles of race and SES in shaping residential patterns may be changing in recent years, given, for example, some declines in the discrimination against blacks in housing markets in the 1990s (Ross and Turner 2005).

## Background

Residential segregation refers to the differential distribution of groups across space, and is usually thought of in terms of the degree to which various groups reside in different neighborhoods. People are residentially segregated across a number of dimensions, including age, socioeconomic status, and race and ethnicity. Scholars commonly believe that differences in residential patterns across racial and ethnic groups reflect social distance (Park 1925; White 1987). A number of theories have been offered to explain patterns of racial and ethnic residential segregation. Two broad theoretical perspectives that encompass many of these views have been termed spatial assimilation and place stratification (Charles 2003).

The spatial assimilation theory has long been applied to the study of immigrant residential patterns. According to this perspective, differences in socioeconomic status (the focus of this study) and acculturation across racial and ethnic groups, together, help shape patterns of segregation (Alba and Logan 1991; Charles 2003; Logan and Alba 1995; Taeuber and Taeuber 1965). As noted, most minority group members may not be able to afford to live in affluent white neighborhoods (Alba and Logan 1991; Clark 1986, 1988; Pascal 1967). People who work in different sectors of the economy may also live grouped together in distinct neighborhoods near their work sites (Clark 1986), or the poor may be more likely to live in distinct areas, such as central cities, where public transportation is more readily available and government support more generous (Glaeser, Kahn, and Rappaport 2000). Indeed, research has shown that people of different classes are at least somewhat segregated from one another (Farley 1977; White 1987).

This model may be important in the context of continued SES disparities across racial and ethnic groups. African Americans and Hispanics, in particular, lag behind whites in terms of incomes, occupational status, and education (Harrison and Bennett 1995). For example, according to the 2000 Census, the median household income of non-Hispanic whites, at \$45,367,

was considerably higher than the \$29,423 median income for blacks and \$33,676 median income for Hispanics, although the median income for non-Hispanic whites is lower than the \$51,908 figure for Asians (U.S. Census Bureau 2002). A higher proportion of non-Hispanic whites have advanced degrees and are managers than blacks and Hispanics, though these proportions are lower than those observed among Asians (Bauman and Graf 2003; Fronczek and Johnson 2003). Similarly, African American and Hispanic poverty rates (24.9 and 22.6 percent, respectively) are roughly three times higher than those of non-Hispanic whites (8.1 percent), while the 12.4 percent Asian poverty rate is also higher than that of whites (Bishaw and Iceland 2003).

According to the spatial assimilation theory, these SES differences, by themselves, should result in some racial and ethnic segregation, even if there were no prejudice and discrimination affecting people's residential choices. Those who achieve socioeconomic gains, however, can then translate them into higher quality neighborhoods and housing. This is noteworthy since residential mobility is a step toward more complete assimilation across other dimensions, such as social and political (Alba and Logan 1991; Charles 2003; Massey and Mullan 1984). Richard Alba and John Logan (1991) note that: "This process implies, on the one hand, a tendency toward dispersion of minority-group members, which opens the way for increased contact with members of the ethnic majority . . . and, on the other, greater resemblance in residential characteristics between successful minority-group members and their peers from the majority" (p. 443).

In contrast to the spatial assimilation model, the place stratification perspective emphasizes the role of prejudice and discrimination in shaping residential patterns. These forces constrain the residential mobility of minority group members. For example, the long history of discrimination against African Americans probably plays an important role in explaining current residential patterns. A number of researchers have documented the rise of the American ghetto in the twentieth century, particularly between 1940 and 1970, when African American migration to Northern central cities continued and ghettos expanded (e.g., Cutler, Glaeser, and Vigdor 1999; Massey and Denton 1993; Taeuber and Taeuber 1965). Even as formal barriers to integration fell in the post-Civil Rights era, the legacy of past discrimination and segregation, and continued racism today, is likely to help explain levels of segregation between African Americans and whites in recent years (Cutler et al. 1999).

More generally, the place stratification perspective emphasizes that a group's residential patterns and integration into society depend on the group's position in the social hierarchy (Charles 2003; White and Glick 1999). The dominant group in the United States—non-Hispanic whites—is at the top of the hierarchy, and other groups follow in some order, depending on prejudices and preferences of society at large. The effects of negative stereotypes are thought to be greatest for African Americans because they tend to be perceived in the most unfavorable terms (Alba and Logan 1991; Bobo and Zubrinsky 1996; Charles 2000, 2001a; Farley et al. 1994; Zubrinsky and Bobo 1996). Thus, one of the consequences is that African Americans are unable to attain their locational preferences as often as whites of similar SES backgrounds are able to (Adelman 2004; Fainstein 1993; Massey and Eggers 1990).

The "racial preferences" literature has provided some support for the place stratification model. In general, ethnic groups often show strong desires to live in neighborhoods where their own group is highly represented, and often avoid other ethnic neighborhoods. However, African Americans, Hispanics, and Asians are more likely than whites to express a preference for living in integrated neighborhoods (Bobo and Zubrinsky 1996; Farley 1977; Farley et al. 1994; Farley, Fielding, and Krysan 1997; Zubrinsky and Bobo 1996). Whites also tend to show the strongest avoidance behavior, especially of African Americans, even when controlling for the socioeconomic characteristics of the other groups in the neighborhood (Clark 1991, 1992; Emerson, Yancy, and Chai 2001; Freeman 2000; Krysan and Farley 2002). In short, racial prejudice and discrimination are likely to be more important in determining segregation—especially black-white segregation—than are more benign ethnocentric preferences for same-

race neighborhoods (Charles 2000). Nevertheless, some research indicates an increased willingness by whites, over the decades, to remain in their neighborhoods as African Americans enter (Farley et al. 1994).

Scholars have extensively documented discriminatory practices against African Americans and, to a lesser extent, Hispanics in the housing market. Such practices probably play a role in shaping residential patterns (Massey and Denton 1993; Ross and Turner 2005; Turner et al. 2002). Asians also experience discrimination in housing markets (Turner and Ross 2003). Over the years, discriminatory practices have included real estate agents steering racial groups to certain neighborhoods, unequal access to mortgage credit, exclusionary zoning that restricts racial groups to particular neighborhoods, and neighbors' hostility (Alba and Logan 1991, 1993; Galster 1988; Goering and Wienk 1996; Massey and Denton 1993; Massey and Mullan 1984; Meyer 2000; Yinger 1995). For these reasons, minority members—African Americans in particular—have historically been less likely to convert socioeconomic gains into advantageous residential outcomes, such as living in preferred neighborhoods (Alba and Logan 1991).

Formal barriers to integration have fallen with the passage of various laws, notably the Fair Housing Act of 1968. In essence, this act made it unlawful to discriminate on the basis of race, color, religion, or national origin in most housing market transactions. Amendments to the act in 1988 strengthened its enforcement. Recent research has indicated that discrimination in rental and owner-occupied housing markets declined substantially in the 1990s, although some discrimination still occurs (Ross and Turner 2005). Stephen Ross and Margery Turner (2005) conclude that declines in discrimination are probably a result of changing attitudes in society, increased contact with minority customers, the rising economic status of minority customers, and the continuing effect of the Fair Housing Act and its enforcement on the real estate industry (Ross and Turner 2005).

Ross and Turner (2005) also emphasize that racial and ethnic stereotypes and statistical discrimination continue to play a role in the housing market. Other research finds that inequality in access to home mortgage lending continues (Williams 2005), although some policies, such as the Community Reinvestment Act, have also helped minorities buy homes in predominately white neighborhoods (Friedman and Squires 2005). The implication of these findings is that discrimination may still contribute to residential segregation but at lower rates than in the past.

