DISTINGUISHING THE GEOGRAPHIC LEVELS AND SOCIAL DIMENSIONS OF U.S. METROPOLITAN SEGREGATION, 1960–2000*

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In this article, we assess trends in residential segregation in the United States from 1960 to 2000 along several dimensions of race and ethnicity, class, and life cycle and present a method for attributing segregation to nested geographic levels. We measured segregation for metropolitan America using the Theil index, which is additively decomposed into contributions of regional, metropolitan, center city–suburban, place, and tract segregation. This procedure distinguishes whether groups live apart because members cluster in different neighborhoods, communities, metropolitan areas, or regions. Substantively, we found that the segregation of blacks decreased considerably after 1960 largely because neighborhoods became more integrated, but the foreign born became more segregated largely because they concentrated in particular metropolitan areas. Class segregation increased between 1970 and 1990 mainly because the affluent increasingly clustered in specific metropolitan areas and in specific municipalities within metropolitan areas. The unmarried increasingly congregated in center cities. The main purpose of this article is to describe and illustrate this multilevel approach to studying segregation.

In 1996, Massey dramatized a concern shared by many scholars of urban inequality: that Americans are moving into an "age of extremes" in which disparities of wealth and power increasingly produce and are reinforced by spatial separation. With the growth of gated communities for the affluent and the further ghettoization of the poor, the United States is becoming more and more fragmented, he argued. An even wider concern is that across various dimensions of difference, such as racial and ethnic background, class, and life cycle, Americans are withdrawing, willingly or not, into homogeneous and defensive enclaves.[1]

To the discussion of this issue, we add an enriched historical record: we trace changes in residential segregation over four decades along *several social dimensions*, including race, income, and family status, and across *several geographic levels*: region, metropolis, the center city–suburb division, municipality, and tract. Studies of segregation often focus on only one social dimension—race or income groups, for example—and typically on only one geographic level of separation—that between neighborhoods. However, we know that racial, class-based, and other types of separation often overlap in important ways. We

1. On the wider concern, see, for example, Bellah et al.'s (1985) description of "life-style enclaves," the literature on gated communities (e.g., Blakely and Snyder 1997) and ghettoization of the poor (e.g., Jargowsky 1997, 2003).

also know that this separation can occur because people of different races, classes, or ages cluster not only in different neighborhoods within a community but also in different communities, metropolitan areas, or even regions. This article presents all these dimensions and levels simultaneously, creating a comprehensive picture of segregation in the United States.

Scholars and citizens alike care about segregation because the concentration of disadvantage can accentuate problems, such as academic failure and early pregnancy (see, e.g., Sampson, Morenoff, and Gannon-Rowley 2002); because geographic and political barriers can impede regional solutions to common problems (see, e.g., Orfield and Katz 2002); and because—as Massey (1996) and others have suggested—the withdrawal of citizens into separate enclaves challenges the foundation of a democratic society (see, e.g., Putnam 2000). But our understanding of the dynamics of segregation is still limited; distinguishing among the dimensions and levels of segregation can help.

Take the literature on racial segregation: some (e.g., Massey and Denton 1993; Massey and Gross 1991) have stressed the increasing "hypersegregation" of blacks, pointing largely to inner-city neighborhoods; others (e.g., Farley and Frey 1994) have claimed that the segregation of blacks is not so "hyper" and is declining; they have pointed largely to newer, smaller metropolitan areas where neighborhoods are more integrated. Frey (1996) added to the complexity by presenting evidence of increasing racial and ethnic segregation by region: whites leaving the coastal regions for whiter inland regions. To understand what has happened, it would be useful to know, for example, whether whites in the Northeast and Midwest were initially separated from blacks by region and later, after the arrival of blacks in the North, by neighborhood and perhaps even later by the city-suburban border. Generalizing the question, we can ask whether Americans have become more or less segregated by various traits, such as stage in the life cycle and wealth, and at what level of spatial organization the changes occurred. Identifying the locus of segregation carries implications for policy: where is racial segregation or integration occurring? In the twentieth century, segregation seems to have shifted from region to neighborhood to the city-suburb line and, now, perhaps to municipality.

In related literature on urban politics, scholars have long been concerned that the political boundaries between central cities and their suburbs have reinforced class and racial segregation and, moreover, that boundaries among suburbs have done so as well (e.g., Cutler and Glaeser 1997; Dolan 1990; Swanstrom, Dreier, and Mollenkopf 2002), perhaps because such lines coincide with school systems (e.g., Reardon and Yun 2001). Indeed, much of the "urban crisis" literature of the 1970s and 1980s stressed the way in which cities and their suburban regions were divided according to differences in income and along racial lines—white "donuts" around black holes (see, e.g., Hawley and Rock 1974; Jackson 1985; Petersen 1985). The new question is whether that line of separation became increasingly or decreasingly important compared with other bases of segregation. For instance, segregation among _municipalities_, even within suburban rings, may be the emerging basis of separation, overriding the city-suburb line (Alba et al. 1999; Fitzpatrick and Logan 1985; Logan and Schneider 1984; Stahura 1988). Jargowsky (2003), for example, recently found that during the 1990s, pockets of concentrated poverty shrank in major urban centers but emerged in particular suburban communities.

In a third literature, on urban economics, students of "world cities" and "dual cities" (e.g., Castells 1989:216ff; Sassen 1991; Waldinger 1996) have focused attention on intermetropolitan differences and have linked those differences to intrametropolitan ones. A key argument is that economic elites and the low-income workers, typically immigrants, who provide services to them cluster in particular metropolitan areas—in the New Yorks and Miamis, not the Pittsburghs and Detroits—and within the metropolitan areas, each group clusters in distinct neighborhoods. That process should be revealed by trends in the segregation of classes and the foreign born by metropolitan area and by neighborhood.

In addition, looking simultaneously at several social dimensions with the same metric and procedure permits the analyst to consider the relative weight of factors shaping the urban social landscape. In the substantive results presented later, we show that segregation by racial and ethnic origin is much higher than is segregation by economic class, which is, in turn, higher than is segregation by stage in the life cycle. This finding informs us about the hierarchy of criteria that Americans use when they decide where to live. By disaggregating segregation according to level of geography, we found that the segregation of blacks from nonblacks (and non-Hispanic whites from others) decreased substantially over the 40 years, largely because neighborhoods became much more integrated, but that segregation of the foreign born increased greatly, largely because they concentrated in particular metropolitan areas. The segregation of Hispanics, however, changed little. Class segregation increased after 1970, mainly because the affluent were clustered more in both specific metropolitan areas and in specific municipalities within metropolitan areas. Changes in segregation by life cycle were far more modest, but young adults and the unmarried increasingly concentrated in center cities, rather than in suburbs.

Although our findings speak to concerns about trends in racial segregation, urban politics, and sharpening class divisions, our main purpose in this article is to describe and illustrate an approach to the study of segregation. We first introduce a relatively new procedure that allocates changes in residential segregation by level: region, metropolitan area, urban core versus suburban ring, urban place, and census tract.[2] Second, we present preliminary findings on the historical trends in segregation by racial and ethnic ancestry, class, and life cycle disaggregated by geographic level. Third, we close by suggesting further directions for analyzing the components of residential segregation.

DISAGGREGATING SEGREGATION

Disaggregating the Social Dimensions of Segregation

Classical urban studies, notably those in the "factorial ecology" literature, identified three basic axes of residential differentiation that are common to most American cities. Scholars classified tracts simultaneously by the *socioeconomic status* of their residents, by the residents' *family or life-cycle stage*, and by the residents' *race or ethnicity*.[3] (In other societies, the third factor is often different—e.g., religion in Northern Ireland.) In our study, we used this three-dimensional approach because it allowed us also to address class-based segregation and the segregation of the elderly or young families.

Disaggregating the Geographic Levels of Segregation

The lowest level of "neighborhood" we explored is the census tract. We defined the total *national* level of segregation for Americans living in metropolitan areas as the degree to which *tracts* across the country are homes to different types of people—for example, the degree to which the elderly live in different tracts than do the nonelderly—irrespective of region or specific metropolitan area. Thus, the concentration of the elderly in Miami Beach, Florida, and of young adults in Santa Monica, California, both contribute to the national, metropolitan amount of age segregation. We then disaggregated this total segregation into the segregation that occurs because of segregation by region, metropolitan

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2. Massey and his colleagues have analyzed class and racial segregation at the regional, state, metropolitan, and tract levels (see Massey and Fischer 2003; Massey and Hajnal 1995; see also Glaeser and Vigdor 2003). However, his procedure entailed separate calculations of dissimilarity and isolation at each level, not the nested and cumulative technique described in this article.

