DECOMPOSING SCHOOL RESEGREGATION: SOCIAL CLOSURE, RACIAL IMBALANCE, AND RACIAL ISOLATION

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Forthcoming in *American Sociological Review*

Keywords
Segregation, education, race and ethnicity, social stratification

Word Count: 9,383 words, 1 table, 7 figures, 1 appendix

Acknowledgements
This research was supported by the Institute of Education Sciences, U.S. Department of Education, through Award # R305B090009 to the University of Wisconsin-Madison, and by the National Science Foundation through Graduate Research Fellowship, Award # DGE-0718123 to the author. Its contents are solely the responsibility of the author and do not represent the official views of any supporting agency. Thanks to the anonymous *ASR* reviewers, Christina Diaz, Christine Schwartz, Katherine Curtis, Pamela Oliver, Adam Gamoran, and Jack DeWaard for their helpful feedback. Thanks to Greg Bales for editorial assistance. Direct mail to Jeremy E. Fiel, University of Wisconsin-Madison, Department of Sociology, 8128 William H. Sewell Social Science Building, 1180 Observatory Drive, Madison, WI 53706-1393. Direct e-mail to jfiel@ssc.wisc.edu.

ABSTRACT

Today's typical minority student attends school with fewer whites than his counterpart in 1970. This apparent "resegregation" of American schools has sparked outrage and debate. Some blame a rollback of desegregation policies designed to distribute students more evenly among schools, but others blame the changing racial composition of the student population. This study clarifies the link between distributive processes of segregation, population change, and school racial composition by framing school segregation as a mode of social closure. It then uses a novel decomposition approach to determine the relative contributions of distributive processes and compositional change in the apparent resegregation of schools from 1993 to 2010. For the most part, compositional changes are to blame for the declining presence of whites in minorities' schools. Whites and minorities actually continued to become more evenly distributed across schools, helping increase the exposure of minority students to whites. Further decompositions reveal the continued success of district-level desegregation efforts, but find the greatest barrier to further progress to be the uneven distribution of students between school districts in the same area. The findings call for new research and new policies to address contemporary school segregation.

INTRODUCTION

The *Brown v. Board of Education* (1954) decision began a decades-long process of widespread school desegregation. Since the late 1980s, however, a troubling trend has emerged: students of each minority group have attended schools with fewer and fewer whites (Figure 1A), and Hispanic and Asian students have been increasingly isolated in schools with high concentrations of their same-race peers (Figure 1B). According to these measures of *exposure*, minorities in the 2000s attended schools that looked disturbingly similar to those they attended in the 1960s.[1] This apparent "resegregation" of American schools has sparked outrage among many researchers and educational stakeholders, who have blamed the federal government and court system for abandoning desegregation policies and called for renewed efforts to desegregate schools (Orfield, Frankenberg, and Lee 2002; Orfield and Lee 2007).

It has also sparked debate, however, as others criticize the evidence of school resegregation (Logan 2004; An and Gamoran 2009). Critics emphasize that measures of exposure are confounded with the racial composition of the population: as the share of whites in the student population declined (Figure 2A), it was inevitable that minority students would attend schools with fewer white peers. Many sociologists thus prefer measures of *racial imbalance* – also known as unevenness – to study school segregation. These measures reveal the extent to which students of different race/ethnic groups are unevenly distributed across schools, and they are not confounded with the racial composition of the student population (James and Taeuber 1985). Figure 2B shows that racial imbalance declined in the average metropolitan area/nonmetropolitan county from 1993 to 2010, whether we consider imbalance among all major race/ethnic groups, imbalance between whites and nonwhites, or imbalance among nonwhites.[2] From this perspective, the distributive processes that segregate students have

continued to abate, suggesting the persistence of school desegregation (Logan 2004; An and Gamoran 2009).

A simple example highlights the difference between exposure and imbalance. Imagine two cities where the average black student attends a school that is 35% white and 65% black. Black isolation is high (.65) and black-white exposure is low (.35) in both cities, but the cities differ markedly in racial composition and in how students are allocated to schools. The first city is 75% white and 25% black, and separates its students into predominantly black and predominantly white schools; the schools are extremely racially imbalanced. The second city, however, is 35% white and 65% black, and makes a concerted effort to desegregate its schools by allocating black and white students evenly; the schools are racially balanced and simply reflect the composition of the population.

The resegregation debate stems from these two perspectives of segregation: one emphasizes schools' racial composition and employs measures of exposure; the other emphasizes the distribution of race/ethnic groups across schools and employs measures of imbalance. Both are recognized as legitimate dimensions of segregation, and the differences between them are well understood (Massey and Denton 1988). The critical question in the resegregation debate, however, concerns how these dimensions are conceptually related: how have the local processes that distribute students among schools, indicated by racial imbalance, affected the racial composition of schools, indicated by exposure? I clarify this relationship theoretically by framing school segregation as a mode of social closure (Weber 1978), and examine it empirically with a novel decomposition-based approach that isolates the respective roles of racial imbalance and compositional change in the decline of minority-white exposure in

schools. My findings challenge the resegregation argument, but go further to reveal a contemporary structure of school segregation that demands new research and new policies.

SCHOOL SEGREGATION AS A MODE OF SOCIAL CLOSURE

Despite its long history in sociology, school segregation remains theoretically underdeveloped. A suitable theory should explain the causes and consequences of school segregation, but it should also explain the relationship between different dimensions of segregation. This section demonstrates that a Weberian conceptualization of school segregation as a mode of social closure meets these criteria. Succinctly, closure is "the process by which social collectivities seek to maximize rewards by restricting access to resources and opportunities to a limited circle of eligibles" (Parkin 1979:44). Weberian social closure theory has become a popular explanation for occupational and class-based inequalities, including occupational segregation (Collins 1971, Parkin 1979, Tomaskovic-Devey and Skaggs 2002; Weeden 2002), but it has yet to be applied to racial segregation, even though one of closure's clearest illustrations is " the stratification of ethnic communities in the United States" (Parkin 1979:45).

Social Closure, School Segregation, and Stratification

A social closure perspective views school segregation as a mode of exclusion that emerges from group-based competition for resources and promotes educational stratification, and this is borne out by the evidence. Almost 60 years since the *Brown* (1954) decision, black, Hispanic, and American Indian students continue to be concentrated in predominantly minority, high-poverty, low-achieving schools, while whites remain concentrated in higher-achieving predominantly white schools with less poverty (Logan, Minca, and Sinem 2012). Such crucial resources as local funds (Condron and Roscigno 2003) and experienced teachers (Clotfelter,

Ladd, and Vigdor 2005), as well as less tangible resources such as status (Sikkink and Emerson 2008), are unequally distributed according to schools' racial and socioeconomic composition.

These inequalities across schools contribute to unequal student outcomes. Since the *Equality of Educational Opportunity* report (Coleman et al. 1966), research has shown that minority students exhibit lower academic achievement and attainment when they attend schools with high concentrations of minorities and few whites (Borman et al. 2004; Goldsmith 2009; Hanushek, Kain, and Rivkin 2009; Borman and Dowling 2010). The isolation of black students in predominantly minority schools is also correlated with a growing black-white achievement gap as students progress through early elementary school (Condron 2009), and with the persistence of racial achievement gaps since the 1970s (Berends, Lucas, and Peñaloza 2008).

Parkin (1979) recognized that excluded groups would attempt to counteract closure and gain access to the resources and opportunities from which they are excluded. Accordingly, school desegregation in the 1970s and 1980s had many benefits for black students. Access to desegregated schools – that is, schools with substantial white enrollments – helped reduce the black high school dropout rate (Guryan 2004), reduce the black-white test score gap by boosting black achievement (Grissmer, Flanagan, and Williamson 1998; Vigdor and Ludwig 2008), and improve outcomes for blacks in areas such as earnings, health, and incarceration (Johnson 2011).

Processes of School Segregation

A social closure framework also speaks to the processes underlying school segregation, including how individual behaviors lead to group-level segregation. Collins (1971) argues that individual competition for resources translates into group-based competition because group membership is a powerful source of identity that is linked to individuals' social and cultural resources. In an illuminating study by Sikkink and Emerson (2008), both highly educated black

and white parents sought high-status schools for their children, but racially segregated social networks limited white parents' access to information about high-quality integrated schools. This lack of information led whites to associate the presence of minority students with lower status and enroll their children in predominantly white schools.

There is also evidence of a dynamic interplay between processes of exclusion and challenges from the excluded. Blacks display a greater preference for integrated schools than whites, suggesting that blacks seek access to the resources and opportunities available in whites' schools (Saporito and Lareau 1999). When minority groups do gain access to these schools, whites adapt by finding new avenues of exclusion, fleeing to private schools (Andrews 2002; Fairlie and Resch 2002; Clotfelter 2004), charter schools (Renzulli and Evans 2005), and whiter districts nearby (Clotfelter 2001; Logan, Oakley, and Stowell 2008). The impressive and widespread desegregation of schools from the 1960s through the 1980s indicates that minorities and policymakers successfully challenged these exclusionary processes of segregation for a significant period of time (Orfield et al. 2002; Clotfelter 2004; Logan et al. 2008). Whether this success is a thing of the past is yet to be resolved.

Social Closure, the Dimensions of Segregation, and Demographic Change

Social closure theory views exclusionary processes of segregation as a means to an end. These processes operate to distribute students unevenly among schools at local levels, generating racial imbalance, which in turn affects the degree to which students are racially isolated or exposed to other groups. Groups exclude others to secure a privileged position or monopolize access to resources. If the distribution of quality teachers or financial resources is at stake, the unequal allocation of students and resources to schools – and hence racial imbalance – is of central importance. If school racial composition is tied to status or if there are important

compositional effects – such as peer influence – exposure is key. Social closure theory thus highlights the link between racial imbalance and exposure, and recognizes the importance of both dimensions of school segregation.

Local distributive processes constitute only one set of forces shaping school racial composition – large-scale demographic processes are also critical. The declining white share and growing minority share of the school-age population, for example, is a result of low levels of white fertility coupled with high rates of Hispanic and Asian immigration (Frey 2011). To the extent that school racial composition matters in and of itself, these demographic processes have important implications for educational inequality. There are at least two reasons, however, to distinguish these population changes from processes of closure: they do not revolve around the distribution of students or resources at local levels, and they are much less amenable to public policy. They also provide the main counterargument to claims of school resegregation.