### ***Empirical Studies that Directly Examine the Effect of SES on Segregation Patterns***

Many studies of segregation have found that the effect of race overwhelms that of class for African Americans in particular (e.g., Darden and Kamel 2000; Denton and Massey 1988; Fischer et al. 2004; Iceland, Sharpe, and Steinmetz 2005; Massey and Fischer 1999; White and Sassler 2000). Levels of black–white segregation are clearly too high to be explained by SES differences alone, and black–white segregation has also generally been much greater than segregation by social class, measured by education, occupation, or income (Farley 1977; Sims 1999; White 1987).

In a study of segregation in Los Angeles county in 1990, Camille Z[ubrin]sky Charles (2001b) found that class differences explained virtually none of the difference in black–white segregation. John Farley (1995) determined much the same about the St. Louis metropolitan area in 1990, where, at all income levels, African Americans and whites with similar incomes were about as segregated as African Americans and whites overall. Likewise, researchers have found that in 1990 middle class African Americans were highly segregated from middle class whites despite small declines between 1970 and 1990 (Adelman 2004; Adelman et al. 2001). At the same time, middle class blacks lived in neighborhoods with significantly lower median incomes, higher poverty rates, and a higher incidence of other related problems than did

middle class whites (Adelman 2004; Adelman et al. 2001; Alba, Logan, and Stults 2000; Erbe 1975; Pattillo-McCoy 1999, 2000).

Interestingly, some studies using recent data have suggested that the effect of class differences on racial segregation patterns is significant (Alba et al. 2000; Clark and Ware 1997; St. John and Clymer 2000), and it may be increasing (Clark and Ware 1997; Iceland et al. 2005). Black–white segregation has declined moderately in recent decades (Iceland et al. 2002; Lewis Mumford Center 2001; Timberlake 2004), and at the same time, there have been some reductions in SES differentials (Harrison and Bennett 1995) and in housing discrimination (Ross and Turner 2005; Turner et al. 2002). John Iceland, Cicely Sharpe, and Erika Steinmetz (2005) reported that higher SES African Americans were less segregated from all whites than were lower SES African Americans. They also reported that segregation declined modestly for higher SES African Americans between 1990 and 2000. Some researchers have also argued that, more generally, the role of class in shaping residential patterns has increased in recent decades (Massey 1996; Wilson 1996). The implication of these patterns is that the relative predictive strength of the place stratification and spatial assimilation models warrants renewed attention.

The evidence tends to indicate that class plays a larger, if moderate, role in patterns of segregation for Hispanics and Asians than for African Americans (Bayer, McMillan, and Rueben 2004; Denton and Massey 1988; Logan et al. 2004; Massey and Fischer 1999). For example, John Logan, Brian Stults, and Reynolds Farley (2004) found that income differences had a larger effect on Hispanic–white dissimilarity than on black–white dissimilarity. Nancy Denton and Douglas Massey (1988) established that Hispanic and Asian segregation declines markedly from low to high socioeconomic status, supporting Massey's (1979) earlier research on Hispanics. Joe Darden (1987) also found that Hispanic–white residential segregation varied by class in Chicago in 1980 data, but black–white segregation did not.

Following the 2000 census, studies indicated that there have been no declines in Hispanic and Asian segregation in recent decades (Iceland et al. 2002; Lewis Mumford Center 2001). It could be that continued high levels of immigration from Latin America and Asia have contributed to the lack of a decline in Asian–white and Hispanic–white segregation in recent decades, as the spatial assimilation model would predict (Borjas 1995; Iceland 2004), although the lack of decline in general is also consistent with the place stratification model. Research that supports the spatial assimilation view showed that discrimination against Hispanics in the housing market declined between 1989 and 2000, yet, over the same period, discrimination against Hispanics in the rental market remained unchanged (Ross and Turner 2005; Turner et al. 2002).

Notably, not all studies point in the same direction for Hispanics and Asians. Charles (2001b) found that class differences explained virtually none of the difference in Asian–white segregation in Los Angeles in 1990, although a more substantial fraction of Hispanic–white segregation could be attributed to SES differences. Charles has speculated that self-segregation plays a large role among Asians, especially since many in the Los Angeles area are recent immigrants.

In summary, past studies have provided some support for both the spatial assimilation and the place stratification perspectives. The predictive power of place stratification is probably stronger overall, while the spatial assimilation model does a better job of explaining Asian and Hispanic residential patterns than it does African American patterns. The long history of racism and racial conflict between African Americans and whites has undoubtedly contributed to the residential patterns we see for these groups today, even in the context of reductions in formal barriers to integration and in discrimination.

### *Hypotheses*

At the outset of this analysis we posed a set of questions that guide this study. Below, these questions are followed by hypotheses from each theoretical perspective concerning the findings we would expect based on the theories.

1. Do the levels of segregation of blacks, Hispanics, and Asians from non-Hispanic whites vary by SES? According to the spatial assimilation model, the answer would be yes. The place stratification model would predict that the effect of SES is relatively small—racial stratification in society trumps class differences in determining residential patterns.
2. Does SES play a substantially smaller role in explaining black–white segregation than Asian–white and Hispanic–white segregation? Race differences by themselves do not play a prominent role in the spatial assimilation model (though differences in acculturation might). According to the place stratification model, however, SES should certainly play a smaller role in explaining black–white differences because of greater racism and discrimination against African Americans than other racial and ethnic groups in society.
3. Has black–white segregation declined relative to Asian–white and Hispanic–white segregation in recent years? Such a decline would support the spatial assimilation model, which generally does not predict differences across racial groups (again outside those associated with SES and acculturation). The place stratification model would predict strong continued differences across racial and ethnic groups.
4. Has there been a change in the effect of SES on racial and ethnic residential patterns? An increase in the effect of SES would provide support the spatial assimilation model and not really the place stratification model.

## Data and Methods

Restricted 1990 and 2000 long-form census files provided the data for this analysis of residential segregation.<sup>1</sup> While residential segregation can occur at any geographic level, we have chosen to focus on metropolitan areas as reasonable approximations of housing markets. We present estimates for all metropolitan statistical areas (MSAs) and primary metropolitan statistical areas (PMSAs), together referred to as metropolitan areas. The building blocks for all metropolitan areas are counties except in New England. There, they are based on city and town boundaries, as they were in most Census Bureau tabulations of metropolitan area statistics until the Census Bureau issued the most recent set of guidelines in 2003 (U.S. Census Bureau 2003). The data on population counts in all metropolitan areas are by census tract for Hispanics and for all racial groups. The census data also furnish counts of these groups by income, occupation, education, and other characteristics. To ensure comparability, when presenting data for 1990 and 2000, we used the 2000 boundaries of metropolitan areas, as defined by the Office of Management and Budget (OMB) on June 30, 1999. By this definition, there were 331 metropolitan areas in our analysis, and census tracts constituted the unit of analysis within metropolitan areas.<sup>2</sup> Census tracts, which typically have between 2,500 and 8,000 inhabitants, are defined with local input and are intended to represent neighborhoods. Typically, they do not change much from census to census, except to subdivide. In addition, census tracts are, by far, the analytical unit most often selected by other researchers (e.g., Logan et al. 2004; Massey and Denton 1993).<sup>3</sup>

1. The U.S. Census Bureau granted permission for the use of these internal files and none of the statistics presented in this article violate respondent confidentiality rules.

2. The segregation estimates presented in the descriptive tables (means across all metropolitan areas) are weighted by the population size of the minority and socioeconomic group in question. This has the advantage of giving relatively little weight to metropolitan areas with small populations of the group in question, where index scores are sometimes highly variable and skewed by random factors (Iceland et al. 2002).

