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RECONSIDERING RACE, CLASS, AND RESIDENTIAL SEGREGATION IN AMERICAN CITIES[1]

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Abstract: Scholars have often discounted social class as a substantial contributor to residential segregation by race, in part as a result of using the dissimilarity index, which is likely to show high levels of uneven group distribution regardless of socioeconomic status (SES), and in part as a result of using limited categories of SES. This study expands on prior research by examining residential segregation between black-alone and white-alone households in 36 metropolitan statis-tical areas (MSAs) with 2000 decennial census data, using both spatial unevenness (dissimilarity) and two types of *experiential* indicators (exposure indices), measuring SES across income levels and accounting for the presence of other races. Findings show that black households with higher incomes live in neighborhoods with greater exposure and lower isolation than do black households with lower incomes. Additionally, while the dissimilarity of black households decreases with income, unevenness is not as strongly connected to income as are the experiential measures. While race remains a primary determinant of residential segregation, results indicate substantial class differences.

[Key words: residential segregation, housing, spatial assimilation, race, class.]

INTRODUCTION

Among the explanations for persistently high levels of black-white residential segregation in the United States are housing market discrimination, personal preferences for more integrated or homogenous neighborhood composition, and differences in socioeconomic status (Clark, 1988; Massey and Denton, 1993; Charles, 2003). On initial consideration, the influence of socioeconomic status on black/white residential patterns seems

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intuitive; the former have lower average educational attainment and income than the latter, and housing affordability affects neighborhood residence (O'Hare, 1992; DeNavas-Walt et al., 2003; Galster and Cutsinger, 2007). The spatial ecology tradition in sociology has long suggested a connection between class and residential distribution across urban space (Burgess, 1923; Park, 1926). However, although economic inequality has risen in recent decades, economic differences in the residential segregation literature have received relatively less examination compared with differences due to race and ethnicity (Jargowsky, 1996). The present study asks two questions. First, to what extent does the relatively lower average ability of black households to afford residences in more affluent neighborhoods contribute to segregation? Second, to what extent do increases in black household income translate into decreases in residential segregation?

Drawing and expanding on recent studies of social class and segregation (Massey and Fischer, 1999; St. John and Clymer, 2000; Iceland et al., 2005; Clark, 2007; Timberlake and Iceland, 2007), this paper re-evaluates the role of social class as an explanation of residential segregation among black-alone and white-alone households (inclusive of Hispanics—see methods) in a sample of 36 metropolitan statistical areas (MSAs) in the U.S. We examine the extent to which black households of different income levels remain segregated from white households using data from the 2000 decennial census. This study improves on prior research by exploring the class differences in residential segregation between blacks and whites with an expanded measure of SES that includes more (and higher) levels of income than previously considered.[3] Additionally, we measure both spatial unevenness (dissimilarity) and experiential conditions (exposure), analyzing the way that blacks' residential patterns expose them to varying concentrations of whites and blacks, overall and of the same income level, both with and without the presence of other races.

THEORETICAL BACKGROUND

In recent decades, researchers have considered several contrasting perspectives in examining the relationship between class and the residential segregation of racial groups. The earliest of these perspectives—with origins stemming from the Chicago School's conceptions of societal change among new immigrant groups—reflected two opposing views of the ability of minority groups to attain status, one emphasizing the ability of class gains to translate into geographic mobility, and the other emphasizing the influence of culture, through discriminatory practices, to stifle such gains. The *spatial assimilation* model suggests that groups tend to acquire greater spatial (residential) mobility as they gain socioeconomic status. Members of lower-status racial groups who become more economically established can purchase greater social mobility by migrating into areas that contain more whites as well as better services (Massey and Mullan, 1984; Massey and Denton, 1985; Alba and Logan, 1993; Iceland et al., 2005). Conversely, the *place stratification* model considers spatial patterns to be resistant to economic mobility, with hierarchically stratified neighborhoods allowing more privileged groups to defend both social and physical

[3]Table 3 provides descriptive statistics on the income categories by race. Only one past study (Iceland et al., 2005) examines both dissimilarity and interaction with 2000 census data, employing only four levels of income (we use seven) and not accounting for the presence of other races.

space from the disadvantaged. This rigidity of spatial distribution is especially prevalent with race, which confers implicit status beyond the scope of socioeconomic status (SES), and thus the socioeconomic gains of racial minorities do not readily translate into residential integration (Massey and Denton, 1988; Alba and Logan, 1993; Darden and Kamel, 2000a, 2000b; Charles, 2003; Iceland and Wilkes, 2006).

These founding perspectives have also been enhanced and supplemented by recent theoretical innovations. Spatial assimilation theory, for example, has been given additional nuance by the idea of *segmented assimilation* (Portes and Rumbaut, 1990; Portes and Zhou, 1993), which recognizes that mobility can occur in multifaceted pathways, including the acculturation of mainstream middle-class values, the gravitation toward "underclass" status, and the acquiring of socioeconomic gains while maintaining ethnic identity and community ties (Wright and Ellis, 2000; Chung and Brown, 2007; Brown and Chung, 2008). Furthermore, two additional theories offer direct competition to the traditional dichotomy of stratification versus assimilation: resurgent ethnicity and market-led pluralism.

Resurgent ethnicity (Chung and Brown, 2007) suggests that, instead of immigrant and native minority groups gravitating toward geographic integration as their socioeconomic status improves (and either being more or less able to do so depending on the relative forces of stratification or assimilation), groups also experience an in-group attraction that maintains segregation, or even resegregation as group members migrate, through voluntary preferences for some degree of ethnic cohesion (Logan et al., 2002; Chung and Brown, 2007; Brown and Chung, 2008). Further evidence of this inclination is illustrated by Zelinsky and Lee's (1998, p. 281) *heterolocalism*, in which racial/ethnic groups achieve "communities without propinquity," maintaining a distinct cultural identity and resisting assimilation in the traditional sense, even after achieving spatial parity (Wright and Ellis, 2000).

Whereas resurgent ethnicity focuses on the preferences of group members, explaining ethnically cohesive residential choice as a cultural influence that overcomes class-driven assimilation, *market-led pluralism* (Chung and Brown, 2007; Brown and Chung, 2008) emphasizes class and the socioeconomic dynamics of the housing market through "market makers." The interactions of housing developers, lenders, real estate agents and brokers, consumers, and municipalities, all of which now operate in a market with increasingly fluid and pervasive information than in past decades, shape residential patterns such that "racial/ethnic minority residences are spread throughout the urban area in a manner that mirrors its spatial growth, and their clusters or concentrations overlap with those of other groups" (Chung and Brown, 2007, p. 316).

The issue of how much relative influence class (i.e., affordability, market dynamics) asserts versus culture (i.e., discrimination, preferences) on the persistent patterns of African American residential segregation patterns has been contentiously debated. Many scholars—in firm support of the rigidity suggested by the place stratification model—have rejected the idea of a substantial class link between race and segregation, insisting that race is the most important predictor of residential outcomes, and that blacks and whites of higher socioeconomic status are just as segregated as those of lower SES (Farley, 1977, 2005; Hwang et al., 1985; Denton and Massey, 1988; Galster, 1988; Farley et al., 1994; Yinger, 1995; Massey and Fischer, 1999; Charles, 2000; Darden and Kamel, 2000a; 2000b). This perspective was most notably stated by Massey and Denton's (1993, p. 88) *American Apartheid*, which examined African American segregation levels by income in

30 metropolitan areas and found that "the residential segregation of African Americans cannot be attributed in any meaningful way to the socioeconomic disadvantages they experience." Subsequent studies seemed to confirm this conclusion. Zubrinsky and Bobo (1996, p. 339), finding substantially overlapping mortgage and rental costs across racial groups, stated that "we reject the hypothesis that residential segregation is the result of objective differences in socioeconomic status that leave blacks and Latinos unable to afford desirable housing." Charles (2001, p. 279)[4] seemed to confirm this finding in an evaluation of 1990 Public Use Microdata Sample Area (PUMA) decennial census data for Los Angeles, noting that black-white segregation was more than five times what it would be if based solely on SES. The conclusion was equally definitive "on the relationship between racial residential segregation and socioeconomic status. Simply put, there is no relationship between the two for black Americans." These studies provided compelling evidence that race was the paramount determinant of residential outcomes and that class was of minimal importance.

Indeed, when comparing median home values, reliance on public services, and average neighborhood SES level, blacks move to suburban areas that have larger proportionate black populations and that are substantially worse-off compared with Hispanics, and much worse-off compared with Asians (Phelan and Schneider, 1996). Among white, black, and mixed-race Hispanics, black and mixed-race Hispanics experience residential segregation similarly to African Americans (Massey and Denton, 1989; Alba et al., 2000a). Furthermore, Caribbean blacks are more segregated from whites than their non-black ethnic peers, even though they share identical ethnic backgrounds and socioeconomic characteristics (Denton and Massey, 1989), and data from 1990 and 2000 indicate that blacks, especially those who are foreign born, are much more segregated from whites than are Asians and Hispanics (Iceland and Scopilliti, 2008). White/black-headed households (i.e., mixed-race couples) are more likely to live in neighborhoods with fewer whites than white-headed households (Wright et al., 2011), and black homeowners are more likely to live in poor and black-concentrated neighborhoods than black renters. No other group experiences this counterintuitive relationship between class and renter/owner status (Alba et al., 2000b; Charles, 2006; Logan et al., 1996). Finally, middle-class blacks experienced a decrease in segregation over the period from 1970 to 2000, yet lived in poorer neighborhoods, as characterized by more boarded-up homes, more female-headed households, and fewer college graduates than did middle-class whites (Adelman, 2004).

Nonetheless, some researchers have offered a degree of dissension by focusing on racial socioeconomic differences and emphasizing class over culture through a focus on preferences (i.e., resurgent ethnicity) and socioeconomic status (i.e., market-led pluralism). A long-running debate between Clark (1986; 1988; 1989) and Galster (1988, 1989) began with the former's assertion that racial segregation might be influenced more by economic differences than had been previously considered, citing in particular the work of Pascal (1967). Galster's reply, and subsequent exchanges of rejoinders and rebuttals, focused on the difficulty of interpreting the substantiality versus triviality of SES differences in segregation. Both Clark (1988) and Ellen (2000) also gave credence to a socioeconomic mechanism with the "proxy" hypothesis, suggesting that due to preferences for living

[4]Same author as Zubrinsky.

near like-class members and extant race-based class differences, race may act as a proxy for class in neighborhood residential selection.[5] The ability of increased affordability to translate into residential gains was also bolstered by Brown and Sharma's (2010) "growth begets change" finding; metropolitan areas with increasing populations and more recently built housing experience greater gains in racial/ethnic integration. However, despite these dissensions, and the increasing diversity of interdisciplinary attention given to the topic of residential segregation (Dawkins et al., 2007), the scholarly literature tends to favor overt housing discrimination and white hostility as primary explanations of race-based residential segregation, and generally discounts explanations based on either socioeconomic status or individual preference (Fossett, 2006a, 2006b; Clark, 2007).