THE RESEGREGATION DEBATE

Resegregation reports have captured the attention of sociologists, education researchers, and the popular press. The story is that since the late 1980s, several forces have undone over two decades of hard-earned progress in school desegregation (Orfield et al. 2002). The major culprit is the Supreme Court, which has ended or limited several district-level desegregation plans since the early 1990s (Clotfelter 2004; Orfield and Lee 2007). As a result, many of the districts involved in these decisions returned to neighborhood-based school assignment policies, leading to increases in both racial imbalance and racial isolation (Mickelson 2005; Clotfelter, Vigdor, and Ladd 2006; An and Gamoran 2009; Reardon et al. 2012). Also to blame are federal policies, which helped spur desegregation in the 1960s by tying federal funds to compliance with nondiscrimination laws (Cascio et al. 2010), but have increasingly favored accountability

policies and turned a blind eye to school segregation (Orfield and Lee 2007). A third factor is the recent expansion of school choice (Orfield et al. 2002); evidence suggests that families choose charter, magnet, and other choice schools in ways that exacerbate both racial imbalance and isolation (Saporito and Sohoni 2006; Bifulco and Ladd 2007; Sikkink and Emerson 2008).

These factors play out at local levels, and the evidence implicating them in school segregation comes primarily from analyses of school districts. By implicating these local dynamics in national-level changes in exposure, the resegregation argument presumes that local processes of exclusion – driven by court decisions, school choice, and the like – have worsened across America. However, the continued declines in racial imbalance between whites and minorities across most of the nation challenge this presumption (Figure 2; Logan 2004; An and Gamoran 2009). These findings point to the continued success of desegregation strategies, suggesting that declines in minority-white exposure are attributable to the growing minority share of the student population.

MOVING FORWARD

If both perspectives – exposure and imbalance – are legitimate dimensions of segregation (Massey and Denton 1988), what should we make of the contradictory findings they produce? Comparing aggregate measures of these dimensions is unsatisfactory because they have different mathematical properties and weight observations differently. Hence, national averages of racial imbalance obscure the relationship between local imbalances and national-level exposure. It would also be imprudent to disregard one dimension in favor of the other. The "segregation effects" documented in the literature could reflect consequences of school racial composition, or they could reflect an unequal distribution of students and resources across schools. Furthermore,

the racial composition of a given school may be more relevant to parents, teachers, and students, but racial imbalance between schools is what desegregation policies can actually address.

In their analysis of segregation measures, Duncan and Duncan (1955: 217) warned, "…there is no way to devise adequate indexes which avoids dealing with theoretical issues." Yet we have continued to focus on measures of segregation first and theory second. Our great strides in understanding the conceptual properties of different measures (James and Taeuber 1985; Massey and Denton 1988) have fallen short of any effort to understand how the dimensions tapped by these measures relate to one another under the heading of segregation. The social closure framework provides the missing conceptual link between the key dimensions of imbalance and exposure: distributive processes of segregation that generate racial imbalance are a means to hoard resources and opportunities, and to promote racial isolation or reduce intergroup exposure. Empirically examining this relationship requires controlling for changes in the student population that also shape the racial composition of schools.

I do so by developing a novel set of standardizations and decompositions that provide answers to critical questions about contemporary school segregation. The first addresses the heart of the resegregation debate: to what extent is the apparent resegregation of American schools – that is, declining minority-white exposure – driven by (a) changes in student composition and (b) changes in the processes that distribute students across schools. The recent expansion of school choice and the changing geographic scale of segregation (Reardon, Yun, and Eitle 2000) motivate a second question: how have racial imbalances at different organizational levels of the school system or across different types of schools influenced racial isolation and intergroup exposure? Finally, growing Hispanic and Asian populations and rising anti-immigrant backlash evoke concerns about the segregation of these groups as well as blacks

(Orfield and Lee 2006; Van Hook and Snyder 2007), motivating a third question: how has the evolving structure of school segregation differed across race/ethnic groups?

DATA AND ANALYTIC APPROACH

School-level racial composition data are necessary to measure exposure or racial imbalance. Because the exclusionary processes that generate racial imbalance occur at local levels, the local context of segregation must be also defined. My approach nests several organizational levels of the school system within metropolitan areas or nonmetropolitan counties: traditional public schools are nested within school districts; districts are nested within the public school sector along with charter schools – a unique type of public school that typically does not restrict attendance based on residence; and the public and private sectors are nested within metropolitan areas or nonmetropolitan counties, which I label the metro/county level.[3] The sorting that constitutes segregation occurs within metropolitan areas and nonmetropolitan counties, so any uneven allocation of students at higher levels – between metropolitan areas, nonmetropolitan counties, or states – is presumed to result from large-scale demographic processes rather than exclusionary processes of segregation.

This nesting structure is illustrated in Figure 3. Racial imbalance can occur between any two ovals on the same level (indicated by dashed arrows), and among schools within each oval. Hence, metro/county-level imbalance consists of imbalances between the public and private sectors and among schools within each sector. Public sector imbalance consists of imbalances between charter and traditional public schools and among schools of each type. Finally, imbalance among traditional public schools consists of imbalances between school districts and among schools within each district.

I compiled data for every other school year from 1989-1990 until 2009-2010. Public school data come from the Public Elementary/Secondary School Universe Survey and the Local Educational Agency Universe Survey in the Common Core of Data (CCD), collected by the National Center for Education Statistics (NCES). Private school data come from the Private School Survey (PSS), also collected by NCES. The necessary data are unavailable for private schools for the 1989-1990 and 1991-1992 school years, and a few states failed to report racial composition data for public schools in various years (see Appendix Table A1).[4] I draw conclusions based on patterns observed between 1993 and 2010 so as to use the most complete data, but analyses using the earlier data produced similar results.

Basic Measures

The first step in the analysis replicates the resegregation evidence using national-level measures of exposure for each race/ethnic group (see Figure 1). My analysis differs slightly from prior reports in that I include private schools, whose contribution to school segregation is well documented (Fairlie and Resch 2002; Clotfelter 2004). Equation 1 shows the formula for calculating the exposure (P_{xy}) of group *x* to group *y* across *n* schools, where t_{xs}, t_{ys}, and t_s represent the number of students of group *x*, group *y*, and all students enrolled in school *s*, respectively, and X represents the total national student population of group *x*. This measure indicates that the average student of group *x* attends a school where the proportion of students of group *y* is equal to *P* – if black-white exposure is 0.45, the average black student attends a school that is 45% white. Group *x*'s isolation is equivalent to its exposure to itself, calculated by replacing t_{ys} with t_{xs}.

$$P_{xy} = \sum_{s=1}^{n} \frac{t_{xs}}{X} * \frac{t_{ys}}{t_s} \quad (1)$$

The most common measures of racial imbalance are the Dissimilarity Index (*D*) and Theil's Information Theory Index (*H*). Although *D* has a longer history as a measure of segregation, *H* is increasingly popular and is preferred here because of its ability to handle multiple groups simultaneously (Reardon and Firebaugh 2002). *H* measures how much less diverse schools within a given unit of analysis are than the unit as a whole, or how unevenly groups are distributed among schools. In this study, *H* measures racial imbalance within metropolitan areas and nonmetropolitan counties (see Figure 2). *H* is based on Entropy (*E*), a multi-group measure of diversity calculated with equation 2, where Q_m represents group *m*'s proportion of enrollment. *H* is calculated according to equation 3, where t_s and E_s represent the total enrollment and entropy of school *s*, respectively, and *T* and *E* represent the total enrollment and entropy in the metro area/county, respectively. Because I use *H* mainly for descriptive purposes, I refer readers seeking more information regarding the calculation or properties of *H* to Reardon et al. (2000), Reardon and Firebaugh (2002), and Fischer et al. (2004).

$$E = \sum_{m=1}^{m} Q_m \ln\left(\frac{1}{Q_m}\right) \quad (2)$$

$$H = \frac{\sum_{s=1}^{n} \frac{t_s}{T}(E - E_s)}{E} \quad (3)$$

Standardization and Decomposition

Two factors determine the racial composition of schools, and hence measures of exposure: the racial composition of the student population, and the distribution of this population across schools. Similarly, changes in these two factors determine changes in exposure over time. The goal is to isolate the contribution of each factor. I do so with a novel adaptation of standardization techniques long used to decompose differences in demographic processes across populations into components attributable to differences in composition and differences in effects of interest (Kitagawa 1955). Consider a thought experiment in which we could allocate students

of all race/ethnic groups evenly across schools (i.e. reduce *H* to zero). By comparing measures of exposure before and after this experiment, we could determine the contribution of racial imbalance to exposure. Further, with racial imbalance fixed at zero over time, changes in exposure would be solely attributable to changes in the racial composition of the student population. By comparing actual changes in exposure over time to those under complete racial balance, we could also determine the contribution of racial imbalance to changes in exposure. This is the intuition behind the standardizations and decompositions that follow. I eliminate racial imbalance by redistributing students among schools at various organizational levels of the school system, then reexamine measures of racial isolation and intergroup exposure under these scenarios.[5] This general process is laid out in equations 4-6.[6]

$$Q_{ml} = \frac{t_{ml}}{T_l} \tag{4}$$

$$t^*_{ms} = Q_{ml} \times t_s \tag{5}$$

$$P^*_{xy} = \sum_{s=1}^{n} \frac{t^*_{xs}}{X} \times \frac{t^*_{ys}}{t_s} \tag{6}$$

I describe the process as it applies to removing racial imbalance within public school districts nationwide, but the same process is used to eliminate imbalance at other levels. First, I use equation 4 to calculate each racial/ethnic group *m*'s share of enrollment Q_{ml} within each district *l* (i.e. district-level racial composition), where t_{ml} is group *m*'s total enrollment within a district, and T_l is that district's total overall enrollment. Second, for each school *s* that is affected under the standardization (in this case all traditional public schools), I multiply each group *m*'s share of district-level enrollment (Q_{ml}) by the school's total enrollment t_s to determine the adjusted enrollment of each group in each school t^*_{ms}, shown in equation 5. This adjusted enrollment represents the number of students of group *m* that would have attended school *s* if the district had allocated students evenly among schools with regard to race, holding school size

constant and assuming students did not leave the district. Third, I calculate the adjusted exposure of group *x* to group *y*, P^*_{xy}, by substituting the adjusted enrollment of groups *x* and *y* (t^*_{xs} and t^*_{ys}) into equation 1, as shown in equation 6. For schools that are not affected under a given scenario (in this case all private and charter schools), actual enrollments are used. To extend this process to other levels of the school system – school types, sectors, or metropolitan areas/nonmetropolitan counties – I use *l* to refer to the desired level, and repeat the procedure.