3. Choosing a smaller unit of analysis increases segregation scores, as smaller units tend to be more homogenous. For example, the average metropolitan area dissimilarity score for African Americans was 0.640 when using census tracts, but moderately higher at 0.669 when using block groups (Iceland and Steinmetz 2003). Census tract and block-group based scores, however, are very highly correlated, so it is unlikely that using an alternate unit would affect conclusions about the effect of class on segregation over time.

The 1990 census collected information on four racial groups: white; black; American Indian, Eskimo, or Aleut; and Asian or Pacific Islander. A separate question asked whether an individual was of Hispanic origin. After much research and public comment during the 1990s, OMB revised the racial classification for Census 2000 to include five categories: white; black or African American; American Indian or Alaska Native; Asian; and Native Hawaiian or other Pacific Islander. It also allowed individuals to report more than one race. Census 2000 figures indicate that 6.8 million, or 2.4 percent of the population, reported more than one race. This study focuses on the residential patterns of African Americans, Hispanics, Asians and Pacific Islanders, and non-Hispanic whites.<sup>4</sup> For 2000, minority groups in this analysis included individuals who identified as being a member of that minority group, either alone or in combination with another race. Non-Hispanic whites consist of those who marked only white and who indicated that they were not Hispanic.<sup>5</sup>

This analysis uses the index of dissimilarity to measure residential patterns. The dissimilarity index ( $D$ ) is a measure of evenness, and is computed as:

$$D = .5 \sum_{i=1}^n |x_i / X - y_i / Y|$$

where  $n$  is the number of tracts in a metropolitan area,  $x_i$  is the population size of the minority group of interest in tract  $i$ ,  $X$  is the population of the minority group in the metropolitan area as a whole,  $y_i$  is the population of the reference group (usually non-Hispanic whites) in tract  $i$ , and  $Y$  is the population of the reference group in the metropolitan area as a whole.

Dissimilarity ranges from 0 (complete integration) to 1 (complete segregation) and essentially measures the percentage of a group's population that would have to change residence for each neighborhood to have the same percentage of that group as the metropolitan area overall. Consider a hypothetical metropolitan area where 20 percent of the population is African American. If every single neighborhood within the metropolitan area is 20 percent African American, then the dissimilarity score would equal 0. If some neighborhoods contained only African American residents and the rest had none, then the score would equal 1. Other distributions fall somewhere in between. A dissimilarity score of 0.90 would indicate that 90 percent of the African American population would need to move to other neighborhoods in order for African Americans to be equally distributed across neighborhoods. A good rule of thumb is that scores less than 0.30 indicate low segregation, 0.30 to 0.60 indicate moderate segregation, and scores over 0.60 indicate a very high level of segregation (Massey and Denton 1993).

There are certainly other measures available that capture different dimensions of segregation (see Iceland et al. 2002; Massey and Denton 1988; Massey, White, and Phua 1996; Reardon and O'Sullivan 2004), however, this analysis relies on the dissimilarity index because it is easily interpreted and remains, by far, the most widely used segregation index.<sup>6</sup> Although we

4. We do not examine residential patterns of American Indians and Alaska Natives because changes in the way the question on race was asked in the 2000 census had the largest effect on the segregation indexes of this group (Iceland et al. 2002)

5. Our more inclusive racial definition means that the minority group definitions are not mutually exclusive. Some of those who are African American may also, for example, be Asian. Other work has shown that adopting a race definition where a person is considered in a group if he or she chooses only that particular group has little effect on African American segregation calculations and a modest effect on Asian segregation calculations (Iceland et al. 2002, Appendix A). The similarity of scores across group definitions results, in large part, from the fact that the proportion of people who marked two or more race groups in the 2000 census was small (2.4 percent). Hispanic indexes are not affected by this specific issue since Hispanic origin is asked in a separate question. Methodologically, the most important issue is to ensure that the two groups used in any given index calculation are mutually exclusive, which is indeed the case in this analysis.

6. It should be noted that one feature of the dissimilarity index is that low scores can be achieved in metropolitan areas that are not particularly diverse overall (and thus its component neighborhoods are not diverse either). We also considered presenting findings using another common segregation measure—the isolation index—but decided against it

are aware that the dissimilarity index is but one common measure of segregation, we use the terms “segregation” and “dissimilarity” interchangeably, throughout. Dissimilarity or segregation “scores” in the discussion below refer to the values of the dissimilarity index for a particular group in question.

We look at the three traditional dimensions of socioeconomic status: income, occupation, and education, and add a fourth—poverty status—which is a function of income. Thus, we measure class in more ways than most previous studies, many of which examine only one dimension. In general, the problem with treating only income (or education or occupation) as “class” is that it overlooks the other important indicators of socioeconomic status. Status group communities often form around various sets of commonalities that include income, occupation status, and educational attainment (Weber 1968; White 1987). While theory does not provide strong predictions about which dimension of SES is most important in determining residential patterns, some previous empirical analyses indicate that there may be some modest differences when alternative SES indicators are used (Clark and Ware 1997; Darden 1987; Darden and Kamel 2000; Massey 1988). Although the evidence is somewhat mixed, income may be the least important measure of socioeconomic status for explaining black–white segregation, while education may be a little more important (Clark and Ware 1997; Darden 1987; Darden and Kamel 2000).

Because the dissimilarity index involves pair-wise comparisons, it is preferable to have a relatively small number of categories within each of the SES dimensions. Education is split into four fairly standard groups used in analyses: less than high school, high school graduate, some college, and college graduate (e.g., St. John and Clymer 2000). Occupations are also split into four general categories sometimes used by other researchers: managerial, professional, and technical; sales and administrative; service occupations; and farming, precision crafts, and operators (e.g., Darden and Kamel 2000). We split income groups into four categories, as do some other studies (Darden and Kamel 2000; Massey and Fischer 1999). For this study, the groups are represented by approximate household income quartiles in 1990 and in 2000. Finally, we include an indicator of poverty (e.g., Fischer 2003).<sup>7</sup> In the multivariate analysis we also include an additional control for percent native born, as this may play a role in the residential patterns of Asians and Hispanics in particular (Iceland and Lake 2004).

When we present mean segregation scores for different racial groups by SES, one important methodological issue in the descriptive analysis is who the reference group should be. Many previous studies, when focusing on the effect of class, chose, for example, to look at the segregation of middle class African Americans from middle class whites, in other words, segregation “controlling for class” (Clark and Ware 1997; Darden 1987; Darden and Kamel 2000; Denton and Massey 1988; Farley 1977). In one sense, this is an appropriate comparison if one wants to look at issues of “locational attainment” related to the place stratification

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for two reasons. First, the isolation index is strongly affected by the relative size of groups being compared in metropolitan areas, such that larger groups will be more isolated than smaller groups, holding other factors constant. While this is not an inherently undesirable feature of an index, it does mean that when we look at isolation scores for specific SES groups, we find that larger SES groups are often characterized by higher levels of isolation (e.g., the nonpoor of all race groups are much more isolated than the poor). We would like this study to focus explicitly on how evenly groups are distributed across neighborhoods, and how this varies by socioeconomic status, thus the dissimilarity index is the more appropriate measure. Second, there are already many comparisons included in this study (comparisons across race, class, and time) such that adding another index adds yet another dimension to already numerous comparisons. It should be noted that the most basic conclusions of this study actually do not change very much if isolation is used in addition to dissimilarity, though the addition of isolation does add greater complexity and produce a more mixed set of patterns due to the properties of the isolation index mentioned above. See Iceland, Sharpe, and Steinmetz (2005) for a study that focused on African American class segregation using both the dissimilarity and isolation indexes.

7. For the education segregation indexes, only individuals age 25 and over are included in the analysis. For the occupation indexes, only workers are included. Household income indexes omit people in group quarters, while the poverty indexes do not include people not in the poverty universe—such as people in institutions, military group quarters, and college dormitories.

model because it can help answer the question: Are African Americans and whites of the same class living in similar neighborhoods?