SPATIAL UNEVENNESS—EXAMINING SEGREGATION WITH THE DISSIMILARITY INDEX (D)

Of the four measures typically used in sociological research to measure aspects of unevenness in population characteristics (i.e., the dissimilarity index, the Gini coefficient, the Atkinson index, and the entropy index), the dissimilarity index is the most common (Fischer, 2003). It indicates the evenness of the distribution between two groups, and is computed by the formula:

$$D = .5 * (\Sigma_i \mid (b_i / B) - (w_i / W) \mid),$$

where b_i and w_i are the number of blacks and whites who live in neighborhood i, and B and W are the number of blacks and whites who live in that MSA. Ranging from complete integration (i.e., 0) to complete segregation (i.e., 1), the dissimilarity index measures the proportion of a group's population that would have to change residence so that each neighborhood's group proportion equals the proportion of that group within the overall metropolitan population.

The minimization and occasional dismissal of social class as a contributing determinant of racial residential segregation has largely been the result of using D to assess segregation across socioeconomic levels, which is likely, by the way the measure is constructed, to show high levels of uneven distribution of blacks and whites regardless of SES (St. John and Clymer, 2000). Studies of black/white segregation by class using D are based on the logic that if class were responsible for black/white segregation, within-class segregation between blacks and whites should be minimal. Alternatively, blacks at higher classes should be less segregated from whites in general than are those at the lower classes. Such patterns would indicate that higher classes have achieved greater assimilation. However, this kind of pattern is not observed when using D to measure segregation (Massey and Denton, 1993; Farley, 2005; Iceland and Wilkes, 2006).

St. John and Clymer (2000) present a simulation model of a hypothetical MSA demonstrating that due to the small number of blacks at high income levels, even if such blacks live in neighborhoods with more whites than do lower-class blacks, a measure like D will still show unevenness due to the necessary proportion of all-white or nearly all-white neighborhoods that remain. This rigidity of evenness tends to mask any class differences

[5]Both Bobo and Zubrinsky (1996) and Charles (2006) refute this idea.

and causes the appearance of lower- and higher-SES black households being identically segregated from white households. As an example, Farley (2005) used 2000 decennial U.S. Census data to study black-white residential segregation in St. Louis and revealed that dissimilarity between blacks and whites of similar income groups ranged from .712 to .754, without any systematic pattern across the 13 categories (i.e., from < $10,000 to +$100,000 in increments of $5,000). Although the dissimilarity index between blacks at each income level and whites of all incomes showed only a modest class-segregation relationship, from .800 at the lowest income group to .705 at the highest, the decrease was slight and the author concluded that income makes little contribution to segregation, and even titled the article "Race, Not Class …" to accentuate the point.

Despite the limitation of rigidity, Clark and Ware (1997) still found a modest SES relationship with segregation using the dissimilarity index with education and income, calculating D for regions of Southern California between whites and blacks, whites and Hispanics, and whites and Asians. Declines in dissimilarity coincided with increases in education and income for all three minority groups, and although the decrease was modest for blacks, the inverse relationship was significant in both 1980 and 1990 Census data, as was the change over the course of the decade. Similar evidence of greater spatial unevenness is revealed by the 2000 Census (Adelman, 2004; Clark and Blue, 2004; Iceland et al., 2005; Iceland and Wilkes, 2006).

Additionally, a number of analyses have found that higher SES blacks live in neighborhoods with a greater proportion of whites, and a lower proportion of blacks, than do those of lower-SES blacks (Erbe, 1975; Villemez, 1980; Massey and Denton, 1985; Gross and Massey, 1991; Alba and Logan, 1993; Logan et al., 1996; Clark and Ware, 1997; Alba et al., 2000a, 2000b; St. John and Clymer, 2000; Fischer, 2003; Bayer et al., 2005; Clark and Blue, 2004; Iceland et al., 2005). These studies have employed exposure indices, which measure what we refer to as the *experiential conditions* of neighborhood residents, in addition to (or in substitution of) the dissimilarity index's measure of spatial unevenness.

EXPERIENTIAL CONDITIONS—EXAMINING SEGREGATION WITH EXPOSURE INDICES (P*)

The importance of understanding segregation from the standpoint of residential experiences stems at least partly from the potential effect of differential association on social attainment. The social capital that people acquire and use to build status and material success may be strongly influenced by the associations they have the opportunity to form and maintain (Coleman, 1988). Wilson's (1987, 1996) research on the geographic concentration of poverty and its unique contribution to disadvantage illustrates the importance of neighborhood characteristics and residential experiences in shaping opportunities, attitudes, and skills.

Unlike dissimilarity, exposure indices do not indicate the extent to which populations are evenly distributed throughout an area. Instead, they measure the extent to which residents with certain characteristics, such as race and SES, live in neighborhoods with certain average qualities, such as racial proportions. These measures are experiential because they indicate the average social experiences of residents. In this way, exposure indices provide a descriptive representation of *locational attainment*, a term used to describe analyses that posit individual characteristics as determinants of neighborhood properties (Alba and Logan, 1991, 1992, 1993; Logan et al., 1996).

Two types of exposure indices are commonly used to measure segregation: isolation (${}_xP_x$) and interaction (${}_xP_y$). Interaction indices were originally promoted by Bell (1954), Lieberson (1980), and Lieberson and Carter (1982), and the isolation index was introduced by Lieberson (1981). These two indices sum to 1.0 when there are only two groups (e.g., blacks and whites). Lower values of interaction and higher values of isolation point to higher levels of residential segregation. The interaction index, ranging from 0 to 1, is the average proportion of Y in the neighborhoods inhabited by the members of group X. For blacks and whites, this would be:

$${}_xP_y = \Sigma_i\, (b_i / B) * (w_i / t_i),$$

where b_i and w_i are the number of blacks and whites who live in neighborhood (i.e., census tract) i, B is the number of blacks who live in the MSA, and t_i is the total population of the neighborhood (i.e., census tract). Interaction would be interpreted as the average proportion white in the neighborhoods where the black residents live, so that an interaction index value of .30, for example, would mean that blacks in the MSA, on average, live in neighborhoods that are 30 percent white.

The isolation index, varying from 0 to 1, with 1 indicating the highest level of isolation, is the proportion of X in the neighborhoods inhabited by the average member of group X. For blacks, this would be:

$${}_xP_x = \Sigma_i = [(b_i / B) * (b_i / t_i)],$$

where b_i is the number of blacks who live in the neighborhood (i.e., census tract) i, B is the number of blacks who live in the MSA, and t_i is the total population of the neighborhood (i.e., census tract). Isolation therefore measures the probability that a black individual will come into contact with another black individual, and in this way captures the extent that a group may be isolated or "exposed only to one another" (Massey and Denton, 1988, p. 288). Isolation is interpreted as the average proportion black in neighborhoods where black residents live, so that an isolation index value of .50, for example, means that blacks in the MSA, on average, live in neighborhoods that are 50 percent black. Reardon and Sullivan (2004) review four spatial indices—P*, D, H, and R—and conclude that the spatial interaction/isolation index P* is conceptually and mathematically better than the others.

Studies using P* have found varied results, but have generally been more likely than studies using D to observe relationships between class and residential segregation (Massey and Fischer, 1999; St. John and Clymer, 2000; Iceland et al., 2005). Additionally, locational attainment models, which similarly measure experiential conditions, allow for prediction of the neighborhood racial composition by household characteristics, such as education and income. Applied to the Chicago, Cleveland, and Detroit MSAs in the 1990 Census, cities that Massey and Denton (1993) identified as the most racially segregated in the nation, the proportion of black households' neighborhoods that were white was positively and significantly predicted by higher levels of education, higher income, living in suburban areas as opposed to central urban areas, and home ownership (Alba et al., 2000a).

Massey and Fischer (1999) used 1990 Census data to compare dissimilarity and exposure across income levels for blacks, Hispanics, and Asians. The exposure index reflected the average proportion non-Hispanic white in the neighborhoods of the average minority member of four income groups: \$0–14,999, \$15,000–\$34,999, \$35,000–49,999, and \$50,000+. As in the studies cited earlier in this paper, D remained unchanged across income groups. However, P* (i.e., interaction with all non-Hispanic whites) increased with income. Overall, the proportionate increases were roughly the same for blacks as for Hispanics and Asians, but the latter two groups started at higher levels. Blacks' exposure to whites rose from .361 in the lowest income category to .505 in the highest income category, meaning that black households with incomes less than \$15,000 lived on average in neighborhoods that were 36 percent white, while black households with incomes over \$50,000 lived on average in neighborhoods that were 50.5 percent white (and the two in-between categories rose proportionately).

St. John and Clymer (2000) used interaction and isolation indices to measure black-white segregation at different levels of education, both for blacks with whites at the same level of education and blacks (at each of four education levels) with *all* whites. Using data for MSAs with the largest black populations from the 1990 Census, the authors found that blacks at higher levels of education tended to live in neighborhoods with greater proportions of whites, and likewise were less isolated among other blacks than were their lower-education counterparts.

Additionally, a recent and innovative use of exposure took advantage of the 1992–1994 Los Angeles Survey of Urban Inequality (LASUI), analyzing linear regression models with neighborhood proximity to non-Hispanic whites (percentage white in the respondent's neighborhood) as a dependent measure, and five levels of income and four levels of assets (i.e., wealth) as predictors (Charles, 2006). For black respondents, the upper three levels of income (\$40,000–59,000, \$60,000–89,000, \$90,000+) were each significantly more exposed to non-Hispanic whites than was the lowest income group (less than \$20,000), and respondents with advanced degrees were more exposed than was the education reference group (less than high school). However, wealth made no difference for black respondents, and the effect size was revealed to be quite modest ($r^2 = .10$), including significant terms for home ownership and household size.

With the 2000 census, both dissimilarity and isolation indices indicate that higher SES blacks live in more integrated neighborhoods than lower-SES blacks, although the differences are small. Higher-SES blacks may be more integrated with whites, but are not necessarily living in the same neighborhoods with whites of the same SES level. The strong race effect may overshadow the modest class effect (Iceland et al., 2005). Following on this suggestion of a muted class effect, Clark (2007) used dissimilarity and exposure indices to examine both decennial 2000 Census and Current Population Survey data, concluding that blacks with substantially higher income, wealth, and education have become significantly more prevalent in suburbs, and that income matters in black residential choices. Furthermore, the 2000 census reveals that persons of mixed race, who are growing as a proportion of the population, have higher average incomes than do single-race individuals, and "have translated those incomes into greater levels of integration" (Clark and Maas, 2009, p. 590). Finally, comparing racial and ethnic segregation across the period 1970–2000, both dissimilarity and isolation measures reveal that while blacks are more segregated than either Asians or Latinos, their residential inequality has declined more rapidly for Blacks (Timberlake and Iceland, 2007).