This process standardizes exposure measures by fixing racial imbalance at zero over time. Working from the bottom up in the nesting structure shown in Figure 3, I employ a series of six standardizations. Each standardization builds on its predecessor by removing racial imbalance from a higher level of the school system. In order, the standardizations remove imbalance among (1) traditional public schools within districts, (2) all traditional public schools (to eliminate racial imbalance between districts), (3) charter schools, (4) all public schools (to eliminate imbalance between traditional public and charter schools), (5) private schools, and (6) all schools in the metro area/county (to eliminate imbalance between the public and private sectors).

The order of these standardizations is not arbitrary. It is not logically possible to remove imbalance between districts while holding within-district imbalance constant, because balancing students across districts alters the composition of those districts, yielding a different population within each one (Mora and Ruiz-Castillo 2011). However, removing within-district imbalance first does not change the distribution of students across districts. I then remove between-district imbalance by balancing schools at the next highest level, as in step 2 above. This process eliminates both within- and between-district imbalances, so the difference in exposure under these two steps is attributable to the removal of between-district imbalance. The same holds for

other within- and between-unit components. Proceeding in this bottom-up fashion is appropriate given the nested structure of the school system; it also allows for the assessment of each organizational level's unique contribution to measures of exposure.

To quantify the role of distributive processes in the apparent resegregation of schools, I decompose changes in exposure into the portions driven by (a) changes in student composition and (b) changes in racial imbalance at the metro/county level. Any change in adjusted exposure in the absence of racial imbalance is attributable to changes in student composition; this compositional component is calculated as $\frac{\Delta P^*_{xy}}{\Delta P_{xy}}$, where ΔP^*_{xy} is the adjusted change in *x*-*y* exposure after removing all racial imbalance among schools within metropolitan areas/nonmetropolitan counties, and ΔP_{xy} is the actual change. The residual change – the difference between the actual and adjusted change – is attributable to changes in racial imbalance within metropolitan areas/nonmetropolitan counties. This portion is calculated as $\frac{\Delta P_{xy} - \Delta P^*_{xy}}{\Delta P_{xy}}$. It is worth noting that when the two components operate in opposite directions, one will exceed 100%, and the other will be negative. The negative contribution indicates that the component operates in the opposite direction of the overall trend. I perform these calculations for changes in several measures of exposure from 1993 to 2010.

Determining the contribution of racial imbalance to exposure at a given period of time requires that a lower bound be established on isolation, which cannot be expected to reach 0, or an upper bound on intergroup exposure, which cannot be expected to reach 1.[7] Of the total change in a measure of exposure that would result from racially balancing all schools nationally, the contribution of local imbalance to exposure is the portion achieved by racially balancing schools within metropolitan areas and nonmetropolitan counties. To give a concrete example, I use the proportion of blacks in the national student population as the lower bound on black

isolation, and the proportion of whites in the national student population as the upper bound on black-white exposure. Accordingly, the share of exposure attributed to local racial imbalance at a given time is calculated as $\frac{P_{xy}-P^*_{xy}}{P_{xy}-Q_y}$, where P_{xy} is actual *x*-*y* exposure, P^*_{xy} is adjusted *x*-*y* exposure under no within-metro/county racial imbalance, and Q_y is group *y*'s share of the national student population. The remaining share, $\frac{P^*_{xy}-Q_y}{P_{xy}-Q_y}$, is due to differences in racial composition between metropolitan areas/nonmetropolitan counties.

Finally, I decompose the contributions of metro/county-level racial imbalance to each measure of exposure (as calculated above) into the portions attributable to imbalance at each level of the school system. This is calculated as $\frac{P^{l-1}_{xy}-P^{l}_{xy}}{P_{xy}-P^*_{xy}}$, where P^{l}_{xy} and P^{l-1}_{xy} represent adjusted *x*-*y* exposure under no racial imbalance at adjacent levels *l* (e.g. within districts) and *l*-1 (e.g. between and within districts), P_{xy} is actual exposure, and P^*_{xy} is adjusted exposure under no within-metro/county racial imbalance. Of the total change in exposure that would be accomplished by racially balancing schools within metropolitan areas/nonmetropolitan counties, these components represent the unique contribution of racially balancing schools at one level of the school system. I perform these calculations for each measure of exposure for the 1993-1994, 2001-2002, and 2009-2010 school years.

These standardizations and decompositions are not intended to predict what would actually happen under each scenario. Social closure theory and white flight research both suggest that desegregation at one level would be countered by new processes of segregation at another (Clotfelter 2001; Fairlie and Resch 2002). Rather, these methods present a best-case-scenario counterfactual that provides an intuitive way to reconcile two dimensions of school segregation. They indicate the extent to which changes in and levels of racial isolation and

intergroup exposure have depended on racial imbalances at different organizational levels of the school system. They are also useful for testing the crux of the resegregation argument. If minorities have become increasingly isolated because of the rollback of desegregation policies or other distributive processes of segregation, then eliminating racial imbalance through these standardizations will eliminate the trends of increasing isolation and decreasing exposure to whites. Conversely, if minorities have become increasingly isolated because of population change, then these trends will persist in spite of these standardizations.

RESULTS

The Role of Racial Imbalance in Resegregation

Before delving into the results, it will be helpful to present a visual summary of the analysis for white isolation. Figure 4A shows the observed trend for white isolation and the adjusted trend under the series of six standardizations eliminating racial imbalance at various organizational levels (see Supplementary Figures S1-S4 for additional plots). Whites were the most isolated group from 1993 to 2010, but they also experienced significant declines in isolation. That each step in the series of standardizations (moving down the plot) further reduces isolation indicates that racial imbalances at each organizational level of the school system contributed to white isolation, and that some levels contributed more than others. The plot also reveals that both the high levels and continual declines in white isolation would have occurred even if students were allocated evenly among schools within metropolitan areas and nonmetropolitan counties. The gap between the top ("Observed") and bottom ("No Metro/County Imbal") lines shows that whites were much more isolated than they would have been in the absence of local racial imbalances, and the increasing spread of the lines over time suggests that rising imbalance may have boosted white isolation.

Table 1 presents the percent change in several measures of exposure between 1993 and 2010, and decomposes these changes into the portions attributable to changes in local racial imbalance and changes in student composition.[8] It also shows the percent change in each measure that would have occurred under two counterfactual conditions: actual changes in racial imbalance with constant composition, and actual changes in student composition with constant racial imbalance. Figure 5 illustrates the results presented in Columns 1-7. The analysis reveals that white isolation was driven downward by changes in racial composition (136.1%), but pushed upward by changes in racial imbalance within metropolitan areas/nonmetropolitan counties (-36.1%). The observed 7.9% decline was 36.1% smaller than it would have been (10.7%) in the absence of racial imbalance. Put another way, without compositional change, changes in imbalance would have increased white isolation 2.8%.

Further analyses indicate that these trends are attributable to the separation of whites from blacks and Hispanics (see Columns 8 and 9 of Table 1). Although whites' exposure to blacks increased 5.9%, this was a result of compositional change; changes in imbalance alone would have reduced white-black exposure 4.3%. Similarly, white-Hispanic exposure increased 78.6%, but changes in racial imbalance alone would have reduced it 35.5%. White exposure to Asians and American Indians also increased, but changes in imbalance played no role (Supplementary Table S1). Overall, changes in the composition of the student population led whites to become less isolated over time and more exposed to students of each minority group, but distributive processes increased racial imbalance and boosted whites' isolation by limiting their exposure to blacks and Hispanics.

Trends in minority isolation differed across groups. Black isolation fell 6.3% between 1993 and 2010, primarily because of declining racial imbalance. Hispanic isolation increased

7.6%, but this was driven by compositional change, as declining racial imbalance helped reduce their isolation as well – absent compositional change, Hispanic isolation would have decreased 4.2%. Asians were the one minority group for which increasing racial imbalance exacerbated isolation (6.3%). As was true for whites, racial imbalance boosted Asian isolation mainly by reducing their exposure to blacks and Hispanics (Supplementary Table S1). Finally, the isolation of American Indian students increased only 1.4%, a trend driven by changes in student composition, with racial imbalance operating to reduce isolation.

The extent to which minority students – blacks and Hispanics in particular – are exposed to white students in schools is especially important to the resegregation debate.[9] Figure 4B illustrates the analysis of black-white exposure between 1993 and 2010. Every step in the series of standardizations leads to increased exposure, demonstrating that racial imbalance at each level of the school system limited the exposure of blacks to whites. Results indicate that the 13.5% decline in black-white exposure was attributable to changes in student composition rather than growing imbalance. Absent compositional change, declining racial imbalance would have increased the exposure of blacks to whites 10.3% (see Table 1 and Figure 5). The same holds for Hispanic-white exposure, which dropped 14.1% despite declines in racial imbalance. Absent compositional change, declining racial imbalance would have increased Hispanics' exposure to whites 9.2%.

In sum, racial imbalance played a dual role in the apparent resegregation of American schools. On the one hand, continued declines in imbalance actually reduced the isolation of blacks, Hispanics, and American Indians, and helped increase the exposure of all minority groups to whites. This contradicts the core of the resegregation argument. On the other hand,

increasing imbalance caused Asian and white students to become more isolated and less exposed to blacks and Hispanics than they would have been given compositional changes alone.