It is not necessarily appropriate, however, to “control for class” if the goal is to test the spatial assimilation model. The spatial assimilation model would *not* predict, for example, that the segregation score of higher-SES blacks from higher SES whites would be lower than that of lower-SES blacks from lower-SES whites. This spatial assimilation model holds, rather, that SES (and acculturation) differences across groups help to explain overall patterns. Because this study does not focus on issues of locational attainment, we would argue that the most appropriate comparison here is to look at whether higher SES African Americans, Hispanics, and Asians are less segregated from non-Hispanic whites as a whole. One implication is that if SES levels rose for any of these groups in the future, then overall segregation between whites and blacks, Hispanics, or Asians would decline as SES rose for each of these minority groups. This type of reference group comparison has also been used by some other studies (e.g., Massey and Fischer 1999; and St. John and Clymer 2000, who used both methods).

In order to capture both of these perspectives, however, we calculate the dissimilarity indexes both ways. First, we present dissimilarity indexes for each minority SES group vis-à-vis all non-Hispanic whites (the second method described above, but our preferred method). Second, we compare the segregation of each minority SES group vis-à-vis non-Hispanic whites of the same SES. Our descriptive tables also contain a third comparison: We calculate indexes that look at class segregation within race groups. This comparison helps to provide perspective for the racial and ethnic dissimilarity scores.

## Results

Table 1 presents the percentage of each group that is within a particular socioeconomic category. As expected, blacks and Hispanics tend to be more concentrated in lower SES categories than Asians and Pacific Islanders or whites. For example, a higher proportion of non-Hispanic whites than African Americans or Hispanics are in the top household income category, not poor, have a B.A. degree or higher, and are in managerial, professional, or technical occupations. We generally see declines in the proportion of blacks and Hispanics in the lowest SES categories between 1990 and 2000. There is also an increase in the proportion of all racial/ethnic groups who were in managerial, professional, and technical occupations.

Table 2 presents the dissimilarity indexes using the different reference groups described earlier. Several patterns emerge. First, we see—as previous studies have documented—that black–white segregation is higher than that for the other minority groups in the table. Moreover, even when we consider specific SES categories, we still see that black–white segregation is higher than Hispanic–white and Asian–white segregation, even when compared to non-Hispanic whites of the same SES.<sup>8</sup> This supports the place stratification model, which predicts that blacks would be the most disadvantaged group.

When looking at the first set of indexes where all non-Hispanic whites are the reference group, we see that for all race groups, higher SES group members tend to be less segregated from whites than lower SES members, providing support for the hypothesis that SES status substantially affects patterns of racial segregation. This suggests that an increase in the average SES of a race group would decrease their segregation from non-Hispanic whites, other factors being equal. Note that the significance of these findings will be tested in the multivariate analysis, in which we will also control for other metropolitan and group characteristics.

8. It should be noted that one of the properties of the dissimilarity index is that the overall segregation score for each race group is not simply an average of the segregation of each component class group. For example, it is possible for each Asian SES group to have higher segregation from non-Hispanic whites than Asians as a whole if each Asian SES group tends to occupy their own residential niches but Asians as a whole are more evenly spread across neighborhoods.

**Table 1 • Distribution of Race Groups across Socioeconomic Status Categories in U.S. Metropolitan Areas, 1990 and 2000<sup>a</sup>**

	African Americans		Hispanics		Asians and Pacific Islanders		Non-Hispanic Whites		Total	
	1990	2000	1990	2000	1990	2000	1990	2000	1990	2000
Household income quartiles										
≤\$17,499 (≤\$19,999 in 2000)	35.7	27.9	28.4	21.5	16.3	13.7	15.7	11.4	19.5	15.3
17,500–32,499 (20,000–44,999)	25.4	31.8	28.4	35.0	19.7	22.9	22.4	25.2	23.3	27.4
32,500–49,999 (45,000–74,999)	19.5	23.1	22.1	25.2	21.4	25.6	25.1	28.7	23.9	27.3
50,000 or over (75,000 or over)	19.4	17.3	21.1	18.3	42.5	37.8	36.9	34.7	33.2	30.1
Poverty										
Poor	27.7	23.5	24.5	22.2	14.0	12.7	7.6	7.1	12.1	11.8
Nonpoor	72.3	76.5	75.5	77.8	86.0	87.3	92.4	92.9	87.9	88.2
Education (population 25 years and over)										
12th grade or less	34.5	24.7	49.8	47.2	22.2	19.5	18.7	12.8	23.1	18.7
High school diploma or equivalent	27.9	28.9	21.4	21.9	18.1	16.7	30.0	28.1	28.7	26.9
Some college	25.4	30.3	19.4	20.1	22.5	21.6	26.7	29.1	25.9	27.8
Bachelor's degree or higher	12.3	16.1	9.4	10.8	37.2	42.3	24.5	30.1	22.3	26.7
Occupation										
Managerial, professional, technical	19.5	23.2	15.2	16.3	34.6	39.8	31.9	36.5	29.1	32.4
Sales and administrative	27.4	28.7	24.0	23.9	28.4	26.3	30.7	28.9	29.6	28.1
Service occupations	24.0	23.5	19.7	22.7	15.4	15.4	12.2	13.5	14.3	16.1
Farming, precision, and operators	29.0	24.7	41.1	37.0	21.6	18.6	25.2	21.1	27.0	23.5

Source: Tabulations of 1990 and 2000 decennial census data. N = 331 metropolitan areas.

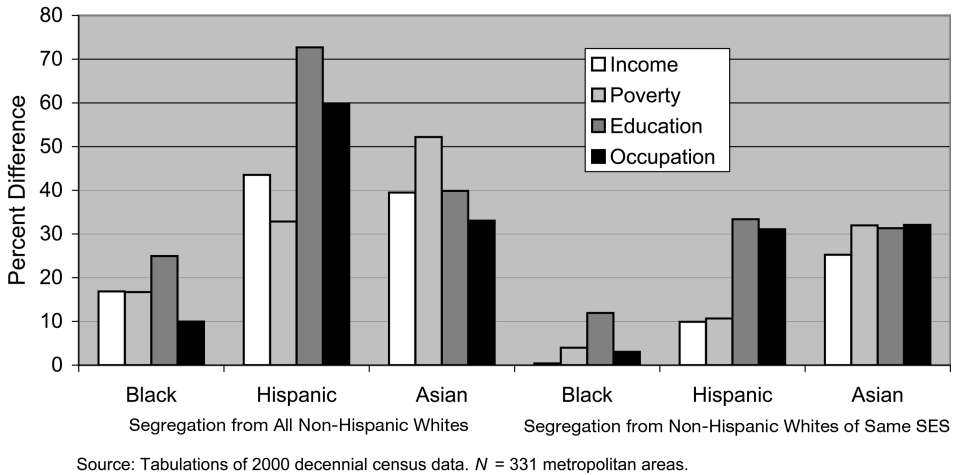
<sup>a</sup> Numbers are in percent.