SUMMARY AND HYPOTHESES

Overall, recent scholarship on the residential segregation of African Americans has shown that: (1) socioeconomic class affects both spatial unevenness and experiential conditions (isolation and interaction) to at least a modest degree; (2) the exposure measures appear to indicate a more definitive relationship between SES and segregation than does dissimilarity; and (3) studies employing the most recent (2000) census have varied in their use of different segregation and SES measures. Table 1 provides a review of all published findings that use either the 1990 and/or 2000 Census *and* present dissimilarity and/or exposure measures to assess the relationship between SES and race-based residential segregation. Note that only two of the studies using the 1990 Census directly applied both dissimilarity and exposure to SES by income group (Massey and Fischer, 1999; Darden and Kamel, 2000a) as did only *one* using the 2000 Census (Iceland et al., 2005). That study uses four levels of income (as well as education and occupation) and reports isolation of blacks from whites while extracting the proportions of other races. We expand on this design by employing seven levels of income, reporting exposure with both isolation and interaction indices, and measuring interaction with and without the presence of other races. These differences will be explained below (see the section on Data and Methods).

We expect to find social class differences in black segregation from whites in the 2000 Census data when we use the exposure measures, and we expect that the differences will be more apparent than when using the index of dissimilarity. We predict that dissimilarity between blacks and whites will decrease as blacks' household income increases, and that this effect will be stronger than in past studies. We also propose that as black household income increases, isolation will decrease, and interaction will increase. In other words, higher-SES black households will live in neighborhoods that on average have a greater proportion of whites, and a smaller proportion of blacks, than will lower-SES black households. The experiential (exposure) measures should show a greater proportionate change with SES than will dissimilarity, and (due to a wider range of income levels) the magnitude of the SES-segregation relationship should be somewhat greater than in Iceland et al. (2005). Thus, our hypotheses can be itemized as follows:

1. Spatial unevenness, or dissimilarity (D) of blacks with all whites, will decrease with rising income.

Experiential conditions, measured though exposure (P*), will change with income such that:

2. Isolation ($_xP_x$) of blacks with all blacks, and with blacks of the same SES level, will decrease with rising income.

3. Interaction (E, or $_xP_y$) of blacks with all whites, and to whites of the same SES level, will increase with rising income.

4. Changes in P* across income levels will be of greater magnitude than will changes in D.

5. Both the changes in D and P* across income levels will be of greater magnitude than in those found by Iceland et al. (2005).

Table 1. Summary of Recent Studies Examining Socioeconomic Class and Residential Segregation

Study	Census years analyzed	Geographic range	Segregation measures	SES measures
Clark and Ware, 1997 *Urban Affairs Review*	1970, 1980, 1990	Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties	P* (black/white exposure)	Education (5 groups) Income (7 groups)
Massey and Fischer, 1999 *Social Science Research*	1990	MSAs with at least 5,000 minority population (207 MSAs)	D and P* (isolation from all non-Hispanic whites)	Income (4 groups)
Darden and Kamel, 2000a *Journal of Urban Affairs*	1990	Detroit PMSA	D and P* (black isolation from whites of same SES group)	Education (4 groups) Occupation (4 groups) Income (4 groups)
St. John and Clymer, 2000 *Social Science Quarterly*	1990	MSAs with at least 40,000 black population (102 MSAs)	D and P* (black isolation and interaction with all whites, and whites of same SES group)	Education (4 groups)
Adelman, 2004 *City and Community*	1970, 1980, 1990	50 largest MSAs	D	Income (2 groups, based on "middle class" definition)
Bayer et al., 2004 *Journal of Urban Economics*	1990	Alameda, Contra Costa, Marin, San Mateo, San Francisco, and Santa Clara counties	P* (black household proportion regressed on SES characteristics)	Education (4 groups) Income (6 groups)
Clark and Blue, 2004 *Urban Affairs Review*	2000	Los Angeles, San Francisco, Miami, Chicago, and New York MSAs.	D and P* (only D reported for black/white segregation by SES group)	Education (5 groups) Income (7 groups)
Iceland et al., 2005 *Social Science Research*	1990, 2000	All MSAs (331 MSAs)	D and P* (black isolation from whites, all and of same SES group)	Education (4 groups) Occupation (4 groups) Income (4 groups)
Farley, 2005 *Sociological Focus*	2000	St. Louis MSA	D	Income (13 groups)

Charles, 2006 (book) *Russell Sage Foundation*	1992–1994 Los Angeles Survey of Urban Inequality	Los Angeles, CA	Proximity to non-Hispanic whites (dependent measure in OLS regression)	Income (5 groups) Assets (4 groups) Education (5 groups)
Iceland and Wilkes, 2006 *Social Problems*	1990, 2000	All MSAs (331 MSAs)	D	Education (4 groups) Occupation (4 groups) Income (4 groups)
Clark, 2007 *Urban Affairs Review*	2000	MSAs with at least 1 million population (28 MSAs)	D and P* (not shown in direct conjunction with SES measures)	City/suburban residence
Timberlake and Iceland 2007 *City and Community*	1970, 1980, 2000	All MSAs (331 MSAs)	D and P* (not shown in direct conjunction with SES measures)	Black /white income ratio at MSA level
Spivak et al., 2011 *Urban Geography*	2000	All MSAs with at least 200,000 black population (36 MSAs)	D and P* (black isolation and interaction with all whites, and with whites of same SES group)	Income (7 groups)

DATA AND METHODS

Using the 2000 Decennial Census, we calculated indices of dissimilarity, isolation, and interaction for black households by socioeconomic status for the 36 metropolitan statistical areas (MSAs) and primary metropolitan statistical areas (PMSA) with black-alone populations of 200,000 or more.[6] While previous censuses required respondents to choose one category of race, the 2000 Census began allowing multiple race selection, creating both race-alone and race-alone-and-in-combination categories. The black-alone population is used rather than black-alone-and-in-combination because the primary independent variable, household income, was readily available by race-alone for head-of-household in the census data files obtained. Past research has indicated segregation scores are similar when using black-alone and black-alone-and-in-combination (Iceland et al., 2002). Note in Table 2 that the black-alone populations are very close to those of the alone-and-in-combination population, usually within one or two percent. Also, the proportion of black households is slightly but consistently higher, and the proportion of white households slightly but consistently lower, than the corresponding proportions of the black-alone and white-alone population, reflecting slightly smaller average household size for whites than for blacks.

Additionally, we utilize black-alone and white-alone categories that are inclusive of Hispanics, as is the case with Clark and Blue (2004), Clark (2007), Farley (2005), and St. John and Clymer (2000). In the 2000 Census, Hispanics comprised 7.9 percent of all whites and 2.0 percent of all African Americans. While these proportions are not exceptionally large, they are substantial enough to consider the possible consequences of using non-Hispanic race categories versus Hispanic-inclusive categories, especially since no prior study, regardless of the operational definition used, has specifically addressed this distinction.

First, we note that tract composition in metropolitan areas involves daily interaction between residents who are often strangers and may not be able to easily detect each others' ethnicities. They can, however, visually categorize their neighbors by race, and thus decisions about neighborhood mobility (i.e., whether to move into or out of a neighborhood) based on the racial labeling of strangers may be more salient than whether those strangers identify themselves as Hispanic.

Also, we propose that using Hispanic-inclusive categories increases the relevance of class differences, because economic disparity is more severe among Hispanic whites than non-Hispanic whites (see Iceland et al., 2002). One in 13 whites are Hispanic compared to only 1 in 50 blacks. Thus, removing Hispanics likely accentuates the economic advantage of whites, making the finding of an income-segregation relationship even more notable in a Hispanic-inclusive approach.

Conversely, we recognize that Hispanics (as well as Asians) are traditionally more likely than blacks to translate their economic gains into residential mobility. Charles (2006) draws attention to this difference for Los Angeles in particular, and Bobo et al. (2000) make a similar point; Hispanics and Asians gain greater spatial assimilation with

[6]While these data are nearly a decade old, extensive precedent exists for using previous decennial data: both Alba and Logan (1993) and Logan et al. (1996) used 1980 census data, while St. John and Clymer (2000), Charles (2001), Adelman (2004), and Bayer et al. (2005) used 1990 census data.

economic mobility than do African Americans. Thus, some expectation may be justified that Hispanic inclusion in the effects of class on black/white segregation would not—as we suggest—be more subdued than if using non-Hispanics. While the answer to this question is beyond the scope of the present study, we hope that adopting this discussion will elicit increasing attention to the methodological effects of racial and ethnic categorization in future research.

In the 2000 Census, 19 PMSAs and 17 MSAs fit the criterion for having 200,000 or more black-alone population, making the total $N = 36$. To ensure comparability between smaller and larger metropolitan areas, no consolidated metropolitan statistical areas (CMSAs) were included. For consolidated areas, we used the corresponding PMSAs. For simplicity, hereafter all PMSAs and MSAs will be referred to simply as metropolitan areas. The population in the 36 metropolitan areas comprised 35 percent of the total U.S. population, and 56 percent of the total black population in the United States.

The present analytical design makes an improvement on both Massey and Fischer's (1999) and Iceland et al.'s (2005) categories of income. The former used a figure slightly below the poverty level for a family of four ($18,000) for the limit of the bottom category ($14,000), $50,000 and above as the highest level, and then split the center in half for a total of four categories. The latter used a similar four-level operation, with bottom categories of $17,499 or less for 1990 and $19,999 or less for 2000, and top categories of $50,000 or more for 1990 and $75,000 or more for 2000. In order to capture subtle differences in socioeconomic status over as wide a range as possible, we maximized the availability of household income categories in the 2000 Census by generating levels that are as equidistant as possible, but also representative of African Americans' income distribution range. Table 3 shows the income category distribution of black, white, and all (including other races) U.S. households in 2000, as well as the corresponding percentages for all households in the present study's 36 metropolitan areas.

The seven categories represented in Table 3 allow for comparisons of neighborhood segregation between households across greater income differences than previously used. The first five categories are equidistant and split the national distribution of households into proportions between 10 and 20 percent. The sixth category, between $75,000 and $99,999, has a wider range because the 2000 Census data expand the income categories after $75,000 to intervals of $25,000. The seventh category, $100,000 or greater, comprises about the same proportion of all households as the earlier categories, but includes only five to seven percent of black households, allowing the present study to reflect the extent to which even these few affluent black households share the burden of residential segregation.

To illustrate the calculations of SES-specific segregation indices, consider the example of black middle-income ($45,000–$59,900) households. The equations in Table 4 illustrate the calculation of the segregation indices with the following variables represented:

1. bmh_i and wmh_i are the number of black middle-income households and white middle-income households in neighborhood *i* (i.e., census tract).
2. *BMH* is the number of black middle-income households in a metropolitan area.
3. b_i and w_i are the number of black and white households in neighborhood *I*.
4. *B* and *W* are the number of black and white households in a metropolitan area.