The Dual Role of Racial Imbalance

It may seem puzzling that changes in racial imbalance could have such contradictory effects. How could changes in racial imbalance increase the exposure of blacks and Hispanics to whites, but reduce the exposure of whites to blacks and Hispanics? This is possible because unlike measures of imbalance, exposure measures are asymmetric – white-black exposure does not equal black-white exposure because the former applies to the typical white student, while the latter applies to the typical black student. Based on the properties of these measures, the findings are likely attributable to heterogeneous changes in racial imbalance. For example, imbalance could have increased in areas more populated with certain groups, or the population of certain groups could have increased in more or less imbalanced areas.

I conducted supplementary analyses to explore this possibility (see Supplementary Figures S5-S7). First, I examined the average within-metro/county imbalance (*H*) of each group from all others (white-nonwhite, black-nonblack, etc.), with averages weighted by the focal group's enrollment. These weighted averages reflect the degree to which distributional processes within metropolitan areas and nonmetropolitan counties separated the typical student of each group from other groups. According to these measures, racial imbalance declined 12% for blacks, 8% for American Indians, 4% for whites, and 3% for Hispanics, but increased 6% for Asians (Figure S5). Second, I examined the average within-metro/county imbalance of whites from each minority group (white-black, white-Hispanic, etc.), first weighted by white enrollment (Figure S6) and then by the enrollment of the minority group (Figure S7). All but two of these measures indicated declines in racial imbalance between whites and minorities. The first

exception was increasing white-Hispanic *H* when weighted by white enrollment, and the second was steady white-Asian *H* when weighted by Asian enrollment.

These results suggest that declining racial imbalance helped reduce black, American Indian, and to a lesser extent, Hispanic isolation because areas with more of these students experienced greater declines in racial imbalance. Conversely, areas with more whites experienced smaller declines in overall imbalance and the increasing separation of Hispanics from whites across schools, and areas with more Asians experienced the increasing separation of Asians from other nonwhite minorities.

The Contribution of Racial Imbalance to Exposure

Next, I examine how absolute levels of exposure have depended on racial imbalance at various organizational levels of the school system. In Figure 4A, the overall contribution of local racial imbalance to white isolation is the difference between the top ("Observed") and bottom ("No Metro/County Imbal") lines, divided by the difference between the top line and whites' share of the national student population. This represents how much closer white isolation would be to isolation under perfect racial balance nationally if local imbalances were eliminated. Each organizational level's contribution is the portion of the gap between the top and bottom lines that is attributable to the difference between any two sequential steps in the series of standardizations. These measures are plotted for the 1993-1994, 2001-2002, and 2009-2010 school years in Figures 6 and 7, respectively (results are tabulated in Supplementary Table S2).

Figure 6 illustrates the important role of local racial imbalance in maintaining racial isolation and limiting intergroup exposure. Most striking is that by 2010, imbalance within metropolitan areas and nonmetropolitan counties accounted for almost 70% of black isolation

and over 80% of the lack of black-white exposure. More concretely, eliminating local racial imbalance would have increased the share of whites in the typical black student's school from 30% to 52% in 2010 (see Figure 4B). Local racial imbalance also accounted for 50-60% of white isolation and Asian isolation. Over time, local imbalance played an increasing role in maintaining Asian isolation and limiting black-white exposure. It made lesser but still important contributions to Hispanic and American Indian isolation and Hispanic-white exposure. Hence, although changes in racial imbalance did not exacerbate minority isolation or reduce minority-white exposure, levels of imbalance continued to affect levels of isolation and exposure.

Figure 7 partitions the overall contributions of racial imbalance to exposure plotted in Figure 6 into the unique contributions of each organizational level of the school system. The most consequential component is between-district imbalance. This is especially true for white isolation, American Indian isolation, and the exposure of blacks and Hispanics to whites. All else equal, removing between-district racial imbalance alone would have increased the share of whites in the typical black student's school 13 percentage points in 2010 (see Figure 4B). Within-district imbalance played a sizable role in the maintenance of black, Hispanic, and Asian isolation, but even for these groups its influence declined over time, and for most others, removing within-district imbalance would eliminate only one fifth of the contribution of imbalance to isolation.

My data do not adequately distinguish all types of choice schools, but they do speak to the role of some forms of choice in segregation.[10] The collection of bars at the top of Figure 7 includes the role of racial imbalances between the public and private sectors, among private schools, between charter and traditional public schools, and among charter schools. These components reflect the choice to enter the private sector (between sector) and the subsequent

choice of a particular private school (among private schools), or the choice to attend a charter public school (between charter and traditional) and the subsequent choice of a particular charter school (among charter schools). Together these forms of choice account for no more than one fifth of the contribution of racial imbalance to the exposure measures presented here.

There are, however, noteworthy differences in the role of school choice across groups. Between-sector imbalance was most consequential for maintaining the isolation of whites and limiting the exposure of blacks and Hispanics to whites, while imbalance within the private sector played a large role in Asian isolation. In most cases, the combined contribution of between-sector and private sector imbalance declined slightly over time. Charter schools made a smaller but increasing contribution, as imbalances both between charter and traditional public schools and among charter schools emerged to heighten isolation and reduce intergroup exposure. Charter schools were most consequential for blacks, both in terms of maintaining their isolation and limiting their exposure to whites.

In sum, local distributive processes that generate racial imbalance continued to have a substantial impact on schools' racial composition, maintaining racial isolation and limiting the exposure of minorities to whites. The factor with the largest impact is imbalance between school districts. Within-district imbalance – the usual target of desegregation policies – plays a lesser role, and even among the groups for which it is more salient, its contribution has abated. Imbalances due to school choice, at least in the form of private and charter schools, also exacerbate isolation and limit intergroup exposure. Given that most students still attend traditional public schools, however, the role of racial imbalance via these forms of choice is minor. The biggest barrier to reducing racial isolation and increasing intergroup exposure is racial imbalance between school districts in the same metropolitan area/nonmetropolitan county.

DISCUSSION

Over two decades ago, Massey and Denton (1988:282) characterized segregation as a multidimensional phenomenon, bringing order to a field that was "in a state of theoretical and methodological disarray." Yet disarray has resurfaced, with two dimensions of school segregation producing clashing perspectives on recent developments: minority students have become increasingly isolated and less exposed to whites, but whites and minorities have become more evenly distributed across schools. Theorizing school segregation as a mode of social closure provides a way forward by describing how these dimensions are linked together. Exclusionary processes of segregation in the midst of group competition lead to the uneven distribution of race/ethnic groups and resources across schools, generating racial imbalance, which in turn heightens racial isolation and reduces intergroup exposure. Isolation and exposure, however, are also affected by changes in the composition of the student population that are not exclusionary and that are beyond the scope of desegregation policies. I used a series of standardizations and decompositions to disentangle the contributions of distributive processes and compositional changes to the apparent resegregation of schools from 1993 to 2010. The analysis revealed that the declining presence of whites in minorities' schools has been largely driven by changes in the racial composition of the student population rather than its distribution across schools.

These findings contradict the core of the resegregation argument – that is, that a rollback of desegregation efforts exacerbated processes of segregation, further isolating minority students and reducing their exposure to whites. On the whole, distributive processes of segregation continued to diminish: declines in racial imbalance actually reduced the isolation of blacks, Hispanics, and American Indians, and increased the exposure of all minority groups to whites

over the past two decades. The disconcerting trends in minority isolation and minority-white exposure were driven by population changes that do not constitute exclusionary processes of segregation.

The story is complicated, however, by the finding that increasing imbalance heightened the isolation of Asian and white students by limiting their exposure to blacks and Hispanics. These discrepancies are explained by heterogeneous changes in racial imbalance. Specifically, metropolitan areas and nonmetropolitan counties with more whites and Asians – the two most advantaged race/ethnic groups in terms of educational outcomes – did not experience the declines in racial imbalance documented in the overall population. In these areas, whites and Asians became more separated from students of disadvantaged minority groups. These findings are compelling from a social closure perspective. Blacks and Hispanics were increasingly excluded in areas with higher concentrations of whites and Asians, but less excluded in areas where they themselves had a greater presence. Perhaps disadvantaged groups were more capable of resisting exclusionary processes of segregation where they had a greater presence or political influence.

Though there was no widespread increase in racial imbalance, it continues to play a significant role in maintaining racial isolation and limiting intergroup exposure, especially for black students. That local distributive processes contribute so greatly to the racial composition of schools suggests much more could be done to address school segregation. Understanding the scale of these processes is critical, however. After decades of growing racial imbalance between school districts and decreasing imbalance within them (Clotfelter 1999; Reardon et al. 2000; Logan et al. 2008), my findings show that between-district imbalance is most consequential to the racial composition of schools – especially the presence of whites in minorities' schools –

while within-district imbalance plays a smaller and declining role. This suggests that although recent court decisions have allowed particular school districts to resegregate (An and Gamoran 2009; Reardon et al. 2012), district-level desegregation has continued across most of the nation.

Despite the success of district-level policies, my findings show that we are approaching the point of diminishing returns to such efforts. To have a significant impact on minority isolation and minority-white exposure in the current context, policies must target processes that produce between-district imbalance. Of the much-maligned court decisions, the major culprit in persisting school segregation is *Milliken v. Bradley* (1974), which limited interdistrict desegregation plans almost four decades ago. Given this legal precedent, our decentralized education system, and that much between-district imbalance is driven by large-scale residential segregation (Reardon et al. 2000), these efforts face severe challenges. Researchers and policymakers should consider how school district boundaries are drawn and altered over time, and examine ways to weaken the link between residence and school assignment.

One means to weaken this link that is unlikely to be effective is the expansion of choice via private and charter schools, both of which increase racial isolation and reduce intergroup exposure. In the 2000s, the private sector's contribution declined, as there were fewer private schools and fewer students attending them (see Supplementary Table S3). Meanwhile, the contribution of charter schools grew as they became more prevalent. Charter schools were especially consequential in isolating black students and limiting their exposure to whites. This accords with evidence that blacks are more likely than others to exercise school choice (Grady and Bielick 2010), and that charter schools exacerbate racial segregation (Renzulli and Evans 2005; Bifulco and Ladd 2007; Garcia 2008).