**Table 2 • Dissimilarity Indexes for Socioeconomic Groups, 2000**

	Segregation of Minority SES Group from All Non-Hispanic Whites				Segregation of Minority SES Group from Non-Hispanic Whites of Same SES				(Within Race) — (Group Segregation) by SES Status <sup>a</sup>			
	Black	Hispanic	Asian	Total	Black	Hispanic	Asian	Total	Black	Hispanic	Asian	White
	Total	0.643	0.513	0.422	NA	NA	NA	NA	NA	NA	NA	NA
Household income quartiles												
\$19,999 or less	0.697	0.631	0.603	0.631	0.631	0.542	0.534	0.311	0.312	0.284	0.443	0.272
20,000–44,999	0.644	0.568	0.513	0.609	0.609	0.513	0.483	0.188	0.185	0.188	0.335	0.190
45,000–74,999	0.615	0.509	0.466	0.614	0.614	0.497	0.460	0.146	0.232	0.215	0.286	0.137
75,000 or over	0.597	0.439	0.432	0.629	0.629	0.493	0.427	0.325	0.360	0.337	0.386	0.292
Poverty												
Poor	0.706	0.646	0.616	0.636	0.636	0.548	0.540	0.351	0.317	0.284	0.447	0.299
Nonpoor	0.605	0.486	0.405	0.612	0.612	0.495	0.409	0.356	0.326	0.290	0.447	0.300
Education (population 25 years and over)												
12th grade or less	0.689	0.621	0.575	0.642	0.642	0.521	0.530	0.322	0.281	0.314	0.402	0.271
High school diploma or equivalent	0.643	0.503	0.486	0.628	0.628	0.464	0.473	0.166	0.162	0.174	0.280	0.187
Some college	0.602	0.414	0.431	0.600	0.600	0.410	0.429	0.121	0.183	0.259	0.231	0.107
Bachelor's degree or higher	0.552	0.360	0.411	0.574	0.574	0.390	0.404	0.342	0.344	0.403	0.368	0.321
Occupation												
Managerial, professional, technical	0.563	0.369	0.398	0.576	0.576	0.406	0.388	0.244	0.236	0.305	0.324	0.213
Sales and administrative	0.613	0.470	0.440	0.602	0.602	0.462	0.432	0.086	0.141	0.174	0.209	0.084
Service occupations	0.642	0.544	0.491	0.611	0.611	0.509	0.477	0.166	0.184	0.192	0.299	0.141
Farming, precision, and operators	0.619	0.590	0.530	0.593	0.593	0.533	0.513	0.226	0.181	0.232	0.347	0.220

Source: Tabulations of 2000 decennial census data. *N* = 331 metropolitan areas.

<sup>a</sup> All people of the same race who are not in that particular SES category.



**Figure 1 • Differences in the Segregation of the Highest and Lowest SES Groups from non-Hispanic Whites, 2000**

However, the effect of class varies by race, as was also hypothesized, such that it tends to matter less for African Americans than for Hispanics and Asians. For example, among blacks, the difference between the dissimilarity scores of the highest and lowest income quartiles is 16.9 percent, which is considerably lower than the differences for Hispanics (43.5 percent) or for Asians and Pacific Islanders (39.5 percent).<sup>9</sup> We see this same type of pattern for poverty, education, and occupation, as illustrated in Figure 1.<sup>10</sup>

Comparing the dissimilarity scores between the high and low SES groups also indicates that only a modest amount of the high overall levels of black segregation can be attributed to class differences. After all, the dissimilarity scores for even the high SES groups are high in absolute terms—all are over 0.550. Thus, for blacks, the spatial assimilation model does only a moderate job of explaining residential patterns.

For Asians and Hispanics, the difference in the segregation of high and low SES people from non-Hispanic whites is considerable. In fact, for a couple of high SES categories, such as Hispanics with a B.A. degree or higher or nonpoor Asians, these groups are about as segregated, or are more segregated, from Hispanics and Asians of other classes, respectively, than they are from non-Hispanic whites. For example, the dissimilarity score for Hispanics with a B.A. is 0.360 when the reference group is all non-Hispanic whites, 0.390 when the reference group is non-Hispanic whites with a B.A. or higher, and 0.403 when the reference group is all other Hispanics (those with less than a B.A.). More often than not, however, particular SES groups are indeed more segregated from whites than from other members of the same race.

Another issue meriting discussion is whether the dimension of socioeconomic status that we consider makes a difference in these comparisons. First, from Figure 1 it does appear that minority segregation from whites varies across all the SES dimensions in the analysis (income,

9. The computation is:  $([0.697 - 0.597]/0.597)$ , where 0.597 is the dissimilarity score for the highest income quartile and 0.697 is the score for the lowest quartile.

10. The specific SES groups compared in Figure 1 are: first income quartile versus fourth income quartile; poor versus not poor; less than high school education versus B.A. or greater; and managerial, professional, and technical versus farming, precision, and operators.

poverty, education, and occupation).<sup>11</sup> Education is the dimension of SES that consistently had a relatively high level of variation. This corresponds to the findings from Darden (1987) and William Clark and Julian Ware (1997). Income seems to often be one of the less salient dimensions of SES. Nevertheless, we do, descriptively, see differences in segregation across all SES dimensions, such that it would be fair to say that all are important in explaining residential patterns.

Table 3 shows the percentage change in dissimilarity scores from 1990 to 2000. For blacks, we generally see a decline in the segregation from all whites and from whites of the same SES for those in higher SES categories. However, as also reported in Iceland, Sharpe, and Steinmetz (2005), segregation from non-Hispanic whites increased for low-SES African Americans.<sup>12</sup>

There is no clear pattern for Hispanics and Asians. A small majority of Hispanic SES groups appeared to experience increases in segregation when looking at either segregation from all whites or from whites of the same SES, mirroring the overall increase. Neither is there an obvious pattern for Asians, where low income groups and the poor experienced declines in segregation, but lower (and the highest) educational groups may have experienced increases in segregation. Thus, we cannot conclude that the spatial assimilation model became a better (or worse) predictor of Asian and Hispanic segregation patterns over the 1990s, although it did appear to become a better predictor for blacks. This is also tested in the following multivariate model.

The final set of columns in Table 3 shows that intragroup class segregation tended to decline for all race groups, except, to some extent, among non-Hispanic whites. That is, in contrast to patterns that had been described in the 1970s and 1980s by William Julius Wilson (1996) and Massey (1996), most groups of low SES and high SES African Americans experienced little change or became less segregated from each other over the 1990s. The same pattern holds for Hispanics and Asians, where there tended to be less intragroup segregation across SES groups in 2000 than in 1990.

### *Multivariate Analysis*

While the findings from the descriptive tables are informative, they are only suggestive. Thus, we ran multivariate models that examine the contributions of race and class to the residential patterns of different groups, while also controlling for other metropolitan area characteristics. To gauge how segregation scores differ across race groups in all U.S. metropolitan areas, we adopted the strategy of pooling the segregation scores of different groups and including dummy variables for each group (e.g., Massey and Denton 1989; Wilkes and Iceland 2004). In this analysis, the dependent variable represents the segregation of each racial/ethnic group by SES from all non-Hispanic whites. For example, for each metropolitan area, we have dissimilarity scores for African Americans, Asians, and Hispanics in the four income quartiles for a total of 12 scores for each metropolitan area in a particular model. Because the same metropolitan areas are included several times in the equation we produce corrected standard errors using generalized linear regression models that account for the fact that the independent variables have a correlated error structure.<sup>13</sup>

11. It should be noted that these dimensions are all correlated with each other, and that the occupation categories do not necessarily have a clear rank ordering, except that the “managerial, professional, and technical” category is the highest SES group of the ones listed.

12. Note that the overall percentage of change in segregation of a race group is not simply an average of the percent change in segregation of each SES group from non-Hispanic whites. For example, particular SES groups can become more segregated from whites but segregation of the race group as a whole can decline if the proportion of the race group in the least-segregated SES group increases while those in the highest segregated SES group declines (i.e., a compositional shift).

13. Since our goal is to explain variation across metropolitan areas, we run unweighted regression models. Because of this, the multivariate analyses contain segregation scores for particular racial and ethnic groups (i.e., black, Asian, and Hispanic) only if there are at least 1,000 people of that group present in the metropolitan area. Segregation indexes for metropolitan areas with small minority populations are less reliable than those with larger ones (Iceland et al. 2002).