Table 2. Population Characteristics of 36 Metropolitan Areas with 200,000 or More Black Population

MSAs and PMSAs with black pop. 200,000 or more	MSA/ PMSA	Population						Census tracts	Households		
		Total	Black alone	% black alone	% black and combined	% white alone	% white and combined		Total	% black alone	% white alone
Total U.S.–national		281421906	34361740	12.2	13.2	75.1	77.3	65443	105539122	11.4	79.3
Overall sample (*N* = 36)		102057046	19190252	18.8	20.1	65.8	68.1	23167	37678070	18.0	70.4
New York, NY	PMSA	9314235	2277210	24.4	26.8	48.8	51.9	2516	3485449	23.2	55.2
Chicago, IL	PMSA	8272768	1551203	18.8	19.7	65.8	67.9	1877	2972373	17.6	70.8
Washington, DC	PMSA	4923153	1276095	25.9	27.5	60.0	62.4	1037	1849708	25.6	63.8
Atlanta, GA	MSA	4112198	1184059	28.8	29.9	63.0	64.4	660	1505564	27.5	66.4
Philadelphia, PA	PMSA	5100931	1017762	20.0	21.3	72.2	73.5	1330	1915187	19.1	74.7
Detroit, MI	PMSA	4441551	1013226	22.8	23.9	71.2	73.2	1280	1696335	21.2	74.1
Los Angeles, CA	PMSA	9519338	916907	9.6	10.8	48.6	53.0	2055	3136279	11.0	55.9
Houston, TX	PMSA	4177646	728824	17.4	18.3	61.0	63.7	780	1463983	17.8	65.3
Baltimore, MD	PMSA	2552994	694779	27.2	28.6	67.4	68.7	625	974359	25.9	69.8
Dallas, TX	PMSA	3519176	525748	14.9	15.8	67.2	69.5	701	1283156	15.1	71.7
New Orleans, LA	MSA	1337726	499959	37.4	38.5	57.3	58.8	395	505778	33.5	62.1
Memphis, TN	MSA	1135614	490705	43.2	44.2	52.9	53.9	274	424498	39.8	57.2
Norfolk-VA Beach, VA	MSA	1569541	483032	30.8	32.4	62.5	64.3	371	577794	29.3	65.8
St. Louis, MO	MSA	2603607	473691	18.2	19.1	78.3	79.4	527	1013341	17.0	80.2
Miami, FL	PMSA	2253362	452333	20.1	21.9	69.7	72.6	350	777378	17.8	73.3
Newark, NJ	PMSA	2032989	448639	22.1	23.7	65.9	68.0	480	729043	21.2	69.1
Cleveland, OH	PMSA	2250871	413009	18.3	19.5	77.0	78.5	718	892824	17.6	78.7
Ft. Lauderdale, FL	PMSA	1623018	329749	20.3	22.5	70.6	72.7	279	654787	15.8	77.2
Charlotte, NC	MSA	1499293	307102	20.5	21.4	73.6	74.9	301	575510	19.2	76.6

Oakland, CA	PMSA	2392557	299886	12.5	14.2	55.3	59.7	589	868209	13.0	62.2
Richmond-Petersburg, VA	MSA	996512	299268	30.0	31.2	64.9	66.2	253	387736	27.9	68.1
Birmingham, AL	MSA	921106	275939	30.0	30.7	67.3	68.2	197	361107	28.1	69.7
Raleigh-Durham-Chapel Hill, NC	MSA	1187941	268025	22.6	23.6	69.4	70.8	211	461335	21.4	72.6
Greensboro, NC	MSA	1251509	251882	20.1	21.1	74.4	75.6	263	499012	19.1	77.1
Riverside-San Bernardino, CA	PMSA	3254821	247517	7.6	9.0	61.9	66.2	587	1035620	7.5	69.8
Tampa-St. Pb.-Clwr, FL	MSA	2395997	242307	10.1	11.1	82.9	84.8	547	1009792	8.4	86.6
Jacksonville, FL	MSA	1100491	237336	21.6	22.6	72.6	74.2	197	425809	19.8	75.8
Milwaukee, WI	PMSA	1500741	233112	15.5	16.7	77.2	78.7	418	588230	13.5	81.5
Boston, MA	PMSA	3405985	232388	6.8	8.2	82.5	84.3	701	1323435	6.1	85.5
Nassau-Suffolk, NY	PMSA	2753913	230740	8.4	9.5	82.0	83.7	597	917338	6.9	86.2
Orlando, FL	MSA	1644561	225415	13.7	15.3	75.1	77.3	328	625346	11.7	79.3
Kansas City, KS	MSA	1776062	222865	12.5	13.8	80.8	82.7	502	694971	12.1	82.9
Indianapolis, IN	MSA	1607486	222703	13.9	14.9	82.0	83.3	340	630031	13.3	83.6
Cincinnati, OH	PMSA	1646395	213103	12.9	13.8	84.1	85.2	405	645329	13.0	84.5
Columbus, OH	MSA	1540157	202833	13.2	14.7	81.3	82.8	372	610895	12.7	82.9
Jackson, MS	MSA	440801	200901	45.6	46.3	52.6	53.3	104	160529	41.0	57.7

Table 3. National and Sample Metropolitan Areas Percentage Distribution of Households by Income, 2000[a]

Income category	Income range, $	National: All households in U.S. Overall (all races)	National: All households in U.S. Blacks (alone)	National: All households in U.S. Whites (alone)	Sample: All households in 36 MSAs Overall (all races)	Sample: All households in 36 MSAs Blacks (alone)	Sample: All households in 36 MSAs Whites (alone)
Pct. poor households	≤14,999	15.8	27.7	13.8	14.4	24.6	11.2
Pct. low households	15,000–29,999	19.3	23.0	18.6	17.0	21.8	15.4
Pct. low-middle households	30,000–44,999	17.9	17.5	18.0	16.7	17.9	16.2
Pct. middle households	45,000–59,999	14.0	11.6	14.4	13.6	12.4	13.9
Pct. high-middle households	60,000–74,999	10.4	7.6	10.9	10.9	8.5	11.6
Pct. high households	75,000–99,999	10.2	6.6	10.9	11.5	7.7	12.8
Pct. affluent households	≥100,000	12.3	5.8	13.4	15.9	7.0	18.8
		100	100	100	100	100	100

[a]Household income data by race are only available for “alone” categories.

Table 4. Equations Used for Dissimilarity, Isolation, and Interaction

Equation 1	Dissimilarity	$D = .5 * (\Sigma_i \mid (bmh_i / BMH) - (w_i / W) \mid)$
Equation 2	Exposure–isolation Black of income category to all black (taking other races into account)	${}_xP_x = \Sigma_i = [(bmh_i / BMH) * (b_i / t_i)]$
Equation 3	Exposure–isolation Black of income category to all black (*not* taking other races into account)	${}_xP_x = \Sigma_i = [(bmh_i / BMH) * (b_i / tbw_i)]$
Equation 4	Exposure–interaction Black of income category to all white (taking other races into account)	${}_xP_y = \Sigma_i [(bmh_i / BMH) * (w_i / t_i)]$
Equation 5	Exposure–interaction Black of income category to all white (*not* taking other races into account)	${}_xP_y = \Sigma_i [(bmh_i / BMH) * (w_i / tbw_i)]$
Equation 6	Exposure–isolation Black to black of same income category (not taking other races into account)	${}_xP_x = \Sigma_i = [(bmh_i / BMH) * (bmh_i / tbw_i)]$
Equation 7	Exposure–interaction [same income] Black to white of same income category (not taking other races into account)	${}_xP_y = \Sigma_i [(bmh_i / BMH) * (wmh_i / tbw_i)]$

5. t_i is the total number of households in neighborhood *i*, and tbw_i is the total number of black households plus the number of white households (but not other races) in neighborhood *i*.

The dissimilarity index, D, measuring segregation between black middle-income households and all white households, is represented by Equation 1. The exposure index for isolation, (${}_xP_x$), measuring black middle-income households' isolation with all black households, taking into account the presence of households with other race classifications, is represented by Equation 2, while the same exposure index for isolation, not taking into account the presence of households with other race classifications, is represented by Equation 3.

The exposure index for interaction (${}_xP_y$), measuring black middle-income households' exposure to all white households, taking into account the presence of households with other race classifications, is represented by Equation 4. The same exposure index for interaction, not taking into account the presence of households with other race classifications, is represented by Equation 5.

Taking other races into account allows us to see what proportion of the neighborhood population is actually black or white. For example, if 400 black households lived in a neighborhood with 400 whites and no one else (i.e., 50% of population is white), this composition would be very different than if 400 black households lived in a neighborhood with 400 whites and 800 people of other races (i.e., 25% of population is white). If black households with certain income levels lived with more people of other races (i.e., not black or white) than did black households of other income levels, then failing to take other races into account might present the illusion that both classes live in neighborhoods with, for example, similar exposure to whites, when in reality they may not. We also calculate black isolation and interaction with whites of the same income level, not taking into account the presence of households with other race classifications. For the middle-income category, these versions of $_xP_x$ and $_xP_y$ are represented by Equations 6 and 7, respectively. Examining exposure indices that compare the segregation of black households from white households both overall and within-income categories allows us to see not only how much “whiter” the neighborhoods of upper-income black households are in comparison to those of lower income, but also how much of that “whiteness” is of the same income class.

In addition to the SES-specific indices, we also report the overall segregation indices for each metropolitan area. These indices apply the same formulas as above, with all of the income-specific variables converted to the equivalent non-income category–specific variable, such that $BMH = B$, $bmh_i = b_i$, and $wmh_i = w_i$.

Finally, as the overall and SES specific indices are presented for each of the 36 metropolitan areas, we calculate the weighted means for each index in order to provide an indication of the SES-segregation relationship across all 36 metropolitan areas combined. St. John and Clymer (2000) similarly report means for each index across their sample of metropolitan areas, but these are not weighted, allowing less-populated areas to affect the mean as much as substantially more populated areas. To adjust for the unequal populations in the metropolitan areas, we weight each segregation index (D, $_xP_x$, and $_xP_y$) by the proportion of the combined black population of the 36 metropolitan areas represented by that area. For indices representing a particular income group, each metropolitan area’s contribution to the average is weighted by the relevant proportion of the total black population in that income group. For example, each metropolitan area’s isolation index for low-middle income blacks is weighted by multiplying by the total low-middle income black population in that area, divided by the total low-middle income black population in all the areas combined. The weighted indices are then summed to obtain the weighted average.[7] As the largest metropolitan area in our study (i.e., New York City) has more than 10 times the black population of the smallest (i.e., Jackson, MS), our weighted means represent an important methodological improvement.

RESULTS

This section discusses the results of dissimilarity and exposure measures in five sections, using Tables 5 through 8. First, we present dissimilarity measures across income levels, then exposure measures in three permutations: isolation and interaction of different SES blacks to all whites and to all blacks (accounting for the presence of other races); isolation and interaction of different SES blacks to all whites and to all blacks (not accounting for the presence of other races); and finally isolation and interaction of different SES blacks to same-SES blacks and whites. Lastly, we summarize the findings and review whether our hypotheses were supported.