3. This literature burgeoned a few decades ago but seems to have petered out since. See, for example, Janson (1980), Rees (1972), Schwirian (1974), and White (1987).

area within region, city-suburban division within the metropolitan area, "place" (which is usually the same as municipality),[4] and the residual (the census tracts). To what extent, for example, are the elderly segregated from the nonelderly by living in distinctive regions, metropolitan areas, central cities, particular towns, or distinct neighborhoods? The measure of segregation we describe later, Theil's H, which indexes the evenness of a distribution, allowed us to calculate such partitions. (Although there are precedents for using H, taking advantage of its special properties, this is, to our knowledge, the first application of H for analyzing the multilevel, nested nature of segregation.[5])

Region has been historically and visibly important in contributing to segregation in America. For example, blacks were still concentrated in the South in 1960, albeit less than they were about 1900 (Lieberson 1980). Similarly immigrants originally settled in the Northeast and were still concentrated there in 1960. Southerners were for decades poorer than Americans in other regions, and migration for the purposes of retirement has presumably led the elderly to congregate in the Sunbelt. We can ask what contribution regional differences make compared with other levels of geography and how much that contribution has changed in recent decades. We can pose a similar question for metropolitan areas. Historically, some metropolises (Boston and New York, classically, and more recently, Los Angeles and Miami) have, for example, been gateways for immigrants. Economic specialization leads to somewhat different labor forces, income levels, housing patterns, and age structures from one metropolis to another, even in the same regions (e.g., Berry 1972). The concentration of the high-tech industry in the San Francisco Bay area and the garment and toy industries in Los Angeles sharpen economic and labor force differences within the West, for instance.

The division between city and suburb has been familiar to generations of urban scholars. Most pointedly, races, but also classes and family types, have separated across the borders of central cities. The sociological importance of these lines is evident, for example, in the extent to which official data are gathered according to this distinction. An important question is whether and to what extent the significance of this boundary has waned in recent decades as, for example, inner suburbs age and take on some traits of center cities (e.g., Jargowsky 2003; Orfield and Katz 2002; Stahura 1988). Researchers have increasingly become attuned to the social implications of political divisions among suburbs. Many critical institutions in America are determined by specific municipality laws and regulations—housing and zoning codes, school finances and policies, tax rates, policing, and infrastructure maintenance, to name some. Therefore, many people sort themselves out by municipality (for example, in seeking preferred school systems; James 1989), and others are sorted out by municipality (for instance, priced or discriminated out of some towns; e.g., Alba and Logan 1993), leading to distinctive between-place compositions within the same suburban ring.[6] Finally, the lowest, most finely grained, level of segregation is the one of classic concern, the neighborhood, here represented by variation

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4. Places, as defined by the Census Bureau, refer to concentrations of population that are either legally incorporated—cities, town, villages, or boroughs—or reflect dense settlements that are locally identified by name (census-designated places).

5. Mayer (2001) used H to compare within-metro segregation with total within-state segregation. Reardon and Yun (2001) contrasted between-school district and within-school district segregation. Fischer (2003) used the fact that H can be calculated for the intersection of categories—in her case, racial-ethnic groupings × income groupings—and the results decomposed into main effects and interaction effects. She estimated the relative levels and importance of racial segregation and income segregation over the years. For similar applications, see Harsman and Quigley (1995) and Miller and Quigley (1990). But these analyses were solely at the level of tracts within a sample of metropolitan statistical areas (MSAs), not the nested analysis described here.

6. Some of the works on the distinctiveness of suburbs by municipality are Fitzpatrick and Logan (1985), James (1989), Logan and Alba (1993), Logan and Schneider (1984), Orfield and Katz (2002), Reardon and Yun (2001), and Stahura (1988).

among census tracts within places. (Going yet further down to the block or block-group level would be ideal, but much less data are available at that level, particularly for earlier years.) Because we began with the national differentiation by all census tracts, the segregation that cannot be attributed to region, metropolitan area, city-suburb, or place is the residual attributable to intertract segregation.

The underlying model in studies of segregation typically assumes that families make housing decisions under constraints (such as the ability to pay and discrimination) in a specific housing market, usually defined as a commute-to-work region and measured as a census metropolitan area (see, e.g., Rossi 1956; South and Deane 1993). One conceptual implication of our multilevel approach is to extend and elaborate on this model. The standard analysis assumes that families choose the package of homes, amenities, and costs at the *neighborhood*—operationally, census tract—level. But families also make decisions about metropolitan areas when, for example, immigrants follow chain migration into specific metropolises, retirees choose states on cultural grounds (e.g., Frey 1995, 2002), or professionals participate in national labor markets. (Those who have been involved in academic recruiting can testify to the role that areawide housing costs have on the selectivity of migration by metropolitan area.) Families also make decisions on the basis of the package presented to them by specific political units—schools, taxes, zoning laws, and the like. Resultant segregation, then, occurs at various levels as a result of various choices.[7]

Measures of Segregation.

There are many ways to measure the tendency of people with different traits to cluster together (James and Taeuber 1985; Massey and Denton 1988; Reardon and Firebaugh 2002). Probably the most common is the dissimilarity index, D, which can be interpreted as the smallest proportion of the population of interest, i (e.g., blacks) that would have to move to equalize its distribution across spatial categories with the other group, $\sim i$ (e.g., nonblacks).[8] Another common one is the isolation index, iPi^*, which is the probability that a random member of group i shares an area with other members of group i (see Lieberson 1980 for extensive use of this measure). Because each measure of segregation has its distinct advantages and interpretations, each researcher justifies the choice by reference to one property or another of the chosen measure.

For our purposes, Theil's H has a particularly advantageous feature; it is an additive measure that allows us to add up results for separate metropolitan areas to calculate segregation among regions and for the nation as a whole and to subdivide metropolitan areas into their constituent parts. Detailed comparisons among the available measures indicate that H has all the advantages of other widely used measures plus this one (James and Taeuber 1985).[9] We used this additive feature of H to calculate (1) the overall level of segregation of the nation's metropolitan population for each census year since 1960 and (2) how much each of the nested geographic levels—tracts, cities and suburbs, municipalities and places within the suburban ring, metropolitan areas, and regions—contributed to the nation's total in that year.

To see how this property is an advantage, take, for example, the segregation of immigrants. The foreign born and the native born tend to live in different census tracts across the country but cluster in other ways as well. With H, we can answer each of

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7. As one reviewer of an earlier version of this article pointed out, some segregation also develops because of geographically differential rates of fertility, mortality, marriage, and divorce.

8. The same proportion of $\sim i$ would also have to move.

9. Theil's H also permits calculations with more than two categories (see, e.g., Iceland 2002; Reardon and Firebaugh 2002). In this article, however, we use only dichotomies to unveil more clearly who is separated from whom. We also note, as did Fischer (2003) and White (1986), that H is not "composition invariant"—the index changes if the data are simply multiplied. But this is a problem only with small and rapidly changing proportions of minorities (White 1986).

these questions: Of the total national level of tract segregation, how much is a result of separation by region of the country (immigrants being disproportionately in the West and East, rather than in the South and Midwest)? How much by metropolitan areas (immigrants being drawn more to Los Angeles than to Seattle)? How much by the divide between city and suburb (immigrants being drawn to central cities)? How much by specific towns (immigrants clustering in certain towns within suburban areas)? How much at the level of tracts themselves (neighborhood by neighborhood segregation inside towns)?

Formally, the calculation of H begins with entropy (E) which is defined as $\Sigma_i p_i \ln(1 / p_i)$, for $I = 1, \ldots I$, where there are I different groups, and $\Sigma_i p_i = 1$. With just two groups (i and $\sim i$), $p_{\sim i} = 1 - p_i$ so the formula for E simplifies to

$$E = p_i \ln\left(\frac{1}{p_i}\right) + \left(1 - p_i\right) \ln\left(\frac{1}{1 - p_i}\right). \tag{1}$$

If $p_i = 1$ or $p_i = 0$, let $E = 0$ by definition to avoid division by zero. The maximum value of E is 0.69, which is achieved when $p_i = p_{\sim i} = 0.5$.