Given the difficulty of reducing between-district racial imbalance and the evidence that school choice promotes segregation, efforts must also aim to improve struggling schools in spite of racial isolation. Researchers should explore the mechanisms by which segregation promotes educational inequality and find ways to intervene. The field has focused almost exclusively on the association between school racial composition and student outcomes, implying that segregation effects operate through compositional factors such as peer influence. The corresponding policy solution is to redistribute students across schools, a strategy that is limited by the increasing scale of segregation, a lack of political will, and the growing share of minorities in the population.

Social closure theory suggests that segregation effects also operate through the uneven distribution of students and resources to schools. Despite decades of research on resource effects, few studies actually link the distribution of resources to the distribution of students at a local level, and those that do support a relationship between segregation and inequality (Condron and Roscigno 2003; Clotfelter et al. 2005). Though this study focused on segregation between schools, racialized tracking and the unequal distribution of resources across classrooms also promotes inequality (Mickelson 2001), pointing to exclusionary closure within schools. This perspective suggests an additional policy solution: equalize the distribution of resources to break the link between segregation and inequality. Given the increasing scale of segregation, these efforts would need to be carried out between districts as well as within districts and schools. Nonetheless, such a strategy could weaken the competition that drives segregation in the first place. These are promising but untested hypotheses worthy of further exploration.

The standardizations and decompositions used in this study have enabled some important contributions, but they come with caveats and limitations. Obviously, they cannot predict the

effects of actual desegregation efforts, as desegregation at one level would undoubtedly lead to resorting and shuffling of students that would alter segregation at other levels. Complex modeling of these sorting processes will be required to undertake more realistic simulations, presenting a difficult but important task for future research. Decomposing changes in exposure into one component attributable to imbalance and another attributable to compositional change also relies on *ceteris paribus* assumptions and does not justify causal claims. Furthermore, the portion of change attributed to racial imbalance in these analyses reflects the entire constellation of policies and behaviors that distribute students unevenly across schools, leaving closer examination of specific factors – such as residential segregation, school choice, and school assignment policies – to future work. Finally, this study focuses on the role of local racial imbalance in national-level exposure, recognizing that there is variation across metropolitan areas, counties, and states that remains to be explored.

Clearly, more can be done to address school segregation, but there is much more that we need to know first. The field has devoted a great deal of attention to measuring segregation and describing how students are distributed across schools, but has neglected to develop a basic theory that can explain why students are segregated, how this promotes inequality, or how to reconcile the different dimensions of segregation. The social closure theory advanced here hopes to inspire further insights and presents important hypotheses for researchers to evaluate. To test these hypotheses and better inform policy, we must attend to multiple dimensions of school segregation and seek to understand the mechanisms underlying this source of inequality.

ENDNOTES

[1] Exposure measures indicate the racial composition of the school attended by the average student of a given race/ethnic group. Both racial isolation and intergroup exposure are measures of exposure; isolation is simply a group's exposure to itself.

[2] I use the 5 groups classified in the CCD and PSS data: American Indians, Asians, blacks, Hispanics, and whites. Multiracial children are reported in some states in 2009-2010, but they are dropped from analyses since they represent only 0.9% of the student population and are not reported for all states.

[3] To ensure that changes over time are not confounded with changing metropolitan boundaries, I match counties to 2010 Census-defined Combined Statistical Area (CSA) boundaries for all years.

[4] American Indian measures were erratic, likely due to reporting issues. The Bureau of Indian Education (BIE) did not report schools to the CCD in 2007-2008. I imputed 2008-2009 values in this case, but trends were still unstable over time.

[5] The same strategy would minimize any measure of racial imbalance (e.g. Dissimilarity), but *H* is discussed here because it refers to multi-group segregation. This ensures that no two groups will be desegregated at the expense of others.

[6] The code used to execute these standardizations in Stata is provided in the online supplement.

[7] Black isolation of 0 implies that the average black student attends a school with no blacks, and black-white exposure of 1 implies that the average black student attends a school that is all white – both impossible.

[8] Changes in composition capture both gross changes in the racial composition of the national student population, and changes in the distribution of this population among metropolitan areas/nonmetropolitan counties.

[9] Results for exposure measures for other groups are provided in Supplementary Table S1. Patterns for Asian-white and American Indian-white exposure are practically identical to those presented for blacks and Hispanics.

[10] I classify magnet schools and open-enrollment public schools as traditional public schools. Open-enrollment public schools are not distinguished in CCD data, and reporting on magnet schools was inconsistent across states and over time.

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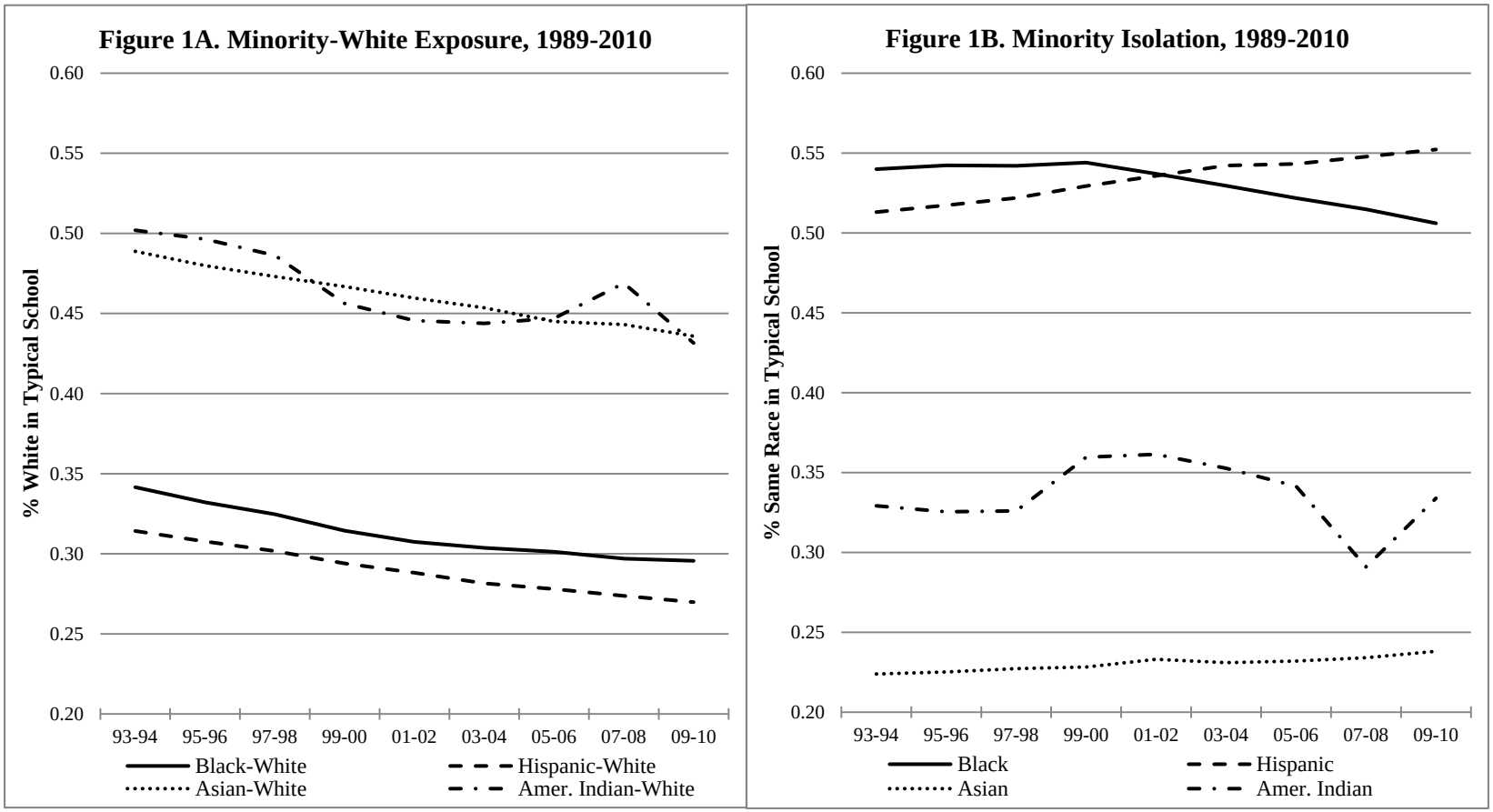


Figure 1. Resegregation Evidence, 1993-2010. Note: based on author's calculations using Common Core of Data public school data and Private School Survey data from 1993-2010. Exposure and Isolation multiplied by 100 percent to represent the percent white (exposure) and percent same-race peers (isolation) in the school of the average minority student.