[7]We calculated a previous set of weighted averages based on each metropolitan area’s overall population size, using proportion of total census tracts instead of race-specific population. Each weighted average using this earlier method was within three points of its value under the present method.

Dissimilarity: Spatial Unevenness Across SES

Table 5 shows the dissimilarity indices (D, Eq. 1) for black households at each of the seven income categories and 36 metropolitan areas with the largest black populations, as well as the overall D for each MSA, and the weighted means. Values of D greater than 0.60 are considered high, according to Massey and Denton (1993). Of the 36 metropolitan areas, only six are lower than 0.60, and only three of these are less than 0.50. Most of the metropolitan areas have D between 0.60 and 0.80, and the overall weighted mean across all areas and income categories is 0.67. The weighted dissimilarity means for poor, low, low-middle, middle, high-middle, high, and affluent black households are 0.76, 0.71, 0.68, 0.67, 0.66, 0.66, 0.64, respectively. The results show that while dissimilarity is high even among higher-income black households, segregation according to this measure does decline modestly as income rises. The drop in dissimilarity is .12, or 16 percent, between the lowest and the highest income categories.

Exposure: SES-Black to All White and Black, Counting Other Races

In Table 6, we present the isolation (${}_{x}P_{x,}$, Eq. 2) and interaction (${}_{x}P_{y}$, Eq. 4) indices overall and by income level, taking into account black and white households of other income levels and households with other race classifications. This table shows the average proportions of households that are black and white in the neighborhoods where blacks of each income category live. For example, across all 36 metropolitan areas, the weighted mean level of isolation for poor ($15,000 or less) black households is 0.64, meaning that these households live in neighborhoods that are on average 64 percent black. Conversely, the weighted mean of interaction for poor black households is only 0.26, meaning that these households live in neighborhoods that are on average 26 percent white, and thus the "average poor black household" lives in a neighborhood that is, on average, 64 percent black, 26 percent white, and 10 percent comprised of combined or other races.

Residential isolation among blacks appears to decrease, while interaction with whites increases, as black households' incomes increase. While the average neighborhood of poor black households is 64 percent black and 26 percent white, affluent black households ($100,0000 or more) live in neighborhoods that average 49 percent black and 42 percent white. In the five income categories between poor and affluent (low, low-middle, middle, high-middle, high), the mean isolation index steadily decreases (0.60, 0.57, 0.55, 0.53, 0.51) while the mean interaction index steadily increases (0.31, 0.34, 0.36, 0.37, 0.39), without contrary incremental rises or drops between the income levels, confirming our hypotheses that higher income for black households reduces their isolation with other blacks and increases their interaction with whites. Particularly, the largest changes in both isolation and interaction are between the poor ($14,999 or less) and low income categories ($15,000 to $29,999).

Figure 1 illustrates graphically the distribution of weighted means for dissimilarity, isolation, and interaction, as reported in Tables 5 and 6. Dissimilarity decreases by 16 percent (i.e., [.76 – .64]/.76) across the seven income levels, the largest drop occurring between the first two income categories, but remains relatively high even for affluent black households (0.64). Black households' isolation decreases by 23 percent (i.e., [.64 – .49]/.64) as their income increases across the seven income categories, while their interaction with whites

Table 5. Dissimilarity Measuring Black/White Residential Segregation by Income Level, 2000

MSA/PMSA	Dissimilarity (D)[a]							
	Overall (all incomes)	Poor ≤$14.9K	Low $15K-$29.9K	Low-middle $30K-$44.9K	Middle $45K-$59.9K	High-middle $60K-$74.9K	High $75K-$99K	Affluent ≥$100K
Weighted mean[b] (*N* = 36)	0.67	0.76	0.71	0.68	0.67	0.66	0.66	0.64
New York, NY	0.76	0.81	0.79	0.77	0.75	0.76	0.75	0.73
Chicago, IL	0.78	0.85	0.81	0.78	0.78	0.77	0.77	0.75
Washington, DC	0.63	0.73	0.68	0.66	0.63	0.62	0.61	0.60
Atlanta, GA	0.63	0.72	0.68	0.65	0.63	0.61	0.60	0.55
Philadelphia, PA	0.72	0.81	0.76	0.72	0.70	0.71	0.68	0.64
Detroit, MI	0.85	0.89	0.87	0.85	0.84	0.83	0.83	0.79
Los Angeles, CA	0.59	0.70	0.64	0.60	0.59	0.60	0.58	0.55
Houston, TX	0.63	0.73	0.67	0.64	0.63	0.61	0.61	0.58
Baltimore, MD	0.67	0.78	0.72	0.69	0.67	0.66	0.64	0.61
Dallas, TX	0.57	0.70	0.64	0.58	0.57	0.57	0.56	0.53
New Orleans, LA	0.59	0.60	0.56	0.55	0.55	0.55	0.57	0.57
Memphis, TN	0.66	0.75	0.69	0.67	0.66	0.63	0.62	0.61
Norfolk-VA Beach, VA	0.47	0.63	0.52	0.48	0.44	0.45	0.46	0.48
St. Louis, MO	0.73	0.79	0.76	0.73	0.71	0.73	0.71	0.71
Miami, FL	0.71	0.75	0.74	0.71	0.71	0.73	0.73	0.69
Newark, NJ	0.77	0.85	0.83	0.79	0.78	0.77	0.76	0.71
Cleveland, OH	0.78	0.84	0.80	0.78	0.77	0.78	0.76	0.79
Ft. Lauderdale, FL	0.58	0.70	0.63	0.60	0.58	0.58	0.57	0.61
Charlotte, NC	0.52	0.61	0.57	0.53	0.53	0.53	0.53	0.55
Oakland, CA	0.60	0.75	0.70	0.64	0.62	0.60	0.58	0.51

Richmond-Petersburg, VA	0.56	0.69	0.63	0.57	0.53	0.53	0.49	0.46
Birmingham, AL	0.70	0.78	0.74	0.86	0.67	0.66	0.68	0.64
Raleigh-Dur.-Chap. Hill, NC	0.43	0.55	0.47	0.45	0.46	0.45	0.42	0.43
Greensboro, NC	0.56	0.66	0.60	0.57	0.54	0.54	0.51	0.56
Riverside-San Bern., CA	0.44	0.57	0.53	0.52	0.51	0.53	0.53	0.57
Tampa-St.Pete.-Clearwa., FL	0.62	0.74	0.68	0.63	0.63	0.67	0.67	0.71
Jacksonville, FL	0.54	0.66	0.58	0.54	0.54	0.52	0.55	0.52
Milwaukee, WI	0.82	0.86	0.85	0.83	0.83	0.80	0.82	0.79
Boston, MA	0.66	0.76	0.73	0.70	0.69	0.68	0.71	0.65
Nassau-Suffolk, NY	0.73	0.79	0.77	0.76	0.74	0.75	0.76	0.74
Orlando, FL	0.53	0.65	0.59	0.53	0.54	0.54	0.55	0.55
Kansas City, KS	0.69	0.79	0.74	0.72	0.70	0.66	0.66	0.66
Indianapolis, IN	0.71	0.77	0.74	0.74	0.72	0.71	0.72	0.69
Cincinnati, OH	0.75	0.80	0.76	0.75	0.76	0.77	0.73	0.70
Columbus, OH	0.63	0.73	0.69	0.66	0.64	0.61	0.63	0.62
Jackson, MS	0.61	0.68	0.62	0.58	0.56	0.58	0.56	0.57

[a][Eq. 1] b of income group in tract, B of income group in MSA, w overall in tract, W overall in MSA.
[b]Weighted by proportion of the combined black population of the 36 metropolitan areas represented by each MSA.

Table 6. Exposure Indices for Black Households' Isolation with All Blacks, and Interaction with all Whites, Counting Other Races

MSA/PMSA	Overall (all incomes)		Isolation[a]							Interaction[b]						
	Iso	Int	Poor ≤$14.9K	Low $15K–$29.9K	Low-middle $30K–44.9K	Middle $45K–$59.9K	High-middle $60K–$74.9K	High $75K–$99K	Affluent ≥$100K	Poor ≤$14.9K	Low $15K–$29.9K	Low-middle $30K–44.9K	Middle $45K–$59.9K	High-middle $60K-$74.9K	High $75K–$99K	Affluent ≥ $100K
Weighted mean[c] ($N = 36$)	1	0	0.64	0.60	0.57	0.55	0.53	0.51	0.49	0.26	0.31	0.34	0.36	0.37	0.39	0.42
New York, NY	1	0	0.62	0.62	0.61	0.61	0.61	0.61	0.59	0.18	0.19	0.20	0.21	0.22	0.23	0.26
Chicago, IL	1	0	0.78	0.73	0.69	0.68	0.66	0.65	0.61	0.16	0.20	0.24	0.25	0.28	0.29	0.33
Washington, DC	1	0	0.68	0.63	0.60	0.57	0.56	0.54	0.51	0.25	0.28	0.31	0.34	0.36	0.37	0.40
Atlanta, GA	1	0	0.68	0.63	0.59	0.58	0.56	0.56	0.53	0.28	0.31	0.35	0.36	0.38	0.39	0.42
Philadelphia, PA	1	0	0.70	0.66	0.61	0.59	0.58	0.52	0.47	0.22	0.27	0.32	0.34	0.36	0.42	0.47
Detroit, MI	1	0	0.82	0.81	0.78	0.75	0.73	0.72	0.66	0.14	0.16	0.19	0.21	0.23	0.25	0.30
Los Angeles, CA	0	0	0.42	0.40	0.39	0.40	0.40	0.39	0.39	0.26	0.29	0.32	0.33	0.33	0.36	0.37
Houston, TX	0	0	0.58	0.50	0.47	0.46	0.43	0.40	0.38	0.28	0.34	0.36	0.38	0.41	0.43	0.47
Baltimore, MD	1	0	0.73	0.69	0.64	0.60	0.57	0.54	0.48	0.23	0.28	0.32	0.36	0.39	0.42	0.47
Dallas, TX	0	0	0.53	0.46	0.41	0.39	0.37	0.35	0.30	0.35	0.41	0.46	0.48	0.51	0.53	0.59
New Orleans, LA	1	0	0.72	0.68	0.65	0.64	0.62	0.61	0.61	0.24	0.28	0.30	0.32	0.34	0.34	0.35
Memphis, TN	1	0	0.77	0.72	0.69	0.67	0.63	0.60	0.60	0.21	0.25	0.28	0.31	0.34	0.37	0.37
Norfolk-VA Beach, VA	1	0	0.62	0.52	0.48	0.45	0.43	0.40	0.41	0.34	0.43	0.47	0.50	0.52	0.55	0.54
St. Louis, MO	1	0	0.69	0.64	0.62	0.58	0.58	0.54	0.51	0.28	0.33	0.36	0.40	0.39	0.43	0.46
Miami, FL	1	0	0.61	0.58	0.55	0.53	0.54	0.54	0.50	0.30	0.33	0.36	0.38	0.37	0.38	0.42
Newark, NJ	1	0	0.72	0.70	0.67	0.66	0.64	0.60	0.52	0.17	0.19	0.23	0.25	0.27	0.30	0.39
Cleveland, OH	1	0	0.77	0.72	0.68	0.66	0.64	0.61	0.58	0.20	0.25	0.28	0.31	0.33	0.36	0.38