We move from E, a measure of the diversity of the population in a given area (e.g., a metropolitan area), to H, our measure of segregation, by comparing all the Es for the subareas (labeled E_s for $s = 1, \ldots S$) to the overall E for the larger area. Specifically, H is the average difference between the subareas' Es and the overall E, expressed as a proportion of overall E and weighted by the subarea's share of the total population:

$$H = \sum_{s=1}^{S} \frac{T_S}{T}\left(\frac{E - E_S}{E}\right), \tag{2}$$

where T is the total population of the larger area, T_s is the population in subarea s, E is overall entropy, and E_s is the entropy in subarea s.

Intuitively, we think of a place as segregated if the subparts have either many or few members of a population, say immigrants, relative to the prevalence of immigrants in the whole. Similarly, we think of a place as integrated if the subparts all have about the same concentration of immigrants. H works exactly as our intuition does. H is maximized when each subarea within the whole has only one group living there (the population is either all immigrants or all natives, no mixing). Conversely, H is minimized when all the subareas have the same distribution of groups i and $\sim i$ as the larger area they are part of. For example, if a place is 10% immigrant and 90% native, its E is .325. If each of the four tracts within the town is also split 10:90, then H, the segregation index, would be calculated as .00; population distributions in the subareas mimic those in the larger area. If, however, one of the tracts was all immigrant and the other three were all native, then H would be 1.00.[10]

In our study, we went beyond the usual practice of measuring segregation at the metropolitan level and aggregated the metropolitan areas to the regional level and regions to the (metropolitan part of) the nation as a whole. We also disaggregated metropolitan segregation into even smaller units. It was possible to do so because H is perfectly additive up and down a nested set of geographic distinctions (Reardon and Firebaugh 2002). What is important for our purposes, we could unambiguously identify the degree of segregation for the nation's metropolitan population and apportion that total segregation across nested

10. Theil's measure is based on the difference between the proportion of interest and one half. A better analogy to the index of dissimilarity may be to take some function of the difference between the proportion of interest and its average. Right now, though, Theil-like measures that use bases other than one-half are not part of the literature, so we used one-half as well.

levels of geography. We calculated H for the metropolitan United States divided into regions; for regions divided into metropolitan areas; for metropolitan areas divided into their central cities and suburban rings; for central cities or suburban rings divided into places; and, finally, for places divided into tracts. All metropolitan residents ended up in this nested structure.[11] Each level contributed to the total H index, summing to the total metropolitan intertract segregation, and indicating what portion of total segregation is attributable to each level of geography. (When adding, each H is weighted by the ratio of the population of the subarea to that of the larger area. Thus, H gives more weight to larger than to smaller places. The main implication is that inferences properly refer to residents, rather than to places.)

We were, in the end, interested in comparing H indices between traits (for example, how segregated are blacks compared with Hispanics or compared with the poor?), across levels (how much black-nonblack segregation is neighborhood based or place based?), and over time (how much has black segregation changed since 1960?). H is calibrated in a way that allows all these types of comparisons.

Some of our measures were based on the full enumeration in the census (age, race, and marital status); others were based on samples that received the census "long form" (nativity and income). Given the huge number of cases, almost any result is statistically significant, but we needed some sense of what a large difference in H may be. By asking how large an exchange of population between two subareas would have to be to register a change in H, we calculated that differences in H of .02 or more are substantively significant (see the appendices, which are available from us on request).

This procedure has limitations. For one, we did not take into account *proximity* and its effects on the segregation of tracts (as in Beggs, Villemez, and Arnold 1997). We did analyze a tract's composition within higher levels of geography, but we did not, for example, assign a heavily black tract a yet-higher segregation score if it was also surrounded by heavily black tracts. The latter is certainly doable, albeit with intense data work, but it is beyond the scope of this first study. We did not include nonmetropolitan places because they were not tracted prior to 2000.[12] Finally, the tract was our smallest geographic unit, although important within-tract segregation certainly occurs. Many of these matters are suitable for later extensions.

DATA

We drew our data from tabulated census-tract statistics for metropolitan areas, 1960 through 2000. In principle, we would have preferred to use individual-level data that would permit coverage of the entire country and more sophisticated analyses, but confidentiality rules prevent connecting individuals to small geographic units, such as tracts. The expansion in number and size of metropolitan areas from 1960 to 2000, migration of the population into metropolitan areas (from overseas and nonmetropolitan areas), and improvements in how well tracts cover metropolitan areas extended our coverage from 59% of the American population in 1960 to 80% in 2000. Technical complexities in analyzing the data on tracts are discussed in the supplementary document available on our web site or from us on request. We conducted many tests of robustness for the implications of the analytical decisions we made and report the results when relevant. In the end, the data reliably describe the changing patterns of segregation for the overwhelming majority of metropolitan Americans.

Prior to 1960, the census's tracting of metropolitan America was too incomplete to use. Even within the period we covered, we faced some formidable data challenges. The

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11. Later, we discuss the problem of people living in metropolitan America but outside defined tracts or in defined tracts that are not nested in defined places.
12. Delineating the data for *urbanized areas* yielded comparable results.

number of urban areas that qualified as "metropolitan" and that were tracted grew from 175 in 1960 (with 23,625 tracts) to 331 in 2000 (with 51,297 tracts). The "younger" metropolitan areas that were added since 1960 tended to be smaller, to be concentrated in the Sunbelt, and to have both spatial and segregation patterns that were different from older ones. We examined whether our findings varied by the "birth cohort" of the metropolitan areas and by their sizes. There were, indeed, differences in some levels of segregation by cohort—notably, newer metropolitan areas were less segregated by race or ethnicity and by home ownership—but the trend lines are substantively similar. Some of the trends we note later are a bit sharper if one looks only at large metropolitan areas. We assessed segregation *contemporaneously*, using the metropolitan areas as they were defined in each decade and using the tract divisions of each decade. In doing so, we explicitly treated metropolitan Americans, *not* tracts or metropolitan areas, as the universe of interest. The alternative would have been to fix the boundaries and analyze only those tracts that were already defined in 1960. That alternative would make sense only if locality itself was the object of study. We wanted to assess whether the average metropolitan American experienced more or less segregation in 2000 than in 1960 (and in what ways). If, for example, a Sunbelt metropolitan area covered twice as many counties in 2000 as it did in 1960, each year's definition would roughly correspond to the population of its residents in that year.

One of our innovations was to look at all metropolitan tracts that were identified in the census. Over the years, many researchers have investigated selected tracts—usually those in the largest metropolitan areas. Including all tracts presented three difficulties. First, some tracts were in more than one census-defined "place." Fortunately, we know the share of the population in each place for tracts that overlapped more than one place, although we may not have that information for the subpopulations within the tract (e.g., the number of immigrants in Place 1 and Place 2 within the tract). Our solution was to assign the tract to the place that contained the largest number of residents. Second, there may have been people who were living in untracted or "unplaced" areas. We combined people who were not in a specific tract into a "remainder" tract. Similarly, some tracts that were not identified with a place were combined into a "remainder" place. Because these units tended to be small, homogeneous, and peripheral, the procedures we used with them made little difference in the results. Third, place identifiers were not available in 1960 for places with populations of less than 25,000, but were provided for places with populations of 25,000 down to 2,500 for later years. Preserving our ability to measure place-level segregation was important, because much of it occurs in those smaller places.[13] Consequently, we statistically modeled what the H scores would have been for tract-level and place-level segregation in 1960 if we had tracts linked to places with populations between 2,500 and 25,000 by using our estimates for tracts in places with populations of 25,000 or more. We used the extrapolated H scores for our analysis (see the discussion in the detailed appendices available from us on request).

We assessed segregation across race and ethnicity, life cycle, and class by examining these specific groupings. For *race and ethnicity* (for 2000, we used single-race counts), we used (1) the proportion of blacks versus all others, (2) the proportion of non-Hispanic whites versus all others, (3) the proportion of Hispanics[14] versus all others, and (4) the proportion of foreign-born versus native-born persons. For *class*, we used (1) the propor-

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13. For example, in 1990, of the 20 richest places in the United States, 14 had populations of 2,500 to 25,000 (places such as Portola Valley, California, and Oyster Bay Cove, New York); 16 of the 20 places with the highest percentage of blacks were also in this category (e.g., Lawnside, Pennsylvania, and Bunche Park, Florida).