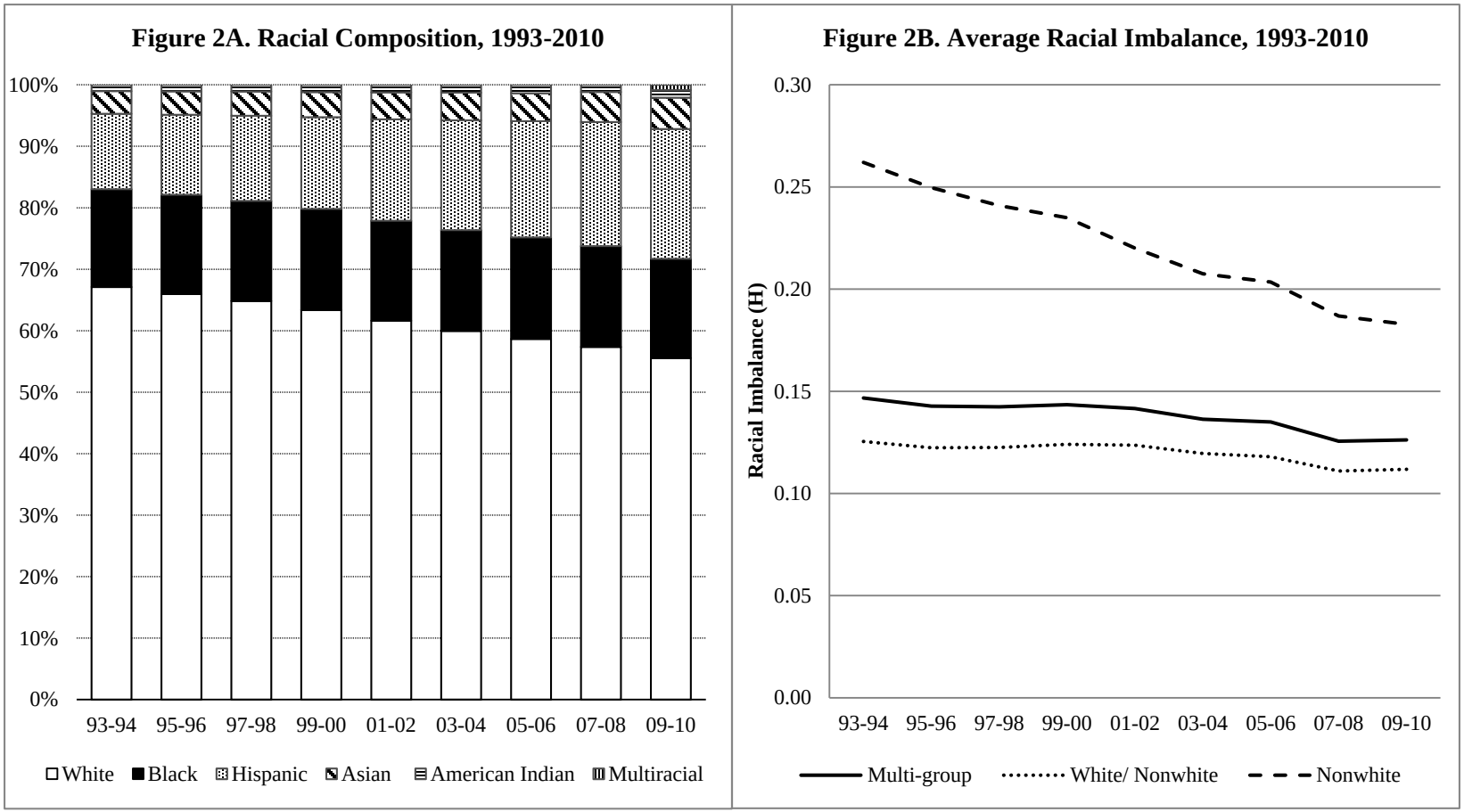
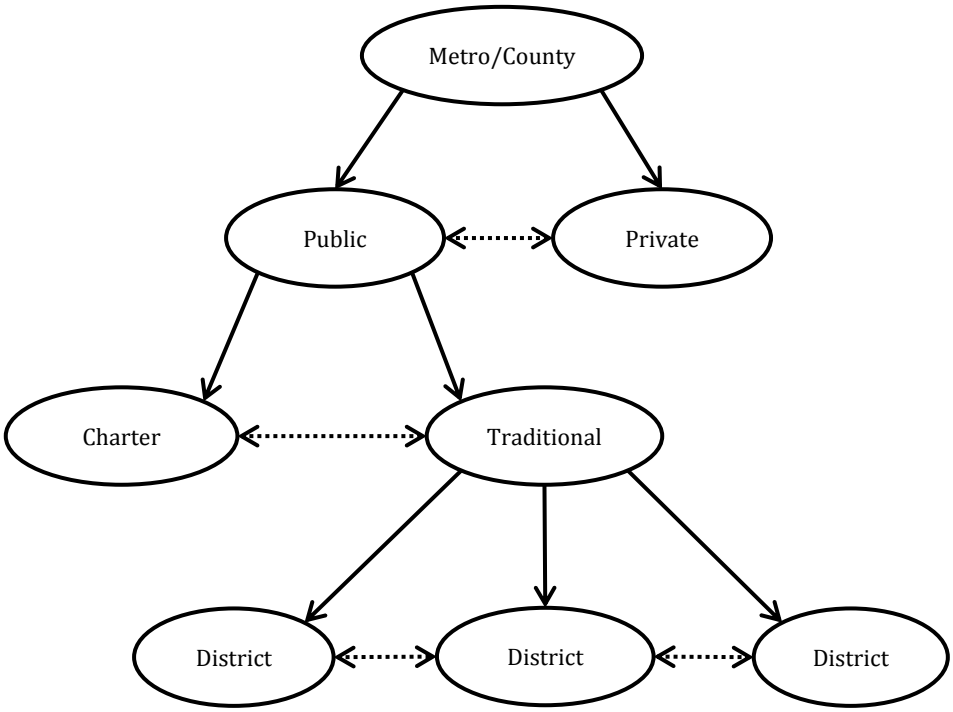


Figure 2. Evidence Contradictory to Resegregation, 1993-2010. Note: author's calculations using Common Core of Data public school data and Private School Survey data. Racial imbalance (H) is averaged across metropolitan areas/nonmetropolitan counties defined by 2010 CSA boundaries. Multigroup refers to imbalance among whites, blacks, Hispanics, Asians, and American Indians simultaneously; White/Nonwhite refers to imbalance between whites and nonwhites; Nonwhite refers to imbalance among blacks, Hispanics, Asians, and American Indians.

Figure 3. Nesting Structure of School System



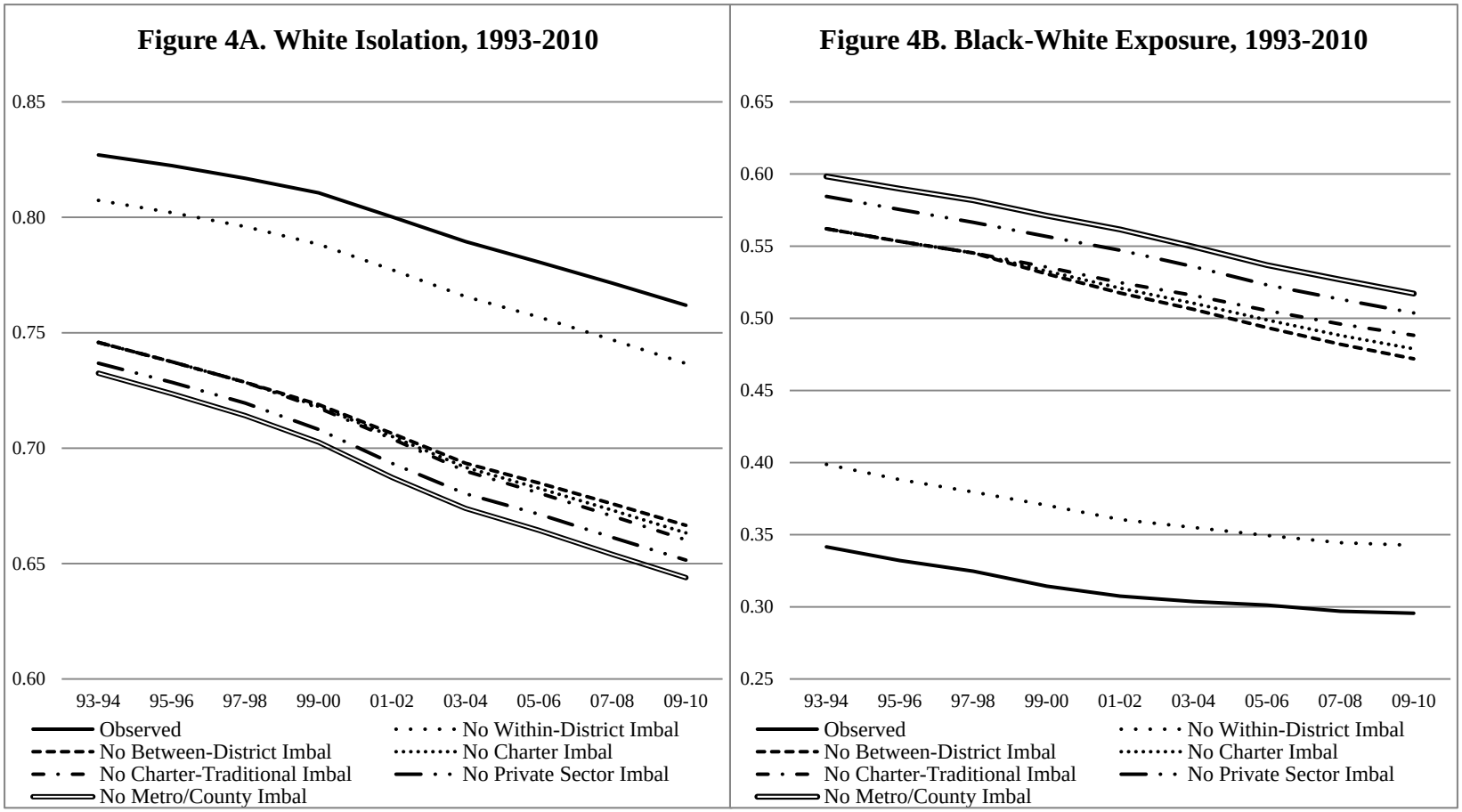


Figure 4. Standardization Trend Plots.