Table 3 • Percentage Change in Dissimilarity Indexes for Socioeconomic Groups, from 1990 to 2000

	Segregation of Minority SES Group from All Non-Hispanic Whites			Segregation of Minority SES Group from Non-Hispanic Whites of Same SES			(Within Race) – (Group Segregation) by SES Status <sup>a</sup>					
	Black	Hispanic	Asian	Black	Hispanic	Asian	Total	Black	Hispanic	Asian	White	
Total	-5.7	1.2	-1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
Household income quartiles												
≤\$17,499 (≤\$19,999 in 2000)	3.8	1.1	-2.0	2.6	1.4	-2.2	-0.6	-3.6	-3.3	-9.5	0.9	0.9
17,500–32,499 (20,000–44,999)	1.8	0.8	-3.6	0.3	-1.3	-3.9	11.2	-5.2	-5.4	-12.4	11.0	11.0
32,500–49,999 (45,000–74,999)	-2.2	-0.5	-3.7	-2.1	-0.3	-3.3	1.7	-2.5	-4.8	-14.1	2.4	2.4
50,000 or over (75,000 or over)	-3.8	2.1	0.9	-2.6	4.2	2.1	3.3	-1.0	-4.6	-9.1	3.0	3.0
Poverty												
Poor	2.4	-0.7	-3.1	1.1	-0.9	-2.9	-5.2	-4.1	-6.1	-10.0	-0.4	-0.4
Nonpoor	-0.7	2.7	2.3	-0.4	2.7	2.3	-4.7	-4.1	-7.2	-8.9	-0.9	-0.9
Education (population 25 years and over)												
12th grade or less	3.6	1.3	1.9	3.3	-1.4	2.6	8.2	0.5	-3.6	-0.8	4.2	4.2
High school diploma or equivalent	1.7	5.4	2.3	0.4	2.4	2.3	12.5	6.2	-12.9	-1.7	18.7	18.7
Some college	0.9	3.5	0.6	-0.7	0.9	-0.9	-2.3	-14.7	-7.2	-5.1	-2.1	-2.1
Bachelor's degree or higher	-1.5	-5.4	1.3	-1.7	-1.3	1.3	1.9	-6.8	-5.9	-3.1	0.9	0.9
Occupation												
Managerial, professional, technical	0.4	-0.2	1.8	-0.3	1.9	2.1	6.1	-3.0	-3.2	-0.1	3.5	3.5
Sales and administrative	1.9	4.2	2.0	-0.5	1.8	1.4	-10.7	-8.2	-13.2	-4.4	-3.4	-3.4
Service occupations	2.6	2.1	-0.5	0.7	1.3	0.5	-2.9	-1.3	-10.1	-7.1	1.3	1.3
Farming, precision, and operators	2.1	2.4	3.4	1.6	1.4	3.9	2.2	0.4	-5.9	1.6	1.6	1.6

Source: Tabulations of 1990 and 2000 decennial census data. N = 331 metropolitan areas.

<sup>a</sup> All people of the same race who are not in that particular SES category.

A key feature of the model is the inclusion of dummy variables indicating whether a particular segregation score is for: African Americans (omitted category), Asians, and Hispanics, or for the first, second, third, or fourth income quartile (first quartile omitted). Thus, regression coefficients will tell us whether Asian segregation scores are systematically lower than African American scores, whether scores for fourth income quartile groups are systematically lower than for first income quartile groups, and so forth.

The regressions also contain a set of interaction terms between race and SES category. These interaction terms go to the heart of the analysis, as summarized in two of the research questions posed at the beginning of the article: Do levels of segregation from non-Hispanic whites vary by SES for blacks, Hispanics, and Asians? And does SES play a substantially smaller role in explaining black-white segregation than Asian-white and Hispanic-white segregation?

The models also contain a number of control variables: region (dummy variables for Northeast, Midwest, and South, with West being the omitted category), metropolitan area population size, the size of the particular minority in a given metropolitan area, the percentage of the minority group that is foreign-born, and then a series of metropolitan controls for the overall occupational, income, educational, poverty, and foreign-born composition.<sup>14</sup> The coefficients for these variables are not shown in the tables for the sake of parsimony and simplicity, and in order to focus the discussion on our hypotheses. Full table results are available from the authors.

In addition to models that explain cross-sectional variation in segregation in 2000, we also run change models, where the dependent variables indicate the change in segregation of a particular race/SES group from all non-Hispanic whites. This will help us answer questions about the changing roles of race and class in producing the segregation patterns we observed over the 1990s.

Tables 4 and 5 show the association between SES indicators and patterns of segregation in 2000, and changes in segregation from 1990 to 2000. There are four models in the table, each corresponding to the alternative indicators of SES used. Model 1 shows results by income, Model 2 by education, Model 3 by occupation, and Model 4 by poverty status of the groups in question.

All models in Table 4 show that Hispanics and Asians are less segregated from non-Hispanic whites than are blacks, controlling for a variety of metropolitan and group characteristics. For example, the Hispanic coefficient in Model 1 indicates that Hispanic dissimilarity scores are, on average, 0.074 lower than black dissimilarity scores, holding other factors constant (recall that dissimilarity scores range from 0 to 1).

In addition, all models show that higher SES groups have lower segregation scores than lower SES groups. The interaction terms tend to show that higher SES Hispanics and Asians, in particular, have lower segregation scores—thus supporting the notion that class differences in segregation are larger for Hispanics and Asians than African Americans. This is also supported by other models that used Asians as the reference group, in which the interaction term between African American and the higher income quartiles are positive and significant, indicating that high income does less to reduce black segregation than it does for Asians (not shown).

An example may help illustrate how the coefficients in the table should be interpreted. The “Asian” coefficient in Model 1 (−0.063) indicates that the dissimilarity scores for Asians are 0.063 points lower than for blacks (the omitted group). The income quartile 4 coefficient (−0.088) indicates that those in the highest income group have dissimilarity scores 0.088 lower than those in the first income quartile. The negative (and statistically significant) sign of the interaction coefficient between Asian and quartile 4 (−0.034) indicates two things:

14. More specifically, the metropolitan area composition variables refer to the combined percentage of non-Hispanic whites and the minority group in question (the two groups in a particular segregation index) who are in each of the four occupational, educational, and income categories, the percentage who are poor, and the percentage who are foreign born.

1) for those in the highest quartile, segregation is further reduced if one is Asian rather than African American (that is, the effect of high SES varies by race); and 2) for those who are Asian, segregation is lower if one is in the highest income quartile rather than in the lowest income quartile (the effect of being Asian varies by class).

Education is the one exception to the pattern of high SES Asians (in particular) having lower segregation scores. The positive interaction term for Asians indicates that the difference in segregation between the high and low educational categories is less for Asians than it is for blacks—contrary to expectations and contrary to the findings for the other SES indicators (income, occupation, and poverty).<sup>15</sup> For Hispanics we still see a wider SES gap by education than among African Americans, except for the highest category (B.A. or above). It is not entirely clear why education for Asians (and to a lesser extent Hispanics) is an exception, though descriptive statistics in Table 2 do indicate somewhat larger African American differentials in segregation from all non-Hispanic whites by education and somewhat smaller Asian differentials by education than when considering other SES dimensions (particularly income and poverty status).<sup>16</sup>

In summary, the results from Table 4 indicate that: 1) the levels of racial and ethnic segregation of African Americans, Hispanics, and Asians from non-Hispanic whites vary by class, as the spatial assimilation model would predict; 2) African Americans are more segregated from non-Hispanic whites than are other groups, even after controlling for a number of metropolitan area and group characteristics, as the place stratification model would predict; and 3) SES tends to play a substantially smaller role in explaining black–white segregation than Asian–white and Hispanic–white segregation, with the exception of education, as the place stratification model would predict.