14. The definition of Hispanic has shifted over all the censuses, although from 1980 through 2000, the key probes were similar ("Is this person Spanish/Hispanic . . .?"). The 1960 procedure was especially different from the others, so the 1960 data could not be reliably spliced with the others. For 1970, using either a self-definition item (for the 5% sample) or a mother-tongue definition (in the 15% sample) yielded similar results. For continuity, we used the former measure.

Table 1. Total National Segregation (Theil's *H*) and the Proportion Attributable to Tract-Within-Place Segregation, 2000, by Trait

Dimension	Trait (%)	Theil's *H* for Total National Segregation Among Tracts	Decomposition: Percentage Owing to Tract-Within-Place Segregation
Race/Ethnicity	Black	.429	40
	Non-Hispanic white	.355	34
	Hispanic	.357	25
	Foreign born	.207	24
Class	In the highest quintile of income	.156	47
	In the lowest quintile of income	.127	48
	Home owners	.201	52
Life Cycle	Aged 0–14	.021	64
	Aged 18–29	.054	58
	Aged 65 or older	.058	52
	Married	.072	48

tion of households in the top quintile of income for the year versus all others,[15] (2) the proportion in the bottom quintile of income versus all others, and (3) proportion of households that owned their dwellings versus nonowners. For *life cycle*, we used (1) the proportion of (adult) residents who were married versus all others, (2) the proportion of residents who were 0 to 14 years old versus all others, (3) proportion who were 18 to 29 years old versus all others,[16] and (4) the proportion who were older than 64 years versus all others. We report *H* indices for each defined group against all those outside the group (e.g., blacks versus all nonblacks), but we also calculated indices for specific pairings (e.g., blacks versus non-Hispanic whites, blacks versus Hispanics) and report them when it is useful to do so (for more details, see the appendices on our web site).

RESULTS

Overview: 2000

Table 1 presents some simple results for 2000. For each dimension of difference, it shows the total, national level of metropolitan tract segregation as measured by *H* and the percentage of that segregation that can be attributed to between-tract segregation within places, rather than to the total of between-place, city-suburb, between-metropolitan area, and between-region segregation. (The detailed tabular data with the remaining numbers are presented in Appendix Table A1.) Among the most evident findings are these: segregation

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15. For income segregation, we report the residential segregation of families in the top and bottom fifths of family income in each year. Choosing other cut points—at the 5th, 50th, or 95th percentiles—would have clearly yielded different overall levels of segregation, some of which would differ more between the decades than would others. Our sensitivity analyses suggest that changes between decades in the segregation of those with lower incomes would be greater if lower percentile thresholds were chosen, but changes in the segregation of higher earners would differ little if higher percentile thresholds were used.

16. Cutting age at 14 and at 65 is consistent with most historical data. We separated the 18- to 29 year olds to pursue the issue, raised by Mark Stern and Michael Katz (Department of History, University of Pennsylvania), of the historical rise of "youth" neighborhoods.

by race and ethnicity, especially by black versus nonblack, was the greatest; by class, the next largest; and by life cycle, the least severe, and the well-off were more secluded residentially than were the poor (.156 versus .127). In addition, tract-level segregation was especially significant for children—that is, family households were separated from nonfamily ones largely by neighborhood (64% of national segregation was at the tract level)—and was the least important for the segregation of Hispanics and the foreign born (25% and 24%, respectively; residential differences by region and metropolitan area, not shown, largely explain their separate locations). Our major interest is the four-decade changes both in total levels of segregation and, especially, in its components.

We focus on the changes in segregation and its locus from 1960 to 2000. For the purposes of exposition and because some levels of segregation are so much greater than others, we begin with and use the findings on race and ethnicity to illustrate the analysis, specifically the case of black versus nonblack segregation. Figure 1 shows the trends for four of the measures. Consider the first graph, that of black segregation. The entire shaded-in area is the *total* amount of black-nonblack segregation across census tracts in all metropolitan areas of the nation combined. The segments of the shaded area decompose that national metropolitan segregation into, from the bottom up, (1) segregation by region within the metropolitan United States; (2) segregation among metropolitan areas within regions; (3) segregation between center cities and the suburbs within metropolitan areas; (4) segregation between places within the suburbs and multiple center cities; and (5) intertract segregation *within* places—essentially, neighborhood segregation.

The trend for black segregation is dramatic: the total between-tract level segregation—the accumulation of all the components—declined sharply (by 32%) in the United States, from $H = .631$ in 1960 to $H = .429$ in 2000. (The exact numbers are in Appendix Table A1.) This finding is consistent with other reports of declining black segregation nationwide since 1970 (see, e.g., Cutler, Glaeser, and Vigdor 1999; Iceland, Weinberg, and Steinmetz 2002; Logan, Stults, and Farley 2004); by one estimate, the segregation of blacks was lower in 2000 than it had been since 1920 (Glaeser and Vigdor 2003). Analyses of blacks' segregation from specific subgroups of nonblacks show that blacks became less segregated from both non-Hispanic whites and from Hispanics.[17] Our partitioning of H revealed that total segregation declined because neighborhood-level segregation (tracts within places—the top shaded area of Figure 1) dropped sharply (by 60%) from $H = .431$ in 1960 to .173 in 2000. At the same time, there were modest *increases* in segregation at other levels, notably among places within suburbs and central cities (the second layer down), from $H = .035$ in 1960 to .082 in 2000, a 134% increase. Put another way, in 1960, tract-to-tract segregation within places accounted for 68% of the national segregation of metropolitan blacks, but only 40% of it in 2000; between-place segregation accounted for 6% of the segregation of blacks in 1960 and 19% in 2000. The distinction between central cities and their suburbs became much more important between 1960 and 1970, consistent with impressions of the day, but did not expand afterward. Substantively, these results are consistent with descriptions of nonblacks retreating to segregated suburban municipalities in the face of increasingly integrated neighborhoods.

Having discussed the biggest change—the decline in black segregation—in detail, we present the rest of the data more concisely.

Race and Ethnicity

The other panels of Figure 1 display the trend lines for the segregation of blacks, non-Hispanic whites, Hispanics, and the foreign born. The historical pattern of the overall residential segregation of non-Hispanic whites (bottom-left panel) is roughly similar to

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17. Glaeser and Vigdor (2003:220) reported that most of the integration is a result of many more blacks living in neighborhoods with a minority of blacks (rather than of whites integrating black neighborhoods).