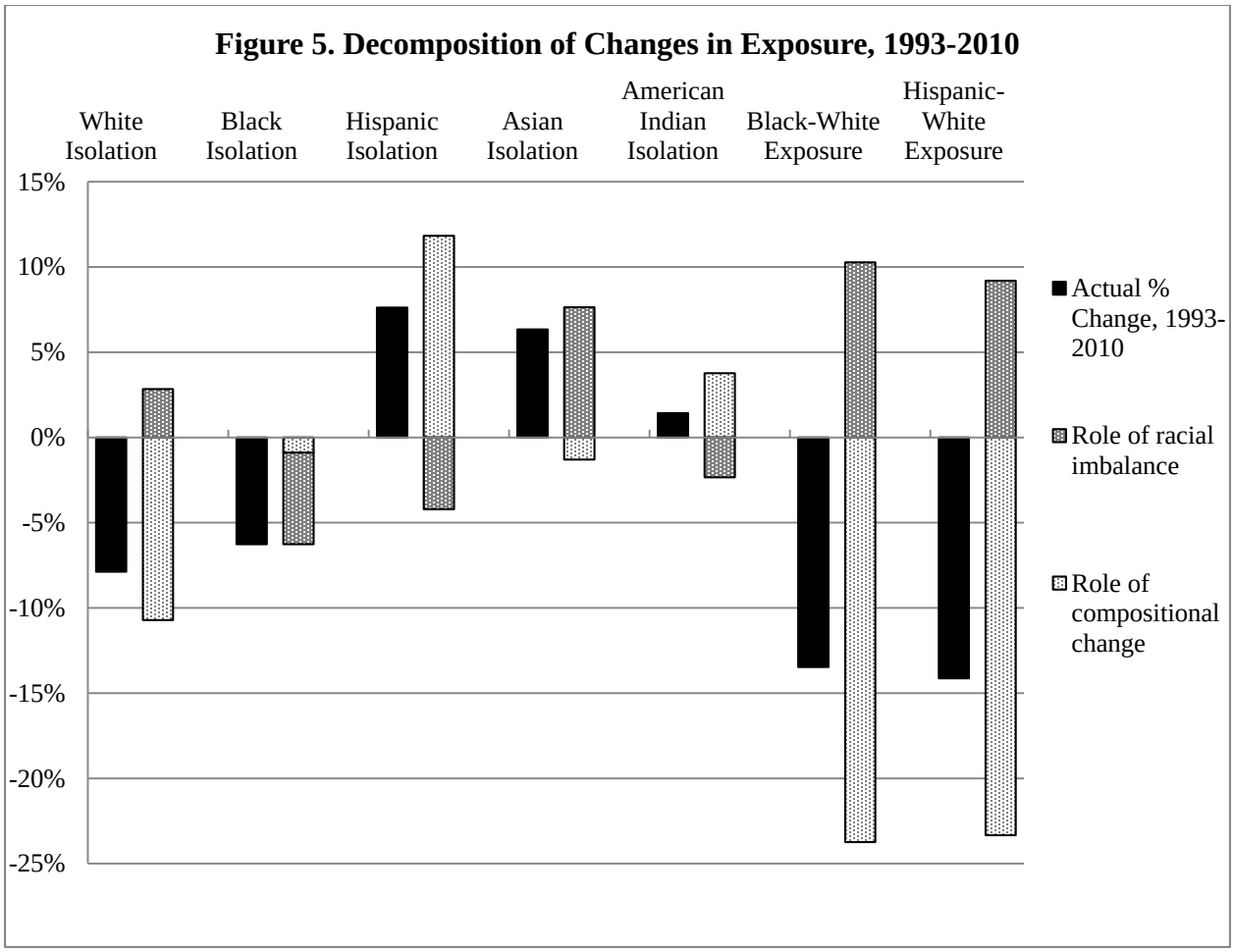


Figure 5. Decomposition of Changes in Isolation and Exposure, 1993 to 2010. Note: components (stacked bars) reflect the change that would have occurred given the actual change in one component, holding the other constant. They sum to the actual change.

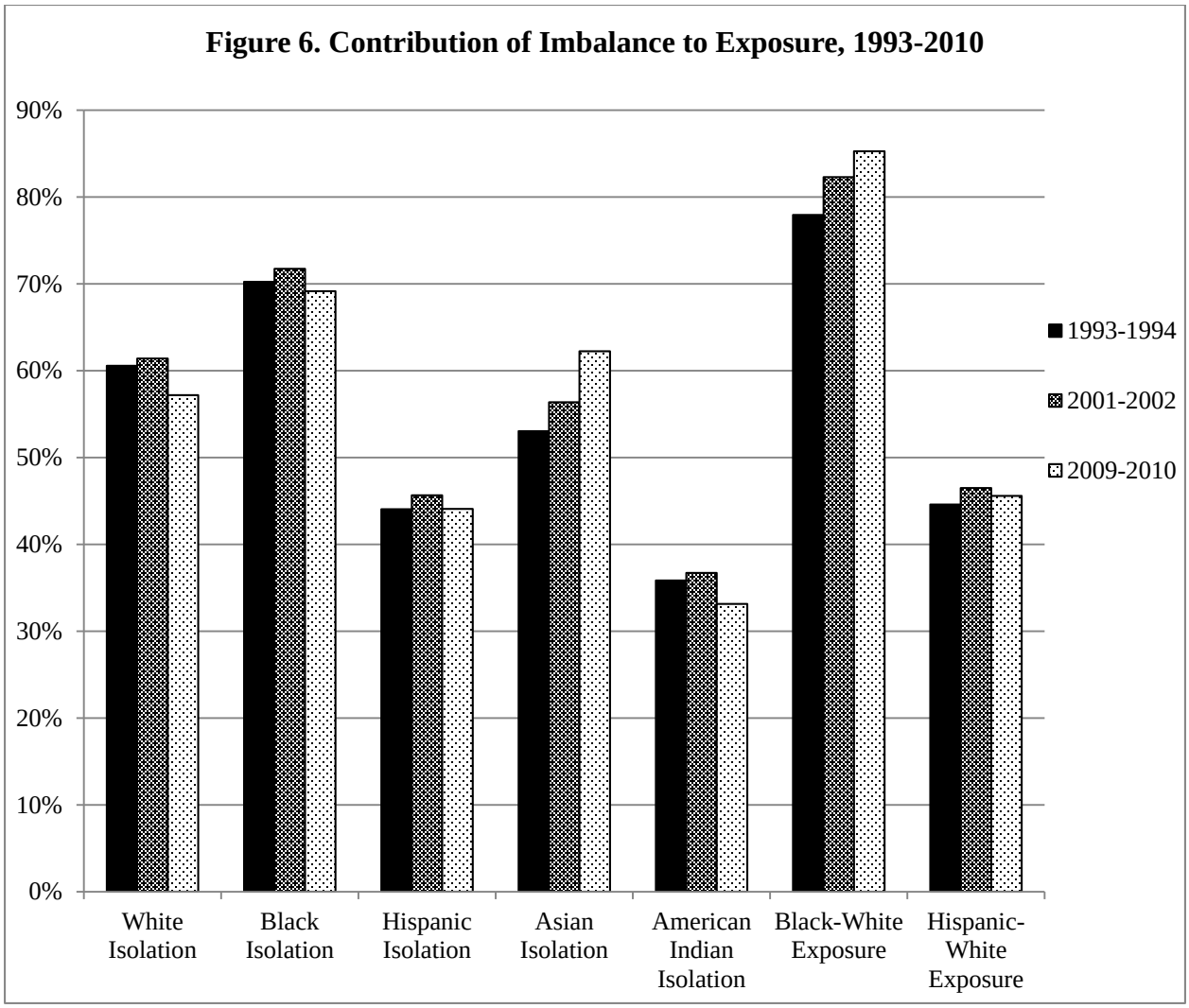


Figure 6. Contribution of Imbalance to Isolation and Exposure, 1993 to 2010. Note: contribution reflects the percent departure from perfect racial balance nationally due to racial imbalance within metropolitan areas/nonmetropolitan counties.

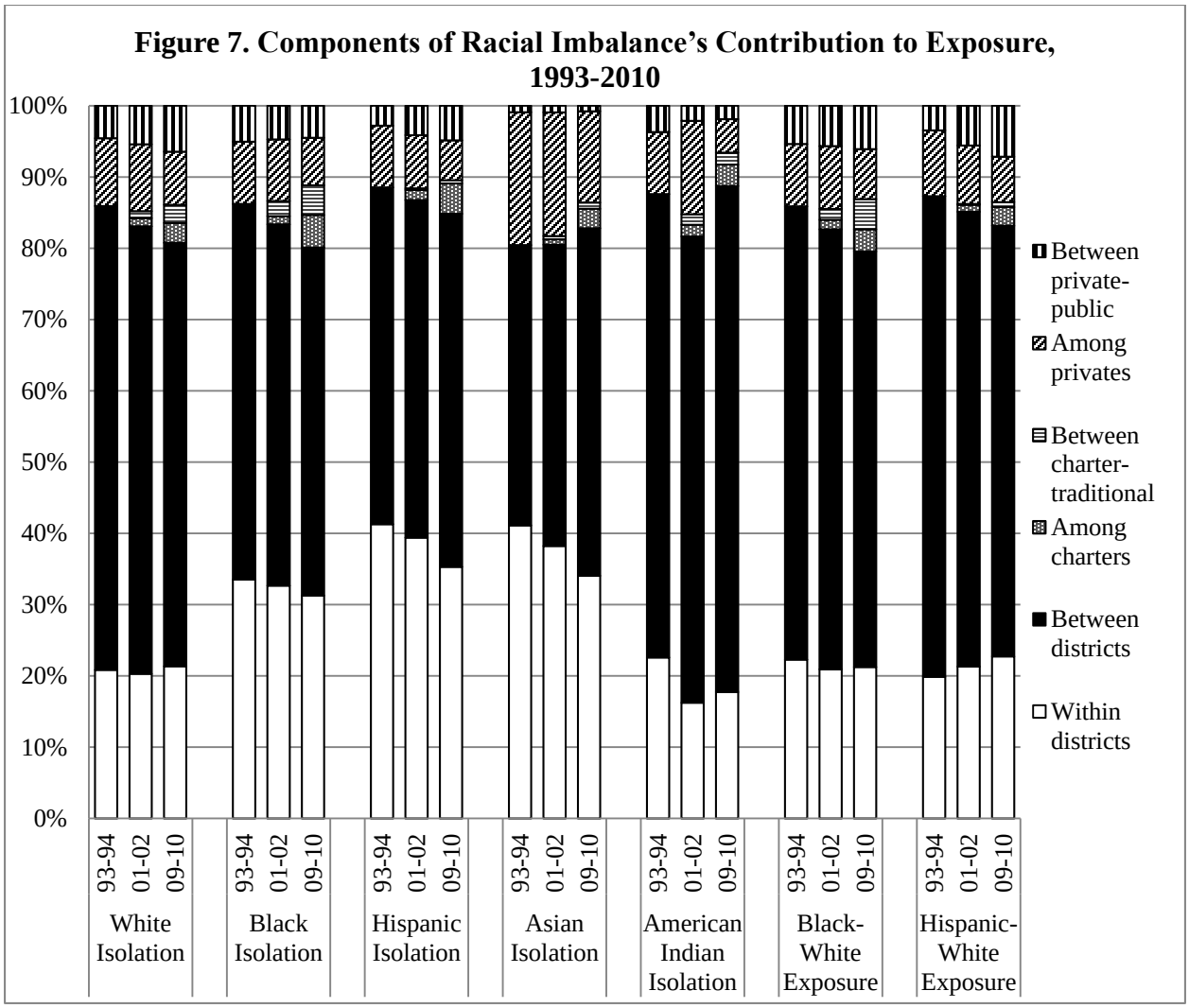


Figure 7. Components of Racial Imbalance's Contribution to Isolation and Exposure, 1993 to 2010. Note: this figure decomposes the contribution of racial imbalance to isolation/exposure (shown in Figure 6) into the portions due to imbalance at each organizational level of the school system.