Ft. Lauderdale, FL	0	0	0.56	0.49	0.45	0.42	0.41	0.37	0.33	0.36	0.43	0.47	0.49	0.51	0.54	0.58
Charlotte, NC	0	1	0.50	0.47	0.42	0.40	0.37	0.35	0.34	0.45	0.48	0.52	0.55	0.57	0.59	0.61
Oakland, CA	0	0	0.46	0.41	0.36	0.34	0.33	0.30	0.26	0.29	0.33	0.38	0.39	0.42	0.45	0.50
Richmond-Ptrsbrg., VA	1	0	0.66	0.59	0.54	0.50	0.48	0.42	0.38	0.31	0.37	0.42	0.46	0.48	0.54	0.59
Birmingham, AL	1	0	0.76	0.70	0.79	0.62	0.58	0.57	0.57	0.23	0.28	0.26	0.36	0.41	0.42	0.42
Ral.-Dur.-Ch.Hill, NC	0	1	0.47	0.41	0.40	0.39	0.37	0.32	0.30	0.47	0.52	0.54	0.55	0.58	0.62	0.64
Greensboro, NC	0	0	0.55	0.49	0.45	0.43	0.41	0.39	0.38	0.40	0.47	0.50	0.53	0.55	0.57	0.58
Rivrsde.-San Bern., CA	0	1	0.16	0.15	0.15	0.14	0.14	0.13	0.12	0.55	0.57	0.57	0.59	0.60	0.61	0.63
Tampa-St.Pb.-Clwr., FL	0	1	0.48	0.42	0.37	0.33	0.31	0.28	0.27	0.46	0.52	0.56	0.60	0.62	0.66	0.66
Jacksonville, FL	1	0	0.60	0.51	0.47	0.45	0.44	0.43	0.42	0.38	0.46	0.49	0.50	0.51	0.53	0.54
Milwaukee, WI	1	0	0.69	0.67	0.64	0.62	0.58	0.56	0.53	0.25	0.28	0.32	0.34	0.38	0.40	0.43
Boston, MA	0	0	0.42	0.41	0.38	0.37	0.34	0.35	0.30	0.40	0.41	0.46	0.48	0.51	0.51	0.58
Nassau-Suffolk, NY	0	0	0.40	0.41	0.40	0.40	0.41	0.41	0.39	0.46	0.46	0.46	0.47	0.46	0.46	0.48
Orlando, FL	0	1	0.43	0.38	0.34	0.30	0.28	0.27	0.25	0.49	0.53	0.56	0.59	0.61	0.63	0.66
Kansas City, KS	1	0	0.62	0.57	0.53	0.49	0.44	0.39	0.38	0.32	0.38	0.42	0.46	0.52	0.56	0.58
Indianapolis, IN	1	0	0.58	0.54	0.51	0.50	0.47	0.45	0.41	0.38	0.42	0.44	0.46	0.49	0.51	0.56
Cincinnati, OH	1	0	0.65	0.57	0.53	0.50	0.50	0.46	0.44	0.32	0.40	0.44	0.47	0.47	0.51	0.53
Columbus, OH	0	0	0.53	0.48	0.46	0.43	0.36	0.34	0.33	0.41	0.46	0.49	0.52	0.59	0.61	0.62
Jackson, MS	1	0	0.74	0.68	0.65	0.62	0.62	0.63	0.60	0.25	0.31	0.34	0.37	0.37	0.35	0.39

[a][Eq. 2] b of income group in tract, B = all black in MSA, b = all black in tract, t = all in tract
[b][Eq. 4] b of income group in tract, B of income group in MSA, w = all white in tract, t = all in tract
[c]Weighted by proportion of the combined black population of the 36 metropolitan areas represented by each MSA.

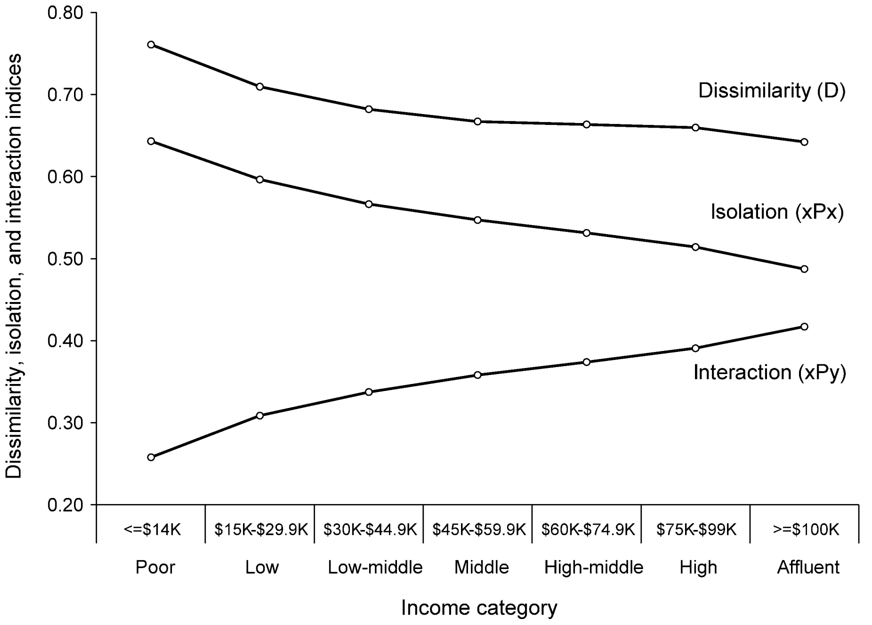

Fig. 1. Dissimilarity, isolation, and interaction indices for 36 MSAs and PMSAs with black populations of 200,000 or more, taking into account the presence of households with other race classifications.

increases 61 percent (i.e., [.26 – .42]/.26, so that poor black households live in neighborhoods that on average have twice the concentration of blacks as whites, while affluent blacks tend to live in neighborhoods that are nearly evenly split between black and white households.

In the calculations for isolation and interaction examined thus far, combined and other-race households comprised 10 percent of the average proportion of households in the neighborhoods of poor and low income blacks, 11 percent in the neighborhoods of low-middle, middle, and high-middle blacks, and 10 percent in the neighborhoods of high and affluent blacks. We now consider exposure measures when neighborhood race distribution is considered *only* with black and white residents.

Exposure: SES-Black to All White and Black, Not Counting Other Races

If the isolation and interaction indices for black households at each income level are considered without the inclusion of households with combined or other race classifications, we can observe more directly the relative proportions of only black and white households in the average neighborhoods where blacks at different income levels live. These indices for isolation ($_{x}P_{x}$, Eq. 3) and interaction ($_{x}P_{y}$, Eq. 5), reported in Table 7, are defined the same way as the previous isolation and interaction indices, but with the modification that all of the neighborhood (i.e., census tracts) race compositions are treated as though households with combined or other race classifications were absent. Considering only black and white households in the weighted mean indices for the 36 metropolitan areas, poor black households live in neighborhoods that have, on average, twice as many blacks as whites, while affluent black households live in neighborhoods that have, on average, equal numbers of blacks and whites. The five income categories between poor and affluent reflect a steady incremental drop in isolation and rise in interaction between the highest and lowest category, with no off-trend data points.

Exposure: Black to Same-SES White and Black, Not Counting Other Races

Finally, we consider the relative isolation and interaction of black households at different income levels with blacks and whites of the same income level, taking into account the presence of combined and other race households. Table 8 reports these versions of isolation ($_{x}P_{x,}$, Eq. 6) and interaction ($_{x}P_{y}$, Eq. 7), which shows the average proportions of neighborhoods comprised of households with the same income level. For example, the isolation index of 0.25 and interaction index of 0.06 for poor black households mean that these households live in neighborhoods that are comprised, on average, of four times more poor blacks as poor whites. For affluent black households, the isolation index of 0.07 and interaction index of 0.10 indicate that these households live in neighborhoods that are on average comprised of about 40 percent more affluent whites than affluent blacks.

The results suggest that as black households' incomes increase, they experience somewhat less exposure to blacks of the same income level, and more exposure to white households of the same income level. However, the trend across income categories is not as smooth or definitive as when measuring isolation and interaction to all blacks and whites. The weighted means across the 36 metropolitan areas show that isolation with other blacks of the same income level decreases dramatically when going from the poor to low income categories (0.25 to 0.16), then decreases modestly between the low, low-middle, and middle categories (0.12 to 0.8, and 0.06), and then remains stable at six to seven percent across high-middle, high, and affluent. Black households' interaction with white households of the same income remains relatively stable, and even decreases slightly, before finally increasing for affluent black households (0.06, 0.07, 0.07, 0.06, 0.05, 0.06, 0.10, respectively). Poor black households experience about the same amount of residential integration with same-income whites as do black households of low, low-middle, middle, high-middle, and high incomes. Only affluent black households live in neighborhoods that are on average comprised of a substantially greater proportion of same-income whites, and while this increase is about 30 percent, the level of integration with same-income whites is still modest, as affluent black households live in neighborhoods in which, on average, one in ten households is both white and affluent.

SUMMARY OF RESULTS AND HYPOTHESES OUTCOMES

Overall, the results indicate that the level of residential segregation experienced by black households, as measured by dissimilarity, isolation with other blacks, and interaction with whites, decreases as income level increases. Table 9 presents the results of each permutation of the segregation measures and itemizes the outcomes of each hypothesis tested.