Figure 1.   Segregation of Ethnic and Racial Groups (Theil's *H*), by Group, Year, and Geography
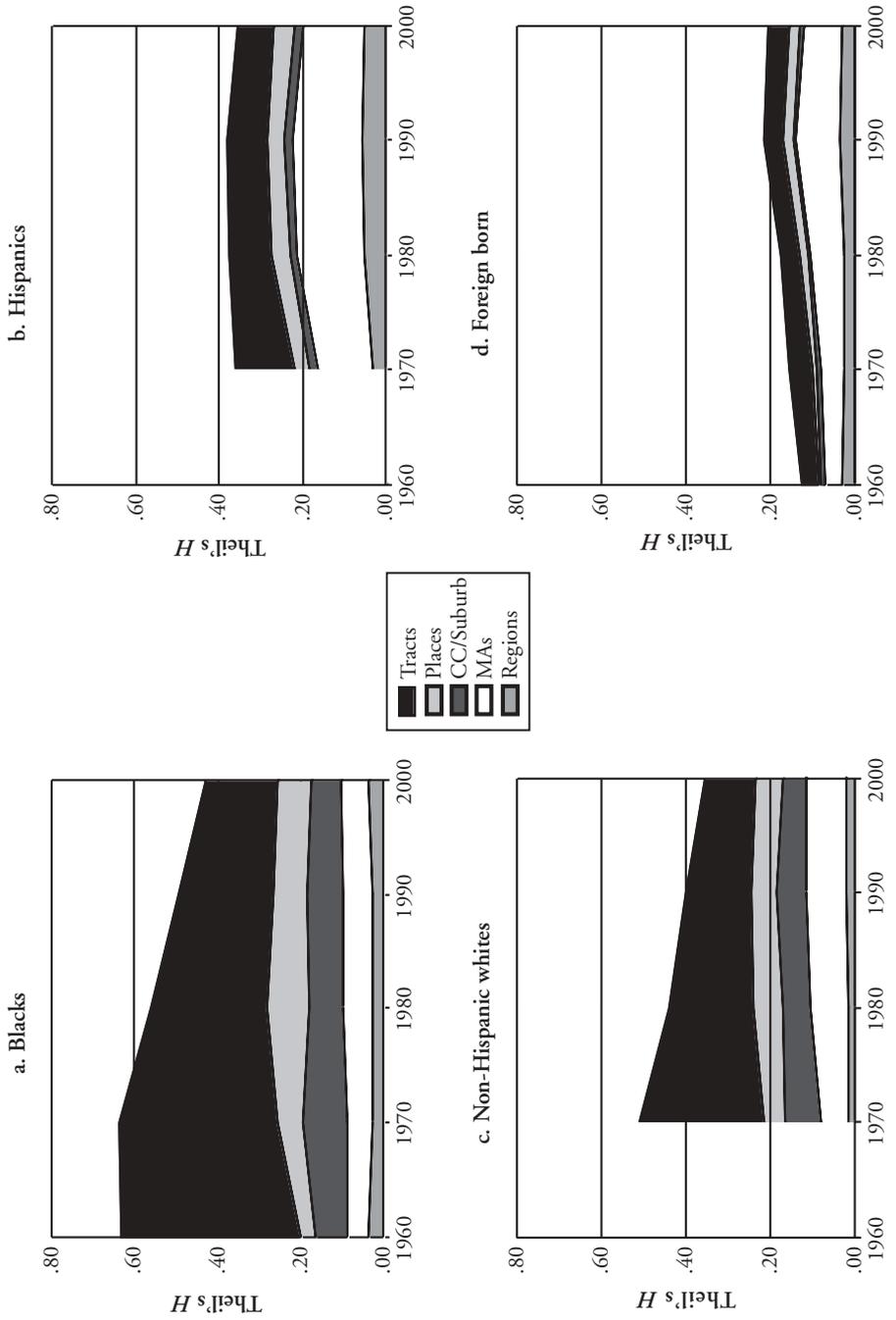
that of blacks (top-left panel): rapidly declining, especially because tract-by-tract segregation declined precipitously (from $H = .30$ in 1970 to $H = .12$ in 2000). The city-suburb component declined by about a third by 2000 (from $H = .09$ to .06). Place-based segregation increased slightly (from 9% to 18% of the total segregation), as in the case of blacks. Distinctively, however, non-Hispanic whites became considerably more segregated by metropolitan area (from $H = .07$ to $H = .09$, from 13% to 27% of total segregation) through 1990. This last finding may reflect, in part, the segregation pattern of Hispanics, which is distinctively at the MSA level. It is also consistent with Frey's (1996) argument that non-Hispanic whites have retreated to inland areas. The trend from 1990 to 2000 diminished this pattern as Hispanics, especially Mexican Americans, spread throughout the country. It is fair to conclude that non-Hispanic whites are now much more exposed to others at the level of neighborhood, but some have found more exclusive metropolitan areas and municipalities within metropolitan areas.

The comparison of black-nonblack to Hispanic–non-Hispanic segregation in the top two panels of Figure 1 tells a few stories. (Note that we could not accurately assign residents to the Hispanic and non-Hispanic categories using the questions from the 1960 census; see the notes on the definition of Hispanic in the appendices on our web site.) Historically, black segregation has been much higher than Hispanic segregation, but the two converged between 1970 and 2000. However, black and Hispanic segregation—though both are rooted in neighborhoods—differ in their details. Hispanics tend to be concentrated in particular regions and metropolitan areas, whereas blacks were more evenly spread throughout the country by 1960. Hence, segregation by neighborhood is more important in isolating blacks. All the black-Hispanic convergence is due to the declining segregation of blacks. The total national segregation of Hispanics was the same in 2000 as it was in 1970. That stasis was largely the net result of countervailing trends: a *drop* in between-neighborhood (i.e., tract-within-place) segregation of about 5 points and a *rise* in between-region, between-metropolitan area, and between-place segregation of about 2 points each. We see these trends as the product of the growth and dispersion of Hispanics. As Hispanics increased their share of the population, Hispanic families found neighborhoods to live in that traditionally had few residents of their group. But given high rates of immigration, they remained concentrated in specific gateway metropolises, such as Los Angeles and New York. Indeed, Hispanic segregation increased in such metropolises and in specific places within those metropolitan areas.[18] Consistent with that speculation is the trend in the segregation of the foreign born, shown in the fourth panel, which increased 67% between 1960 and 2000; the great bulk of that increase is attributable to segregation by metropolitan area.[19] In the same period, the character of the foreign born changed—from elderly European immigrants who had made their way across much of America, to young Hispanic and Asian immigrants who had just arrived in certain portal cities.[20]

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18. Logan et al. (2004) reported a small increase in average within-metropolitan area Hispanic segregation from 1990 to 2000, whereas we show effectively no change in Hispanic segregation below the metropolitan level (city-suburb + place + tract). The differences can be accounted for by the fact that Logan et al. measured Hispanic versus non-Hispanic white segregation, but we measured Hispanic versus non-Hispanic segregation. The increasing coresidence of Hispanics with blacks would line up the two results.

19. Another way to view the change is that, in 1960, between-tract and between-metropolitan area segregation each contributed 30% to the total segregation of the foreign born, but in 2000, between-metropolitan area segregation accounted for 45% of it versus 24% for tracts. Consistent with Alba et al. (1999), the city-suburban distinction became relatively less important, accounting for 8% of foreign-born segregation in 1960 and 4% in 2000.

20. Looking at specific nationalities reveals that the Mexican born were less segregated in total in 2000 than in 1980, while those who were born in Eastern Europe, East Asia, and Central America were more segregated.

This detailed look at racial and ethnic patterns illustrates how we can read complex changes in segregation by this method and obtain clues about the substantive changes not only in the degree, but in the nature of segregation.

Class

Figure 2 displays our results for the three indicators of social class. Note, first, that the scale for H is considerably lower than it was for race and ethnicity, going up only to .30. Americans are much less segregated by income and home ownership than by race and ethnicity. (We suspect that a measure of *wealth* would yield higher levels of segregation, but that measure is unavailable by geography.)

White (1987) reported that class-based segregation at the tract level in several American metropolitan areas had declined between 1940 and 1980. Our results are moderately consistent with his, showing small declines in tract-within-place income segregation (the top layer of the first two panels) from 1960 to 1980, but they tell a more complex story across time and levels of segregation. The total segregation of Americans in the top quintile of household income from other Americans increased from 1970 to 1990 by .043 (36%) and leveled out in the 1990s. The rise is consistent with descriptions of widening economic inequality in those 20 years and suggestions that this inequality was expressed in geographic isolation (e.g., Massey and Hajnal 1995; Mayer 2001). The stasis in the 1990s is consistent with the abating of income inequality during that decade. The increase in the segregation of the affluent occurred largely between metropolitan areas and between places within center cities and suburbs; rising between-tract segregation contributed less to the trend.[21] The first trend suggests that the decades since 1970 witnessed the increasing economic differentiation of metropolitan areas; some areas became especially affluent, consistent with theories about "global cities."[22] The second trend supports arguments that affluent Americans have used the political boundaries around suburban communities as a device for class sequestration. The segregation of low-income Americans was somewhat lower throughout the same period and increased less, by .026 (24%) from 1970 to 1990. Tract-level segregation accounted for most of the isolation of the poor, but the modest increase is attributable to small increases at the metropolitan, city-suburb, and place levels.[23] We also examined the segregation of the richest quintile specifically from the poorest quintile. Total segregation between the two ends of the income distribution was both higher and increased more, from $H = .266$ in 1960 to $H = .329$ in 2000. The increase in the segregation of the wealthy from the poor occurred between metropolitan areas and especially between places within suburban rings.[24]

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21. Of the .038 increase in H between 1970 and 2000, 29% was due to the .011 increase in between-metropolitan area segregation, 51% was due to between-place increases, and 17% was due to between-tract increases.

22. Costa and Kahn (2000) described one dynamic that operates at the metropolitan-area level: the tendency of college-educated couples to cluster in larger metropolitan areas so as to maximize their chances of establishing two careers.

23. Regional-level segregation actually declined, probably because southerners were not as distinctively poor in 2000 as they had been in 1970.