Table 5 shows the relationship between SES, race/ethnicity, and changes in segregation from 1990 to 2000—or, more precisely, the 2000 dissimilarity score minus the 1990 dissimilarity score. The race/ethnicity coefficients indicate that Hispanics and Asians had smaller increases (or larger declines) in segregation than African Americans had, holding other factors constant. For example, the  $-0.039$  coefficient for Asians in Model 1 indicates that Asian dissimilarity increased by 0.039 points less (or declined by 0.039 point more, as the case may be) than African American dissimilarity scores, holding other factors constant. Results also indicate that higher SES groups experienced larger declines in segregation than did the lower, omitted SES categories.

The interaction terms in the models indicate that the effect of SES often varied by race and ethnicity. A majority of the coefficients indicate that the declines in segregation were *not* concentrated in higher SES Asian and Hispanic groups; similar to the descriptive findings in Table 2, the patterns for these groups in Table 5 are mixed. If anything, the highest Asian SES groups experienced increases in segregation.

Another example may help in the interpretation of these coefficients. If one were to ask what the average change in the dissimilarity score for Asians in the top income quartile was between 1990 and 2000, the following calculation would need to be made: the intercept (0.049) minus the Asian coefficient (0.039) minus the income quartile 4 coefficient (0.043) plus the Asian times quartile 4 coefficient (0.043) equals the change in the dissimilarity score between 1990 and 2000 (0.10). Thus, we would conclude that Asians in the top income quartile, on average, experienced small increases in segregation in the decade.

15. Although the positive interaction term indicates a smaller SES effect for Asians when considering education, it should be noted that the sum of coefficients still indicate that highly educated Asians are less segregated than highly educated blacks since the negative “Asian” coefficient far exceeds the positive interaction term coefficient.

16. The coefficients for the control variables in the models not shown in Table 4 tend to act as expected. The coefficients that are statistically significant in at least three of the four models indicated that: segregation is higher in the Northeast and Midwest than the West (the omitted category), metropolitan areas with larger populations had higher levels of segregation, and the higher the share of the metropolitan area’s population with some college or a B.A. degree, the lower the level of segregation.

**Table 4 • Generalized Linear Regressions Indicating the Association between Race, Ethnicity, and SES and Levels of Segregation, 2000**

	Dependent Variable in All Models: Dissimilarity Score in 2000							
	Model 1 With Income as SES Indicator		Model 2 With Education as SES Indicator		Model 3 With Occupation as SES Indicator		Model 4 With Poverty as SES Indicator	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Intercept	0.939**	0.308	0.981**	0.340	1.299**	0.351	0.882**	0.312
Group								
Black (omitted)								
Hispanic	-0.074**	0.007	-0.074**	0.008	-0.053**	0.007	-0.056**	0.008
Asian	-0.063**	0.010	-0.095**	0.011	-0.065**	0.010	-0.017	0.013
Income								
Income quartile 1 (<\$20,000) (omitted)								
Income quartile 2 (\$20,000–44,999)	-0.067**	0.003						
Income quartile 3 (\$45,000–74,999)	-0.092**	0.004						
Income quartile 4 (>\$75,000)	-0.088**	0.006						
Hispanic × Quartile 2	-0.011**	0.004						
Hispanic × Quartile 3	-0.023**	0.005						
Hispanic × Quartile 4	-0.019**	0.007						
Asian × Quartile 2	-0.045**	0.005						
Asian × Quartile 3	-0.048**	0.005						
Asian × Quartile 4	-0.034**	0.007						
Education								
12th grade or less (omitted)								
High school diploma			-0.065**	0.004				
Some college			-0.124**	0.005				
Bachelor's degree or higher			-0.136**	0.005				
Hispanic × High school diploma			-0.028**	0.005				
Hispanic × Some college			-0.023**	0.006				
Hispanic × BA+			0.011	0.008				

Asian × High school diploma	0.014*	0.005		
Asian × Some college	0.030**	0.006		
Asian × BA+	0.034**	0.006		
Occupation				
Farming, precision, and operators (omitted)				
Service occupations		0.012**	0.003	
Sales and administrative		-0.022**	0.003	
Managerial, professional, technical		-0.066**	0.004	
Hispanic × Service occupations		-0.026**	0.004	
Hispanic × Sales and administrative		-0.052**	0.005	
Hispanic × Managerial, professional, technical		-0.048**	0.006	
Asian × Service occupations		-0.024**	0.005	
Asian × Sales and administrative		-0.043**	0.005	
Asian × Managerial, professional, technical		-0.024**	0.005	
Poverty status				
Nonpoor				-0.146** 0.004
Hispanic × Nonpoor				-0.060** 0.006
Asian × Nonpoor				-0.131** 0.006
N	3,744	3,744	3,744	1,872
Log likelihood	4,188.646	4,237.676	4,379.091	2,163.474

Notes: The unit of analysis is the segregation score for a particular race and SES group in a given metro area. Other controls in the model: region, metro area size, minority group size, percent of the minority group in question that is foreign-born, and metro area composition by occupational, educational, and income categories, poverty status, and nativity. See text for details.

\*  $p < 0.05$  \*\*  $p < 0.01$ .

**Table 5 • Generalized Linear Regressions Indicating the Association between Race, Ethnicity, and SES and Changes in Segregation, Changes from 1990 to 2000**

	<i>Dependent Variable in All Models: Changes in Segregation<sub>net</sub>; (2000 dissimilarity score) – (1990 dissimilarity score)</i>							
	<i>Model 1 With Income as SES Indicator</i>		<i>Model 2 With Education as SES Indicator</i>		<i>Model 3 With Occupation as SES Indicator</i>		<i>Model 4 With Poverty as SES Indicator</i>	
	<i>Coef.</i>	<i>S.E.</i>	<i>Coef.</i>	<i>S.E.</i>	<i>Coef.</i>	<i>S.E.</i>	<i>Coef.</i>	<i>S.E.</i>
Intercept	0.049**	0.014	0.042**	0.015	0.027	0.014	0.001	0.018
Group								
Black (omitted)								
Hispanic	-0.019**	0.005	-0.018**	0.006	-0.011	0.006	-0.036**	0.005
Asian	-0.039**	0.006	-0.036**	0.006	-0.026**	0.006	-0.030**	0.006
Income								
Income quartile 1 (<\$20,000) (omitted)								
Income quartile 2 (\$20,000–44,999)	-0.027**	0.004						
Income quartile 3 (\$45,000–74,999)	-0.046**	0.004						
Income quartile 4 (>\$75,000)	-0.043**	0.005						
Hispanic × Quartile 2	0.007	0.006						
Hispanic × Quartile 3	0.006	0.006						
Hispanic × Quartile 4	0.017**	0.006						
Asian × Quartile 2	-0.013*	0.007						
Asian × Quartile 3	0.007	0.007						
Asian × Quartile 4	0.043**	0.007						
Education								
12th grade or less (omitted)								
High school diploma			-0.015**	0.004				
Some college			-0.022**	0.004				
Bachelor's degree or higher			-0.032**	0.005				
Hispanic × High school diploma			0.006	0.006				
Hispanic × Some college			-0.007	0.006				
Hispanic × BA+			-0.036**	0.008				

Asian × High school diploma	0.000	0.006		
Asian × Some college	-0.013*	0.007		
Asian × BA+	0.016*	0.007		
Occupation				
Farming, precision, and operators (omitted)				
Service occupations				0.004
Sales and administrative				0.004
Managerial, professional, technical				0.004
Hispanic × Service occupations				-0.008*
Hispanic × Sales and administrative				-0.004
Hispanic × Managerial, professional, technical				-0.011*
Asian × Service occupations				-0.031**
Asian × Sales and administrative				-0.014*
Asian × Managerial, professional, technical				-0.028**
Poverty status				-0.009
Nonpoor				-0.025**
Hispanic × Nonpoor				0.007
Asian × Nonpoor				0.007
N	3,744	3,744	3,744	1,872
Log likelihood	4,869.527	4,732.617	4,810.754	2,721.471

Notes: The unit of analysis is the change in segregation score for a particular race and SES group in a given metro area. Other controls in the models: region, change in metro size, minority group size, % of the minority group in question that is foreign - born, and change in metro composition by occupational, educational, and income categories, and poverty and nativity status. See text for details.