The first hypothesis, that dissimilarity (D) would decrease as income rises, was modestly confirmed, with D decreasing 16 percent between the lowest and highest income groups. Our second and third hypotheses, that with rising income black/black isolation

Table 7. Exposure Indices for Black Households' Isolation with all Blacks, and Interaction with all Whites, Not Counting Other Races

MSA/PMSA	Overall All incomes Iso	Overall All incomes Int	Isolation[a] Poor ≤$14.9K	Isolation[a] Low $15K–$29.9K	Isolation[a] Low-middle $30K–44.9K	Isolation[a] Middle $45K–$59.9K	Isolation[a] High-middle $60K–$74.9K	Isolation[a] High $75K–$99K	Isolation[a] Affluent ≥ $100K	Interaction[b] Poor ≤ $14.9K	Interaction[b] Low $15K–$29.9K	Interaction[b] Low-middle $30K–44.9K	Interaction[b] Middle $45K–$59.9K	Interaction[b] High-middle $60K–$74.9K	Interaction[b] High $75K–$99K	Interaction[b] Affluent ≥ $100K
Weighted mean[c] ($N = 36$)	0.6	0.4	0.70	0.65	0.62	0.59	0.58	0.56	0.53	0.30	0.35	0.39	0.41	0.42	0.44	0.47
New York, NY	0.7	0.3	0.75	0.75	0.73	0.72	0.71	0.70	0.68	0.25	0.25	0.27	0.28	0.29	0.30	0.32
Chicago, IL	0.7	0.3	0.81	0.76	0.72	0.71	0.69	0.67	0.63	0.19	0.24	0.28	0.29	0.31	0.33	0.37
Washington, DC	0.6	0.4	0.72	0.68	0.65	0.61	0.60	0.58	0.55	0.28	0.32	0.35	0.39	0.40	0.42	0.45
Atlanta, GA	0.6	0.4	0.70	0.66	0.62	0.61	0.59	0.59	0.55	0.30	0.34	0.38	0.39	0.41	0.41	0.45
Philadelphia, PA	0.7	0.3	0.75	0.70	0.65	0.63	0.61	0.55	0.50	0.25	0.30	0.35	0.37	0.39	0.45	0.50
Detroit, MI	0.8	0.2	0.85	0.83	0.80	0.77	0.75	0.74	0.68	0.15	0.17	0.20	0.23	0.25	0.26	0.32
Los Angeles, CA	0.5	0.5	0.59	0.55	0.52	0.52	0.51	0.49	0.48	0.41	0.45	0.48	0.48	0.49	0.51	0.52
Houston, TX	0.6	0.4	0.65	0.57	0.54	0.53	0.50	0.47	0.43	0.35	0.43	0.46	0.47	0.50	0.53	0.57
Baltimore, MD	0.7	0.3	0.75	0.71	0.66	0.62	0.59	0.56	0.50	0.25	0.29	0.34	0.38	0.41	0.44	0.50
Dallas, TX	0.5	0.5	0.58	0.51	0.46	0.44	0.41	0.39	0.33	0.42	0.49	0.54	0.56	0.59	0.61	0.67
New Orleans, LA	0.8	0.3	0.74	0.70	0.68	0.67	0.64	0.64	0.64	0.26	0.30	0.32	0.33	0.36	0.36	0.36
Memphis, TN	0.7	0.3	0.78	0.74	0.71	0.68	0.65	0.62	0.61	0.22	0.26	0.29	0.32	0.35	0.38	0.39
Norfolk-VA Beach, VA	0.5	0.5	0.64	0.54	0.50	0.47	0.45	0.42	0.42	0.36	0.46	0.50	0.53	0.55	0.58	0.58
St. Louis, MO	0.6	0.4	0.70	0.66	0.63	0.59	0.59	0.55	0.52	0.30	0.34	0.37	0.41	0.41	0.45	0.48
Miami, FL	0.6	0.4	0.66	0.63	0.59	0.58	0.59	0.58	0.54	0.34	0.37	0.41	0.42	0.41	0.42	0.46
Newark, NJ	0.7	0.3	0.80	0.77	0.73	0.72	0.69	0.66	0.57	0.20	0.23	0.27	0.28	0.31	0.34	0.43
Cleveland, OH	0.7	0.3	0.78	0.74	0.70	0.67	0.65	0.63	0.60	0.22	0.26	0.30	0.33	0.35	0.37	0.40
Ft. Lauderdale, FL	0.5	0.5	0.61	0.53	0.48	0.46	0.44	0.41	0.36	0.39	0.47	0.52	0.54	0.56	0.59	0.64

Charlotte, NC	0.5	0.5	0.53	0.49	0.44	0.42	0.40	0.38	0.36	0.47	0.51	0.56	0.58	0.60	0.62	0.64
Oakland, CA	0.5	0.5	0.60	0.54	0.48	0.45	0.43	0.39	0.33	0.40	0.46	0.52	0.55	0.57	0.61	0.67
Richmond-Ptrbg., VA	0.6	0.4	0.68	0.61	0.56	0.52	0.50	0.44	0.39	0.32	0.39	0.44	0.48	0.50	0.56	0.61
Birmingham, AL	0.7	0.3	0.77	0.71	0.80	0.63	0.59	0.58	0.57	0.23	0.29	0.27	0.37	0.41	0.42	0.43
Ral.-Dur.-Chap.H., NC	0.4	0.6	0.50	0.44	0.43	0.42	0.39	0.34	0.32	0.50	0.56	0.57	0.58	0.61	0.66	0.68
Greensboro, NC	0.5	0.5	0.57	0.51	0.47	0.45	0.42	0.41	0.39	0.43	0.49	0.53	0.55	0.58	0.59	0.61
Rivrsde.-San Bern., CA	0.2	0.8	0.23	0.22	0.21	0.20	0.19	0.19	0.17	0.77	0.78	0.79	0.80	0.81	0.81	0.83
Tamp.-St.Pb.-Clwr., FL	0.4	0.6	0.50	0.44	0.39	0.35	0.33	0.30	0.29	0.50	0.56	0.61	0.65	0.67	0.70	0.71
Jacksonville, FL	0.5	0.5	0.61	0.52	0.48	0.47	0.45	0.44	0.43	0.39	0.48	0.52	0.53	0.55	0.56	0.57
Milwaukee, WI	0.7	0.3	0.73	0.70	0.66	0.64	0.60	0.59	0.55	0.27	0.30	0.34	0.36	0.40	0.41	0.45
Boston, MA	0.5	0.5	0.52	0.50	0.46	0.45	0.41	0.42	0.36	0.48	0.50	0.54	0.55	0.59	0.58	0.64
Nassau-Suffolk, NY	0.5	0.5	0.47	0.48	0.47	0.46	0.47	0.47	0.45	0.53	0.52	0.53	0.54	0.53	0.53	0.55
Orlando, FL	0.4	0.6	0.46	0.41	0.38	0.33	0.31	0.30	0.27	0.54	0.59	0.62	0.67	0.69	0.70	0.73
Kansas City, KS	0.6	0.4	0.65	0.60	0.55	0.51	0.45	0.41	0.39	0.35	0.40	0.45	0.49	0.55	0.59	0.61
Indianapolis, IN	0.5	0.5	0.60	0.56	0.53	0.52	0.49	0.47	0.42	0.40	0.44	0.47	0.48	0.51	0.53	0.58
Cincinnati, OH	0.6	0.4	0.66	0.59	0.55	0.52	0.51	0.47	0.45	0.34	0.41	0.45	0.48	0.49	0.53	0.55
Columbus, OH	0.5	0.5	0.56	0.51	0.48	0.45	0.38	0.36	0.35	0.44	0.49	0.52	0.55	0.62	0.64	0.65
Jackson, MS	0.7	0.3	0.74	0.69	0.65	0.63	0.63	0.64	0.60	0.26	0.31	0.35	0.37	0.37	0.36	0.40

[a][Eq. 3] b of income group in tract, B = all black in MSA, b = all black in tract, $t = b + w$ in tract

[b] [Eq. 5] b of income group in tract, B of income group in MSA, w = all white in tract, $t = b + w$ in tract

[c]Weighted by proportion of the combined black population of the 36 metropolitan areas represented by each MSA.

Table 8. Exposure Indices for Black Household'' Isolation with Blacks of the Same Income Category, and Interaction with Whites of the Same Income Category, Not Counting Other Races

MSA/PMSA	Isolation[a]							Interaction[b]						
	Poor ≤$14.9K	Low $15K–$29.9K	Low-middle $30K–44.9K	Middle $45K–$59.9K	High-middle $60K–$74.9K	High $75K–$99K	Affluent ≥ $100K	Poor ≤ $14.9K	Low $15K–$29.9K	Low-middle $30K–44.9K	Middle $45K=$59.9K	High-middle $60K–$74.9K	High $75K–$99K	Affluent ≥ $100K
Weighted mean[c] ($N = 36$)	0.25	0.16	0.12	0.08	0.06	0.06	0.07	0.06	0.07	0.07	0.06	0.05	0.06	0.10
New York, NY	0.27	0.16	0.13	0.10	0.08	0.08	0.08	0.09	0.05	0.04	0.03	0.03	0.03	0.06
Chicago, IL	0.30	0.17	0.14	0.10	0.07	0.07	0.07	0.03	0.04	0.05	0.04	0.04	0.04	0.08
Washington, DC	0.20	0.14	0.14	0.10	0.08	0.09	0.12	0.03	0.04	0.06	0.06	0.05	0.07	0.14
Atlanta, GA	0.22	0.16	0.13	0.10	0.07	0.08	0.07	0.04	0.06	0.07	0.06	0.05	0.06	0.10
Philadelphia, PA	0.27	0.17	0.12	0.08	0.06	0.05	0.04	0.06	0.06	0.06	0.05	0.04	0.06	0.10
Detroit, MI	0.28	0.20	0.14	0.10	0.08	0.07	0.09	0.04	0.04	0.04	0.03	0.03	0.03	0.07
Los Angeles, CA	0.22	0.13	0.10	0.07	0.06	0.05	0.08	0.10	0.10	0.09	0.06	0.05	0.06	0.11
Houston, TX	0.24	0.15	0.11	0.07	0.05	0.05	0.04	0.06	0.09	0.09	0.07	0.06	0.07	0.12
Baltimore, MD	0.27	0.18	0.13	0.09	0.07	0.06	0.05	0.05	0.05	0.06	0.06	0.05	0.07	0.11
Dallas, TX	0.21	0.14	0.09	0.07	0.05	0.04	0.03	0.07	0.10	0.11	0.08	0.07	0.09	0.16
New Orleans, LA	0.33	0.19	0.13	0.08	0.05	0.05	0.04	0.05	0.06	0.06	0.05	0.04	0.04	0.05
Memphis, TN	0.31	0.20	0.14	0.09	0.06	0.06	0.04	0.04	0.05	0.06	0.05	0.04	0.05	0.07
Norfolk-VA Beach, VA	0.25	0.15	0.10	0.07	0.05	0.04	0.03	0.05	0.10	0.11	0.09	0.07	0.08	0.07
St. Louis, MO	0.27	0.18	0.11	0.07	0.05	0.04	0.04	0.06	0.08	0.07	0.06	0.05	0.05	0.08
Miami, FL	0.26	0.16	0.11	0.08	0.06	0.05	0.04	0.10	0.09	0.08	0.06	0.04	0.04	0.06
Newark, NJ	0.28	0.17	0.13	0.10	0.08	0.08	0.08	0.05	0.04	0.04	0.04	0.03	0.04	0.12
Cleveland, OH	0.33	0.20	0.13	0.08	0.06	0.05	0.04	0.06	0.06	0.06	0.05	0.04	0.04	0.07
Ft. Lauderdale, FL	0.18	0.14	0.10	0.07	0.05	0.04	0.03	0.08	0.10	0.10	0.08	0.06	0.07	0.13