24. The H for between-metropolitan-area segregation of the top from the bottom quintiles increased .026 between 1960 and 2000, while the between-place H increased .041 (with negligible changes in the city-suburb and tract-level Hs). The great bulk of the increase occurred in the 1980s. We also explored the implications of using other cut points for the income analysis. We can maximize the observed increase in segregation for the most affluent by dividing families somewhere between the top 20th and the top 40th percentile; little change occurred for the top 5th percentile, probably because the wealthiest were highly segregated throughout the years. We can maximize the observed increase in segregation at the lower end by isolating the poorest decile, perhaps because in the earlier decades the lowest 10% included many elderly people who were poor in income but not necessarily in assets or housing in those years .

Figure 2.   Segregation of Class Groups (Theil's *H*), by Type, Year, and Geography

a. Top 20% of Income

b. Bottom 20% of Income
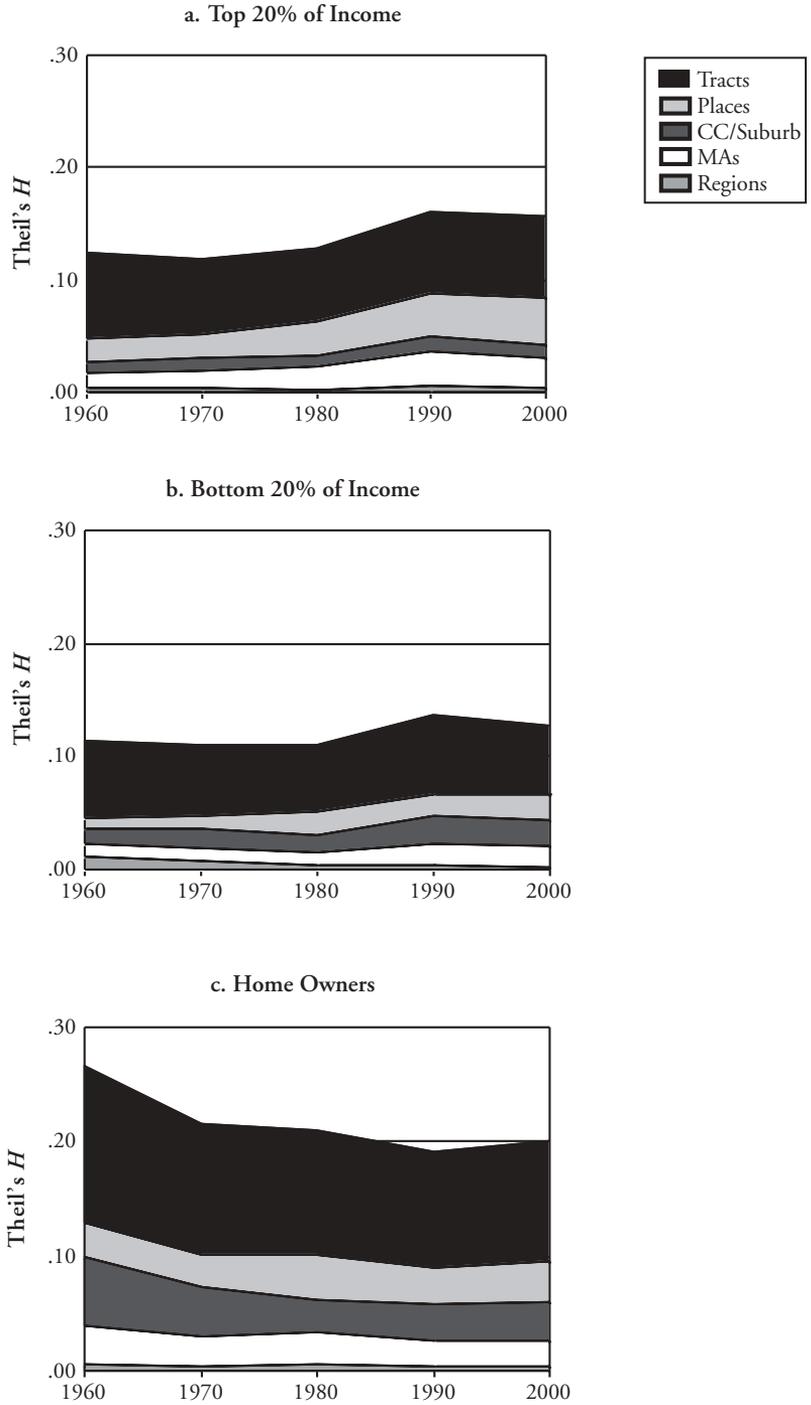
c. Home Owners

On the other hand, the segregation of home owners from renters declined sharply between 1960 and 1990. The decline may be accounted for by the expansion of rental housing into outlying urban and suburban neighborhoods that had been previously all owner-occupied housing and by increasing condominium ownership in center cities. The steepest drops in the Theil index were for city-suburban and for tract segregation. The city-suburban contribution to the overall segregation of home owners dropped.[25] In sum, these data show, as others' data have, that income-based segregation increased in the United States after 1970, but they also show that the increased segregation developed at two levels—the slight economic differentiation of metropolitan areas and the more substantial "place shopping" within suburban rings—and that it leveled off in the 1990s.

Life Cycle

Figure 3 displays the results for segregation by stage in the life cycle, specifically of the married, of children, of young adults, and of the elderly. As we noted earlier, total segregation by life cycle is considerably less than on the other dimensions; our scale of Theil's H thus goes only to .10.

The married and unmarried lived increasingly apart (the total H increased by .034, almost doubling) and the distinction between center city versus suburbs contributed the most to that segregation (an increase of .012, going from 16% to 26% of total segregation). The implication is that cities became more distinctively homes to the unmarried, and suburbs became more distinctively homes to the married (see also Frey and Berube 2003; Frey and Kobrin 1982). Between 1960 and 2000, the difference in the proportion of adults in central cities and adults in the suburbs who were married widened from about 7 points (65% versus 72%) to about 12 points (48.5% versus 60%). The difference in the proportion of those who were never married also widened, from 3 points to about 11 points. (The key distinction here is between the currently married and the never married.) Consistent with this pattern and in line with speculations about the emergence of youth subcultures, young adults became increasingly segregated from everyone else—the total H rose from .02 to .05. Every component except region contributed to this increase, but the fastest increase in the segregation of young adults involved the city-suburb division. (The city-suburb share of total segregation for 18- to 29 year olds increased from 6% to 13%.) Unlike the case of other dimensions of segregation, the city-suburb distinction seems to be notably sharpening for both younger people and for unmarried people.

Finally, changes in the segregation of the elderly fell below our rule-of-thumb standards for significance. We did *not* find what conventional wisdom would suggest—an expansion of the regional segregation of the elderly. Perhaps four regions are too large to capture what is really the movement of retirees to specific states (e.g., Florida and Arizona) or to specific metropolitan areas (e.g., Fort Lauderdale versus Tallahassee). Another possibility may be that many elderly people retired to nonmetropolitan areas, outside our sample, and yet a third that many of the elderly maintained two homes.

In sum, life-cycle segregation was both the lowest in magnitude and changed the least in the three decades we examined. There are modest indications that metropolitan areas became slightly more differentiated by stage in the adult life cycle—marital status and young adulthood.

Robustness

We tested the robustness of our findings with respect to a few possible artifacts. The major one concerned the use of contemporary lists of metropolitan areas. As we discussed earlier,

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25. Overall, the segregation of home owners from renters dropped .065 points, from a total of .266 in 1960 to .201 in 2000. The city-suburb component dropped .027 points (from 23% to 17% of the total) and the tract-within-place component dropped .033 points (a steady 52% of the total).