\*  $p < 0.05$  \*\*  $p < 0.01$ .

In other models where Asians are the reference group rather than African Americans, results confirm that some higher SES African Americans in particular (top income quartile, B.A. degree or higher, and nonpoor) experienced larger declines in segregation than African Americans as a whole (not shown). These results suggest that SES—and thus the spatial assimilation model—are becoming more important in explaining African American segregation from non-Hispanic whites. The difference in segregation scores between the highest and lowest black SES groups widened over the 1990s, as also indicated by descriptive findings in Table 3.<sup>17</sup>

## Conclusion

This article examined the role of race and class in explaining the residential segregation of African Americans, Hispanics, and Asians from non-Hispanic whites in all U.S. metropolitan areas over the 1990 to 2000 period. The purpose was to test how well the spatial assimilation and place stratification perspectives explain patterns of residential segregation. Now we return to the four specific questions that guided this analysis. The first question asked: Do the levels of segregation of African Americans, Hispanics, and Asians from non-Hispanic whites vary by SES? Supporting the spatial assimilation model, our analysis indicated that the answer is yes. Higher SES groups were less segregated from non-Hispanic whites than were lower SES groups. The second question was: Does SES play a substantially smaller role in explaining black–white segregation than Asian–white and Hispanic–white segregation? Supporting the place stratification model, our answer is yes. We found that while SES mattered for all groups, higher SES Hispanics and Asians, particularly, had lower segregation scores than lower SES groups, supporting the notion that class plays a larger role in explaining Hispanic and Asian residential patterns than it does African American patterns.

Third, we asked: Has black–white segregation declined relative to Asian–white and Hispanic–white segregation, holding other factors constant? The answer is generally no, thus supporting the place stratification perspective. Descriptive statistics indicated that the overall African American dissimilarity score declined in the 1990s while Hispanic and Asian scores did not change much in either direction. Multivariate models, however, indicated that Asian and Hispanic dissimilarity scores were more apt to decline than African American scores, once we controlled for SES and other group and metropolitan area characteristics. Among those in the highest SES categories (top income quartile, B.A. degree or higher education, and the nonpoor), however, there was little difference in patterns of change across racial and ethnic groups over the decade.

The answer to the fourth question—“Has there been a change in the effect of SES on racial and ethnic residential patterns?”—is yes for blacks but no for Hispanics and Asians. In particular, we found that, for high SES blacks, the difference in segregation from whites increased compared to that of low SES blacks, over the 1990 to 2000 period, providing some support for the spatial assimilation model. We saw mixed patterns for Asians and Hispanics.

In short, these findings suggest that socioeconomic differences between race groups play an important role in the residential patterns we see today, although the effect is stronger for Asians and Hispanics than for African Americans. The fact that SES matters provides support for the spatial assimilation perspective, as the implication is that if and as the socioeconomic

17. The coefficients for the control variables that are statistically significant in three of the four models in Table 5 indicated that: segregation increased in metropolitan areas with greater population growth, segregation declined for groups that experienced an increase the proportion of their population that was foreign-born but increased in metropolitan areas where there was a general increase in the population that was foreign-born (there could be some collinearity between these variables; when controls for changes in the metropolitan area share that are foreign-born are not included in the model, the coefficient for the proportion of the group that is foreign-born is not significant in this way in most of the models), and segregation declined in metropolitan areas with an increase in the proportion of people in sales and administrative occupations.

status of minority groups rises, we will see increased integration between these racial and ethnic groups and non-Hispanic whites. And although SES mattered less for African Americans than other groups in both 1990 and 2000, we did see an increase in the strength of SES for African Americans over that time, with little clear change for Asians and Hispanics. It should be noted that the generally lower socioeconomic levels attained by minority group members are, in part, a result of racial discrimination and do not simply occur by chance.

In addition, we still see some continued support for the place stratification model, which highlights the role of racial residential preferences and/or discrimination in determining residential patterns. In general, residential segregation by race and ethnicity tended to be higher than segregation by SES status. Place stratification also helps explain why African Americans were more segregated from non-Hispanic whites, and even had smaller declines in segregation from non-Hispanic whites, than Asians and Hispanics had, after we controlled for SES and other group-specific and metropolitan area factors. The one exception is that some high SES African Americans saw patterns of change in segregation that were similar to the patterns high SES Hispanics and Asians experienced.

How, then, does one reconcile the fact that the overall dissimilarity score fell more for African Americans over the 1990s than for Hispanics and Asians, even though multivariate models tell a somewhat different story? The answer is the changing composition of the different racial and ethnic groups. The 1990s witnessed a significant movement of African Americans out of some of the lower SES categories (e.g., being in poverty or having less than a high school education). Often this movement was greater for African Americans than it was for Asians and Hispanics. Low SES blacks, Hispanics, and Asians are all more likely to be more segregated from non-Hispanic whites than higher SES groups. Thus, compositional changes in the African American population alone, are likely to have played a role in the overall decline in black–white segregation.

This implies two things. First, the effect of race and ethnicity on residential patterns has not narrowed across groups over the 1990s. That is, particular African Americans SES groups did not experience greater declines in segregation from whites than Hispanics and Asians of the same SES experienced. The continued importance of race indicates that institutional barriers to mobility and racial attitudes and preferences warrant sustained attention. Indeed, while discrimination against African Americans in the housing market declined over the 1990s (Ross and Turner 2005; Turner et al. 2002), such discrimination, or at least the attitudes that drive residential choices made by whites (Charles 2000; Zubrinsky and Bobo 1996), still play a role in shaping residential patterns.

Second, and perhaps on a more positive note, if African Americans continue to see improvements in income, education, and occupational attainment and decreases in the number of blacks living in poverty, then we can expect black–white residential segregation to decline further. The same would be all the more true for Hispanics and Asians, where we see even larger effects of SES. Hispanics and Asians did not witness a compositional shift to higher SES categories to the same extent African Americans did over the 1990s. For example, the proportion of African Americans with a B.A. or more increased by 32 percent—higher than the 14 to 15 percent increases for Asians and Hispanics or the 23 percent increase for non-Hispanic whites. Future research should continue to investigate the role of SES on racial and ethnic residential segregation and determine whether the role of class in explaining residential patterns continues to increase.

A related issue that merits further consideration is the role that nativity plays in segregation patterns. The fact that many Hispanics and Asians are foreign-born probably helps explain why there was no general decline in the segregation of Hispanics and Asians from non-Hispanic whites in the 1990s, as the foreign-born are more segregated than the native-born (Iceland and Lake 2004). Moreover, immigrants are often bifurcated in their SES attainment. Hispanic immigrants have, on average, lower levels of education than other immigrants while Asian immigrants have, on average, relatively high levels of education (Larsen

2004). This suggests that if the immigration of low SES Hispanics to the United States were to continue, this would tend to raise levels of Hispanic–white segregation, at least in the short run. Likewise, the continued immigration of relatively high SES Asians suggests that immigration may not have as strong an effect on Asian–white segregation. In short, how immigrants and their children fare in both education and the labor market in the coming years is likely to play a very important role in determining future patterns of residential segregation among Asians and Hispanics in the United States.

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