Charlotte, NC	0.16	0.14	0.10	0.06	0.04	0.04	0.03	0.07	0.10	0.11	0.09	0.08	0.08	0.11
Oakland, CA	0.20	0.12	0.09	0.06	0.05	0.05	0.05	0.06	0.08	0.09	0.08	0.07	0.09	0.18
Richmond-Petersburg, VA	0.23	0.16	0.11	0.08	0.05	0.04	0.03	0.05	0.08	0.09	0.08	0.06	0.07	0.09
Birmingham, AL	0.31	0.19	0.15	0.07	0.05	0.05	0.03	0.05	0.07	0.05	0.05	0.05	0.04	0.06
Ral.-Dur.-Ch.Hill, NC	0.16	0.12	0.09	0.06	0.05	0.03	0.03	0.08	0.10	0.10	0.09	0.08	0.09	0.14
Greensboro, NC	0.20	0.15	0.10	0.06	0.04	0.03	0.02	0.08	0.10	0.11	0.09	0.06	0.06	0.09
Riverside-San Bernar., CA	0.08	0.06	0.04	0.03	0.03	0.03	0.03	0.16	0.17	0.15	0.12	0.10	0.12	0.16
Jacksonville, FL	0.22	0.14	0.10	0.07	0.04	0.04	0.02	0.07	0.11	0.11	0.09	0.07	0.07	0.07
Milwaukee, WI	0.28	0.20	0.12	0.08	0.05	0.04	0.03	0.06	0.07	0.07	0.06	0.04	0.04	0.07
Boston, MA	0.16	0.12	0.09	0.06	0.04	0.04	0.04	0.10	0.08	0.09	0.07	0.07	0.08	0.14
Nassau-Suffolk, NY	0.08	0.08	0.07	0.06	0.06	0.09	0.11	0.07	0.08	0.08	0.07	0.06	0.08	0.13
Orlando, FL	0.16	0.13	0.08	0.05	0.03	0.02	0.02	0.09	0.13	0.13	0.11	0.08	0.08	0.12
Kansas City, KS	0.23	0.16	0.11	0.07	0.04	0.03	0.03	0.07	0.10	0.09	0.08	0.06	0.07	0.10
Indianapolis, IN	0.19	0.16	0.11	0.07	0.05	0.05	0.04	0.07	0.10	0.10	0.08	0.06	0.06	0.11
Cincinnati, OH	0.31	0.16	0.09	0.06	0.05	0.03	0.03	0.08	0.09	0.09	0.07	0.06	0.06	0.09
Columbus, OH	0.20	0.14	0.10	0.07	0.03	0.03	0.03	0.10	0.12	0.11	0.09	0.07	0.08	0.12
Jackson, MS	0.27	0.18	0.13	0.08	0.06	0.05	0.04	0.04	0.06	0.07	0.06	0.05	0.04	0.07

[a][Eq. 6] *b* of income group in tract, *B* = all black in MSA, *b* = black of income category in tract, *t* = *b* + *w* in tract.
[b][Eq. 7] *b* of income group in tract, *B* of income group in MSA, *w* = white of income category in tract, *t* = *b* + *w* in tract
[c]Weighted by proportion of the combined black population of the 36 metropolitan areas represented by each MSA.

Table 9. Summary of Results and Hypotheses

	Lowest income	Highest income	Percent change
Results			
1. Dissimilarity	0.76	0.64	16% drop
2. Isolation of blacks in income group with all blacks, counting other races	0.64	0.49	23% drop
3. Isolation of blacks in income group with all blacks, not counting other races	0.70	0.53	24% drop
4. Interaction of blacks in income group with all whites, counting other races	0.26	0.42	62% rise
5. Interaction of blacks in income group with all whites, not counting other races	0.30	0.47	57% rise
6. Isolation of blacks with same-income group blacks, counting other races	0.25	0.07	72% drop
7. Interaction of blacks with same-income group whites, counting other races	0.06	0.10	67% rise

Hypotheses	Outcome
1. Dissimilarity will decrease with income	Confirmed
2. Isolation will decrease with income	Confirmed
3. Interaction will increase with income	Confirmed
4. The change in P* will be of greater magnitude than the change in D	Confirmed
5. Changes in D and in P* will be of greater magnitude than those found by Iceland et al., 2005	Partly confirmed

would decrease and black/white interaction increase, were more strongly confirmed. Black/black isolation measures fell 23 percent between the lowest and highest income groups, and this drop was almost identical when considering the residential proportions without the presence of other races. The increase in black/white interaction was more substantial: 61 percent between the lowest and highest income groups when counting other races, and 56 percent when considering only black/white proportions. However, the magnitude of difference between the change in isolation and interaction measures is not as large as the proportionate drops and rises indicate. Because the average neighborhood proportion black is greater than the average proportion white, drops of similar absolute points on the indices will be proportionately larger for interaction than for isolation.[8] The fourth hypothesis, that the changes in exposure measures would be of greater magnitude

[8]Consider the decrease in isolation (counting other races) across the seven income groups from .64 to .49, a 23 percent drop. The corresponding increase in interaction (counting other races) was from .26 to .42, a 61 percent rise, even though the latter index actually rose only one point more (.16) than the former index dropped (.15).

than those of the dissimilarity index, is confirmed to the extent that proportions of change in an unevenness measure such as dissimilarity can be compared to changes in experiential measures such as isolation or interaction. This sort of comparison should be handled with caution; however, we believe that the proportionate difference between the change in isolation and interaction across income (between 23 and 61 percent) exceeds the corresponding change in dissimilarity (16 percent) by a great enough magnitude to confirm that the former is more sensitive to rising SES than the latter.

The last hypothesis, that the SES effect on residential segregation, as measured by isolation and interaction, would be greater than in Iceland et al. 2005, is the most difficult to interpret. Dissimilarity in the previous study was found to drop across income by almost the same proportion as in our study (D = .69 to D = .59, a 14 percent decrease). While the lowest income categories are similar (i.e. $19,000 or less in Iceland's analyses, compared to $14,999 or less in ours), the highest is substantially different ($75,000 or more, compared to our $100,000 or more), so we had expected to find a greater decline in dissimilarity, but this part of the hypotheses is not confirmed. However, the previous study's 14 percent drop in isolation (not counting other races, closest to computation 2 of Results in Table 9) is somewhat less than our finding of 23 percent, confirming not only the current hypothesis, but also lending additional support to the perspective that experiential measures are more sensitive to SES than are measures of spatial unevenness.

DISCUSSION AND CONCLUSION

This study contributes to prior research on the influence of race and class on black-white residential segregation by using both dissimilarity and experiential measures (exposure indices), measuring SES with a greater range and number of income levels, and accounting for the presence of other races. In agreement with previous research that uses exposure measures (Massey and Fischer, 1999; St. John and Clymer, 2000; Iceland et al., 2005), our results confirm that SES is related to black-white residential segregation.

However, the higher level of integration experienced by black households as their income increases is still relatively modest when compared to the substantial level of segregation that is present for even the most affluent black households. Poor black households ($14,999 or less) live, on average, in neighborhoods that are 64 percent black and 26 percent white, and affluent black households ($100,000 or more) live, on average, in neighborhoods that are 49 percent black and 42 percent white. While this difference represents a substantial increase in residential integration from blacks in lower-income categories, affluent blacks still experience greater segregation from whites than do their affluent white counterparts. In our sample, affluent white households ($100,000 or more) live, on average, in neighborhoods that are 6 percent black and 86 percent white. Socioeconomic class is clearly important, but race itself remains a strong determinant of residential segregation patterns.

Thus, we find limited support for several theoretical perspectives on residential segregation. The continuing validity of traditional conceptions of spatial assimilation and place stratification models appears to be confirmed in the extent to which black households gain integration with income, but only limitedly so. Likewise, proponents of resurgent ethnicity and market-led pluralism may argue that the modest but notable influence of income on experiential indicators of segregation (i.e., exposure indices) confirms the influence of choice-driven ethnic cohesion and market dynamics. Indeed, the extent to which African American households achieve limited gains in both spatial and experiential measures of segregation may illustrate the dual influence of class versus culture: in this framework, the pluralistic forces of market actors help African American households enhance their residential choices, while ethnic solidarity leads them to resist predominantly white neighborhoods even at higher income levels.

Most importantly, our results support the contention that measures of experiential conditions, such as the exposure indices, are more revealing of SES-based segregation than is the measure of spatial unevenness (D). Additionally, while the comparison of spatial unevenness (dissimilarity) and experiential measures (isolation and interaction) across income categories is a method that has limitations (e.g., the present analysis does not consider education, or wealth), we argue that the improvements we have made to this approach produce a relevant contribution toward assessing residential returns to human capital. Our use of multiple income categories led to the finding that the small observed increases in experiential measures are steady and progressive at each level. The rise in weighted means for interaction—and decline in isolation—between “Poor” and “Low” income black households is actually slightly greater than between “High” and Affluent,” and each level provides a small improvement.

The use of experiential measures provides a sense of the actual influence of greater income on residential outcome. For example, in Table 9 the isolation index (.70) and interaction index (.30) indicate that poor blacks live in neighborhoods in which there are 2.33 (.70/.30) times as many blacks as whites, while affluent blacks live in neighborhoods that have 1.13 times as many blacks as whites (a much greater change than the 16 percent drop in dissimilarity). While the highest income category (affluent) contains only 5.8 percent of black households nationally (and 7.0 percent of the sample of 36 MSAs with the highest black populations), this proportion has certainly increased since the 1980 and 1990 censuses, and will hopefully continue to account for an increasing proportion of African Americans in the future. Even if we compare categories closer together than the highest and lowest, the differences are still notable (and greater than the improvements in spatial unevenness). For example, the ratio of black to white households drops from 2.33 to 1.77 (.65/.35) going from Poor to Low, a 24 percent drop in the black/white ratio just from the lowest income category (25 percent of black households) to the next lowest (22 percent of black households). While we cannot precisely ascertain the real-life effects of greater residential exposure to whites—and the literature suggests that the neighborhoods of higher-class blacks are not as much “better” as they should be compared to the neighborhoods of lower-class blacks—we argue that *some* level of human capital return is implied through our approach. Affluent black households (seven percent of all black households in our sample) live in neighborhoods that are nearly half white (47 percent), and in which 10 percent are white and affluent, while black households in the “High” category (an additional 7.7 percent of all black households in our sample) are not far behind. Thus, the members of higher-income black households experience more regular interaction with whites—for example, utilizing similar services and attending the same schools—relative to the members of lower-income black households.

Future studies should continue to explore differences in segregation with diverse operationalizations of SES, which may prove challenging for researchers who are used to the methods currently available for utilizing decennial census data. The 2010 census, as well as future decennial censuses, will no longer include the long form, which contains the necessary measures to examine residential segregation across census tracts. The extent to which combined annual data from the American Community Survey (ACS), designated to replace the long form, will be comparable in future years is not yet certain.

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