Figure 3. Segregation of Life-Cycle Groups (Theil's *H*), by Phase, Year, and Geography

a. Married Persons

b. Children (< 15 years old)

c. Young Adults (18–29 years old)

d. Seniors (65+ years old)
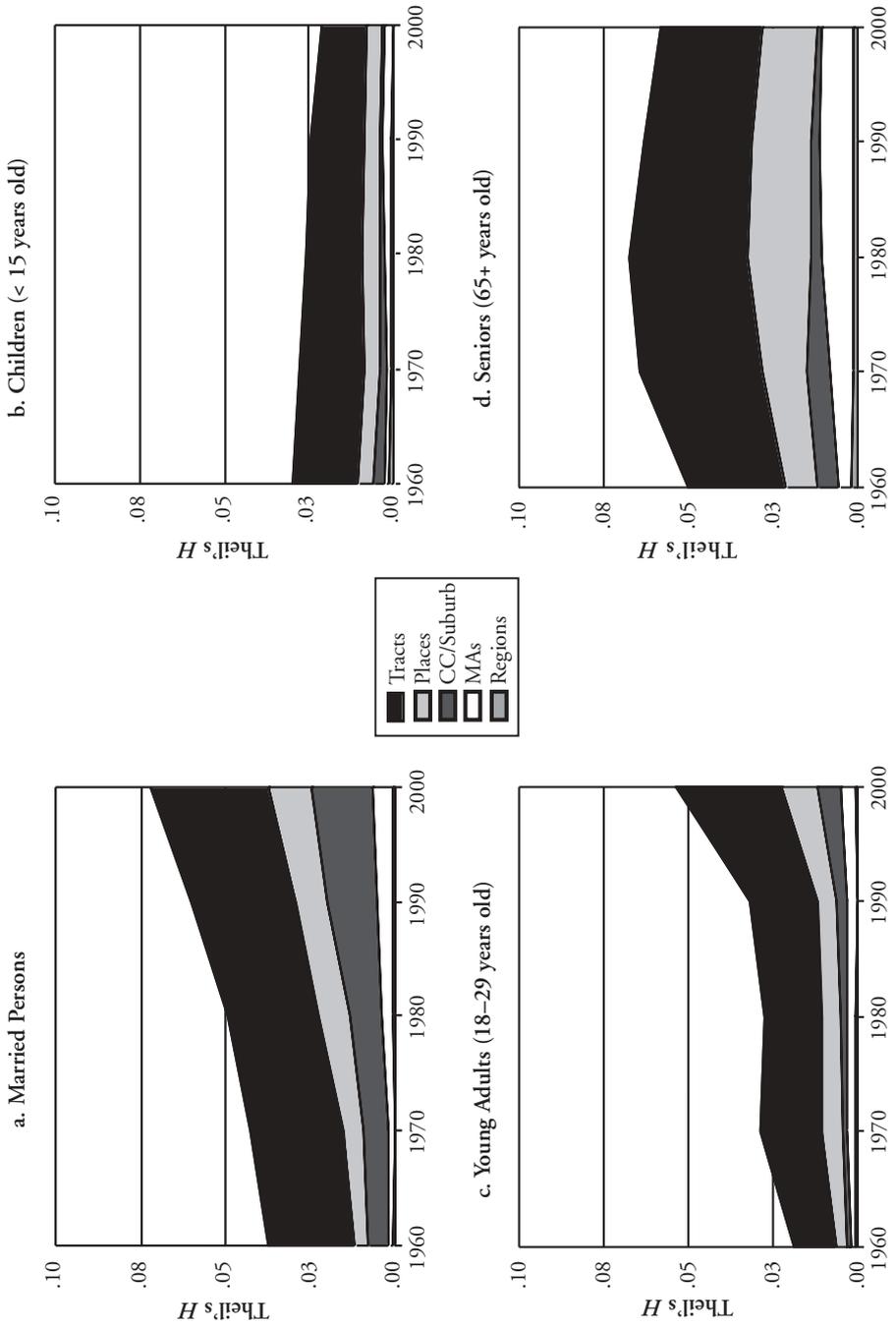
for conceptual reasons, we prefer to use contemporary definitions of the metropolitan population. But it is worthwhile seeing what difference that decision makes. It is true that younger metropolitan areas, ones that were introduced later in the sample, tend to be less segregated and therefore push segregation trends down. But when we examined our trends for only those metropolitan areas in the sample in all five decadal years, we found that the trend lines were barely different from those reported here. Similarly, we compared decade-to-decade changes, using a constant list of metropolitan areas. Again, no substantial difference in the findings emerged. The declines in racial segregation between 1960 and 1980 or 1990 were slightly less steep using constant metropolitan-area comparisons.

The boundaries of specific metropolitan areas also change over time because the census adds counties or subdivides areas. Holding metropolitan areas to constant boundaries did not yield notably different results. A related concern is the change in tract boundaries and the areas tracted over time (see the appendices available from us on request). When we compared the results using constant and contemporary tract lines, the only notable difference was that the segregation of home owners from renters declined slightly more sharply using constant tract lines.[26] Another tract concern was that in some years for some metropolitan areas, we created large "remainder" tracts, which lumped together dispersed and disparate neighborhoods that were not otherwise clustered into tracts. We examined those pseudo-tracts and concluded that they were not distorting our results.

Another question (raised by a reviewer) was whether the difference between data based on full enumerations and those based on long-form samples may have distorted our results. Comparisons of the results based either on samples or on full counts show only trivial differences.[27]

CONCLUSION

Using the Theil index, we have been able to describe levels and trends in urban residential segregation and, most important, to divide the national total into the cumulative contributions of geographic subparts. This procedure adds another perspective to the view of segregation. For example, we have not only documented the decreasing segregation of black Americans but have also found additional, important details: segregation between specific neighborhoods has abated substantially since 1970, suggesting that personal, block-level resistance to integration has weakened or been overcome in the past generation. (And, as we noted earlier, blacks have integrated with non-Hispanic whites; this is not an artifact of growing Latino populations.) Yet, we also found that this trend was partly offset, especially during the 1970s, by growing racial segregation between suburban municipalities. The city-suburb barrier became relatively less important as the number of blacks increased in the suburban ring, but differences among suburbs sharpened. Scholarly and policy focus may rightly shift toward the institutions—tax authorities, zoning districts, school precincts, and the like—that make town lines attractive to movers and barriers to integration (Swanstrom et al. 2002). The segregation of blacks and the segregation of non-Hispanic whites by place increased slightly as towns became more distinctly black or white (and non-Hispanic whites concentrated in certain metropolitan areas). The foreign born became more segregated, largely because they concentrated more

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26. We suspect that the difference is explainable in terms of the criteria used for subdividing tracts—criteria that are tied to types of housing.

27. The concern is warranted. When the Census Bureau estimates tract-level data from long-form samples (income, for example), it calculates the numbers for each tract also using data from neighboring tracts because the sample sizes in the individual tracts are often too small (U.S. Census Bureau 2000). This calculation would have the effect of reducing between-tract differences in a place. In this study, we used 100% count data on some variables (race and ethnicity, home ownership, and age) for 2000, but sample data for the previous years. For other variables, we could use only sample data. Comparing the 2000 results of the H index for 100% versus the sample data showed minor differences.

than before in specific metropolitan areas. Class segregation, although much lower than segregation by race and ethnicity, increased between 1970 and 1990, largely because the well-to-do concentrated more in specific metropolitan areas and, even more, in specific places within metropolitan areas. Americans segregated themselves by life cycle considerably less than by class or race and ethnicity, and there were only modest changes over the period, most notably greater segregation of the unmarried and of young adults within center cities and specific suburban neighborhoods. Such findings, although only illustrative of what this approach may yield, nonetheless add to our understanding of important urban processes. They support the contentions that black-white segregation has, in total, been in decline; that the foreign born are geographically concentrated; that class segregation increased, at least among the affluent; and that we may be seeing the emergence of young-adult neighborhoods in the center cities. The results also underline the importance of *place* differences within metropolitan areas—that political boundaries are increasingly marking segregation by class and race—and that, by inference, advantaged groups are increasingly using municipal lines to sequester themselves. It may be that the city-suburban distinction that was seen as critical in the 1960s and 1970s is waning in importance for class and race, while distinctions among suburbs grow in importance. Finally, the findings support some of the "world cities" literature on metropolitan specialization. Differences among metropolitan areas show up as increasing segregation by class and by race and ethnicity (while regional segregation is largely small and declining).

We presented these findings as an illustration of what could be done by disaggregating segregation in this manner. There are several directions that future research can take. Certainly, researchers could explore segregation along other dimensions of interest, say, by occupation and education. They could also examine segregation by combinatorial categories, for example, the segregation of low-income blacks from middle-class blacks, of native-born Hispanics from native-born non-Hispanics, or single mothers from married mothers (see, e.g., Fischer 2003). And they could pursue results such as Logan et al.'s (2001) finding that gross segregation by race and ethnicity declined for adults but increased for children between 1990 and 2000. (Some of this potential research is limited, however, by confidentiality rules.[28]) Researchers could, of course, explore *n*-category measures, rather than the dichotomies we used—although we note that the dichotomies can reveal the dynamics underlying *n*-category analyses. Future work could also pursue more or different levels of geography, for example, block clusters or 11, rather than 4, regions. And researchers could recalculate spatial indices to take into account the influence of neighboring units.

Another step would be to pursue explanatory models. The Theil measures can become *dependent* variables in studies of what determines segregation (as in Iceland 2002; Jargowsky 1997; Logan et al. 2004). For example, individual metropolitan areas can be coded for the degree to which their segregation is between city and suburb, among jurisdictions, or among tracts, and researchers can ask what is it about metropolitan areas' population compositions, economies, locations, and histories that accounts for the variations. Conversely, the Theil measures can be *independent* variables in studies of the consequences of segregation. One could ask whether, for example, levels of economic inequality, violence, or political turmoil are most affected by city-suburb, place, or neighborhood levels of segregation (as some researchers have done with gross measures of segregation; see, e.g., Beggs et al. 1997; Cutler and Glaeser 1997; Massey 1995). Whichever direction is pursued, this technique opens up possibilities of sharply refining our understanding of metropolitan segregation.

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28. Our analysis was based on the summary files. To look at more detailed categories requires going to the public-use individual-level data, but location indicators are masked.

Appendix Table A1. Theil's *H*, by Dimension of Segregation, Level of Geography, and Year

Year	Total H Tracts Within Total	Additive Decomposition Region Within Total	MAs Within Region	CC/S Within MAs	Places Within CC/S	Tracts Within Places	Proportional Decomposition Region Within Total	MAs Within Region	CC/S Within MAs	Places Within CC/S	Tracts Within Places
Race/Ethnicity											
Blacks versus others											
1960	0.631	0.037	0.050	0.077	0.035	0.431	0.059	0.080	0.122	0.056	0.684
1970	0.636	0.026	0.061	0.107	0.061	0.380	0.041	0.096	0.168	0.096	0.598
1980	0.561	0.025	0.073	0.083	0.097	0.284	0.044	0.130	0.148	0.173	0.505
1990	0.493	0.026	0.072	0.087	0.082	0.225	0.053	0.145	0.178	0.166	0.458
2000	0.429	0.033	0.067	0.074	0.082	0.173	0.078	0.156	0.172	0.191	0.403
Non-Hispanic whites versus others											
1960	—	—	—	—	—	—	—	—	—	—	—
1970	0.512	0.013	0.066	0.088	0.047	0.299	0.024	0.128	0.172	0.092	0.584
1980	0.439	0.014	0.090	0.064	0.071	0.199	0.032	0.205	0.147	0.162	0.454
1990	0.399	0.018	0.099	0.067	0.059	0.156	0.045	0.249	0.167	0.148	0.391
2000	0.355	0.021	0.094	0.056	0.064	0.121	0.058	0.265	0.157	0.180	0.340
Hispanics versus others											
1960	—	—	—	—	—	—	—	—	—	—	—
1970	0.358	0.033	0.128	0.021	0.033	0.142	0.091	0.358	0.060	0.093	0.398
1980	0.376	0.049	0.164	0.016	0.042	0.105	0.131	0.437	0.042	0.112	0.278
1990	0.381	0.055	0.170	0.020	0.041	0.096	0.144	0.445	0.053	0.107	0.251
2000	0.357	0.050	0.150	0.017	0.051	0.090	0.139	0.419	0.047	0.143	0.252
Foreign born versus native born											
1960	0.124	0.031	0.037	0.010	0.008	0.037	0.250	0.300	0.081	0.067	0.302
1970	0.157	0.023	0.054	0.010	0.013	0.056	0.149	0.344	0.066	0.084	0.357
1980	0.174	0.026	0.079	0.007	0.018	0.045	0.147	0.453	0.037	0.105	0.258
1990	0.215	0.036	0.103	0.009	0.020	0.048	0.167	0.477	0.040	0.095	0.222
2000	0.207	0.028	0.094	0.009	0.027	0.050	0.136	0.454	0.042	0.128	0.240
Class											
Top quintile of income versus others											
1960	0.123	0.003	0.014	0.010	0.022	0.075	0.026	0.110	0.080	0.178	0.606
1970	0.118	0.003	0.016	0.011	0.021	0.066	0.025	0.139	0.094	0.181	0.561
1980	0.128	0.002	0.020	0.010	0.032	0.065	0.017	0.155	0.074	0.248	0.505
1990	0.161	0.006	0.031	0.013	0.037	0.073	0.038	0.193	0.084	0.230	0.456
2000	0.156	0.003	0.027	0.012	0.041	0.073	0.019	0.176	0.079	0.261	0.466
Bottom quintile of income versus others											
1960	0.113	0.011	0.011	0.013	0.010	0.068	0.099	0.100	0.117	0.085	0.599
1970	0.110	0.007	0.012	0.017	0.012	0.063	0.066	0.105	0.152	0.107	0.570
1980	0.111	0.003	0.011	0.016	0.021	0.060	0.027	0.102	0.140	0.190	0.541
1990	0.136	0.003	0.019	0.024	0.021	0.069	0.024	0.141	0.178	0.151	0.506
2000	0.127	0.002	0.019	0.022	0.022	0.062	0.017	0.147	0.176	0.176	0.483

(Appendix Table A1, continued)

Year	Total *H* Tracts Within Total	Additive Decomposition					Proportional Decomposition				
		Region Within Total	MAs Within Region	CC/S Within MAs	Places Within CC/S	Tracts Within Places	Region Within Total	MAs Within Region	CC/S Within MAs	Places Within CC/S	Tracts Within Places
Class (cont.)											
Home owners versus others											
1960	0.266	0.006	0.033	0.061	0.029	0.137	0.024	0.122	0.229	0.108	0.517
1970	0.216	0.005	0.025	0.044	0.028	0.114	0.021	0.115	0.202	0.132	0.529
1980	0.210	0.005	0.029	0.028	0.040	0.108	0.023	0.140	0.134	0.190	0.514
1990	0.190	0.003	0.024	0.032	0.032	0.100	0.016	0.126	0.167	0.167	0.524
2000	0.201	0.004	0.023	0.034	0.036	0.105	0.019	0.113	0.170	0.177	0.521
Life Cycle											
Married versus others											
1960	0.037	0.000	0.001	0.006	0.004	0.025	0.010	0.040	0.161	0.112	0.677
1970	0.043	0.000	0.002	0.007	0.006	0.028	0.006	0.042	0.167	0.138	0.647
1980	0.049	0.001	0.004	0.009	0.010	0.026	0.012	0.074	0.178	0.200	0.536
1990	0.060	0.000	0.005	0.015	0.009	0.031	0.008	0.079	0.247	0.152	0.514
2000	0.072	0.001	0.006	0.018	0.013	0.034	0.010	0.078	0.255	0.179	0.477
Children aged 0–14 versus others											
1960	0.030	0.001	0.001	0.003	0.005	0.020	0.034	0.047	0.116	0.152	0.652
1970	0.028	0.000	0.001	0.002	0.005	0.019	0.016	0.050	0.078	0.168	0.688
1980	0.026	0.000	0.002	0.001	0.005	0.017	0.015	0.082	0.051	0.210	0.642
1990	0.024	0.001	0.002	0.001	0.004	0.016	0.026	0.102	0.045	0.186	0.642
2000	0.021	0.000	0.002	0.001	0.004	0.014	0.014	0.097	0.051	0.201	0.637
Persons aged 18–29 versus others											
1960	0.019	0.001	0.001	0.001	0.003	0.013	0.032	0.073	0.057	0.167	0.671
1970	0.029	0.001	0.003	0.001	0.006	0.018	0.024	0.092	0.046	0.215	0.623
1980	0.028	0.000	0.003	0.002	0.006	0.017	0.018	0.100	0.066	0.208	0.608
1990	0.032	0.000	0.003	0.003	0.006	0.020	0.004	0.098	0.085	0.195	0.617
2000	0.054	0.000	0.005	0.007	0.011	0.031	0.009	0.086	0.126	0.196	0.582
Seniors aged 65 and older versus others											
1960	0.050	0.002	0.004	0.006	0.009	0.029	0.031	0.087	0.121	0.183	0.578
1970	0.064	0.001	0.007	0.007	0.013	0.036	0.021	0.102	0.107	0.210	0.561
1980	0.067	0.001	0.009	0.003	0.018	0.035	0.018	0.138	0.051	0.274	0.518
1990	0.063	0.002	0.010	0.003	0.017	0.032	0.024	0.155	0.040	0.271	0.509
2000	0.058	0.001	0.009	0.002	0.016	0.030	0.023	0.160	0.026	0.272	0.519

Note: MAs = metropolitan areas, and CC/S = central city versus suburb.

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