Table 1. Decomposition of Changes in Exposure, 1993-2010

	Isolation					*Exposure*			
	White (1)	Black (2)	Hisp. (3)	Asian (4)	Amer. Indian (5)	Black-White (6)	Hisp.-White (7)	White-Black (8)	White-Hisp. (9)
% Change, 1993-2010	-7.9	-6.3	7.6	6.3	1.4	-13.5	-14.1	5.9	78.6
% Due to change in racial imbalance	-36.1	85.8	-55.2	120.4	-163.8	-76.3	-65.1	-72.9	-45.2
% Due to compositional change	136.1	14.2	155.2	-20.4	263.8	176.3	165.1	172.9	145.2
% Change, racial imbalance change alone	2.8	-5.4	-4.2	7.6	-2.3	10.3	9.2	-4.3	-35.5
% Change, composition change alone	-10.7	-0.9	11.8	-1.3	3.8	-23.7	-23.3	10.2	114.1

Notes: Calculations based on simulations removing all racial imbalance within metropolitan areas/nonmetropolitan counties.

Bottom two rows sum to actual change; calculated by multiplying actual change (row 1) by rows 2 and 3, respectively. Rows 2 and 3 sum to 100%.

APPENDIX

Table A1. Missing Data, by State

	Public Schools	Private Schools
89-90	GA, ID, ME, MO, VA, WY, MT, SD	All
91-92	GA, ID, ME, VA, SD	All
93-94	ID	--
95-96	ID	--
97-98	ID	--
99-00	ID*	--
01-02	TN	--
03-04	TN	--
05-06	--	--
07-08	--	--
09-10	--	--

*TN data were missing for 99-00, but '98-99 values were imputed

*BIE data missing for 07-08, but 08-09 data were imputed

SUPPLEMENT

Figure S1. Black Isolation, 1989-2010

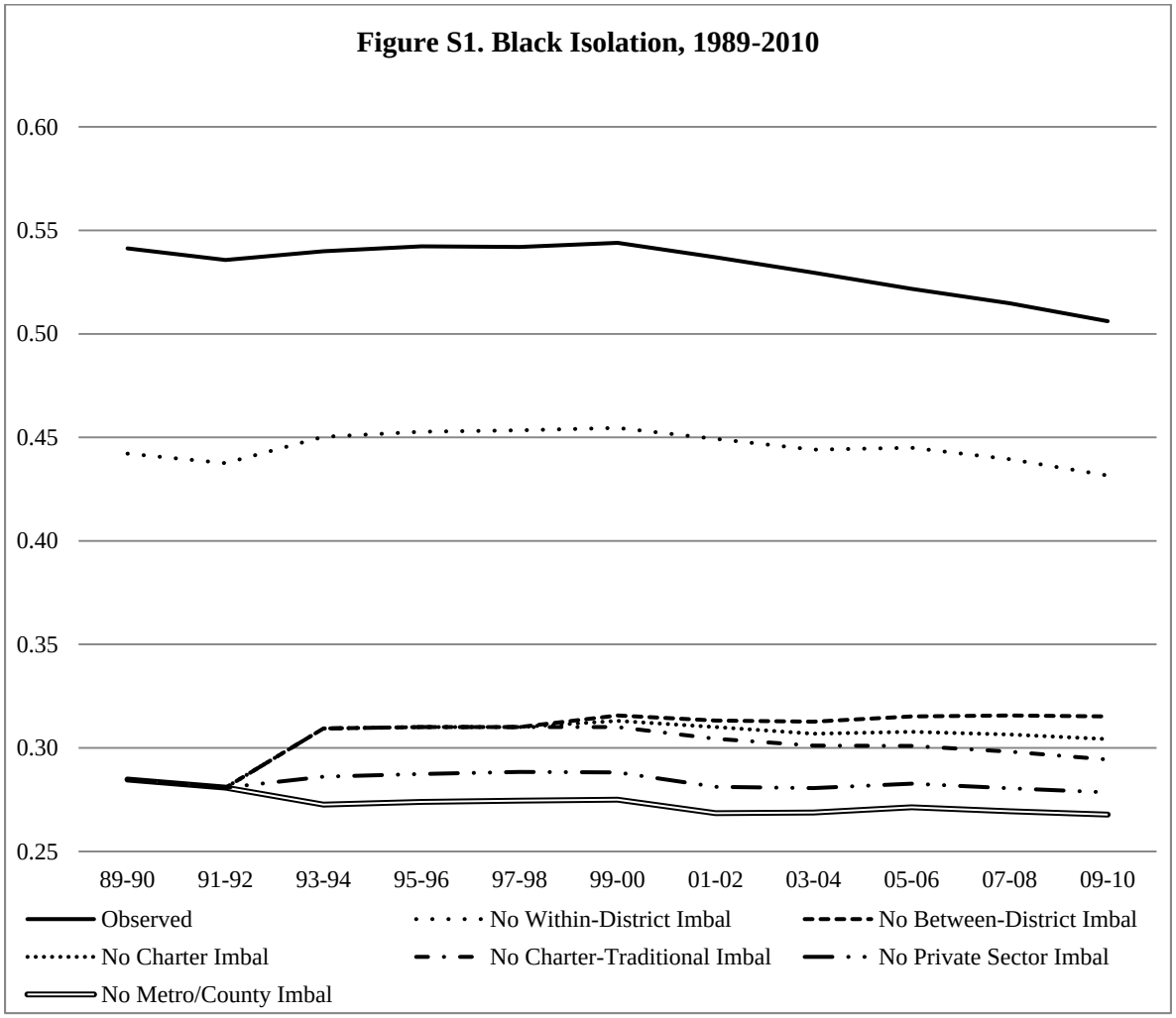


Figure S2. Hispanic Isolation, 1989-2010

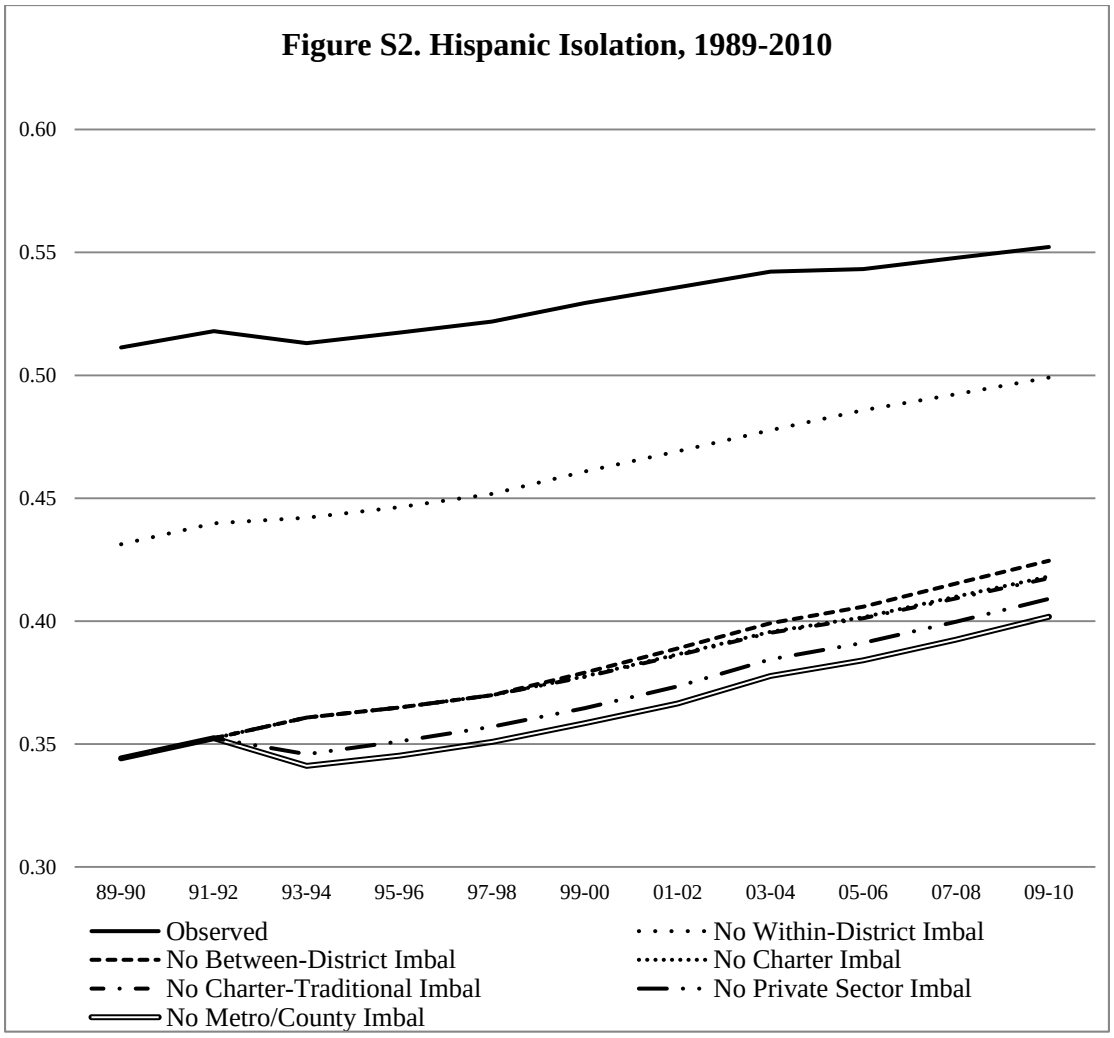


Figure S3. Hispanic-White Exposure, 1989-2010

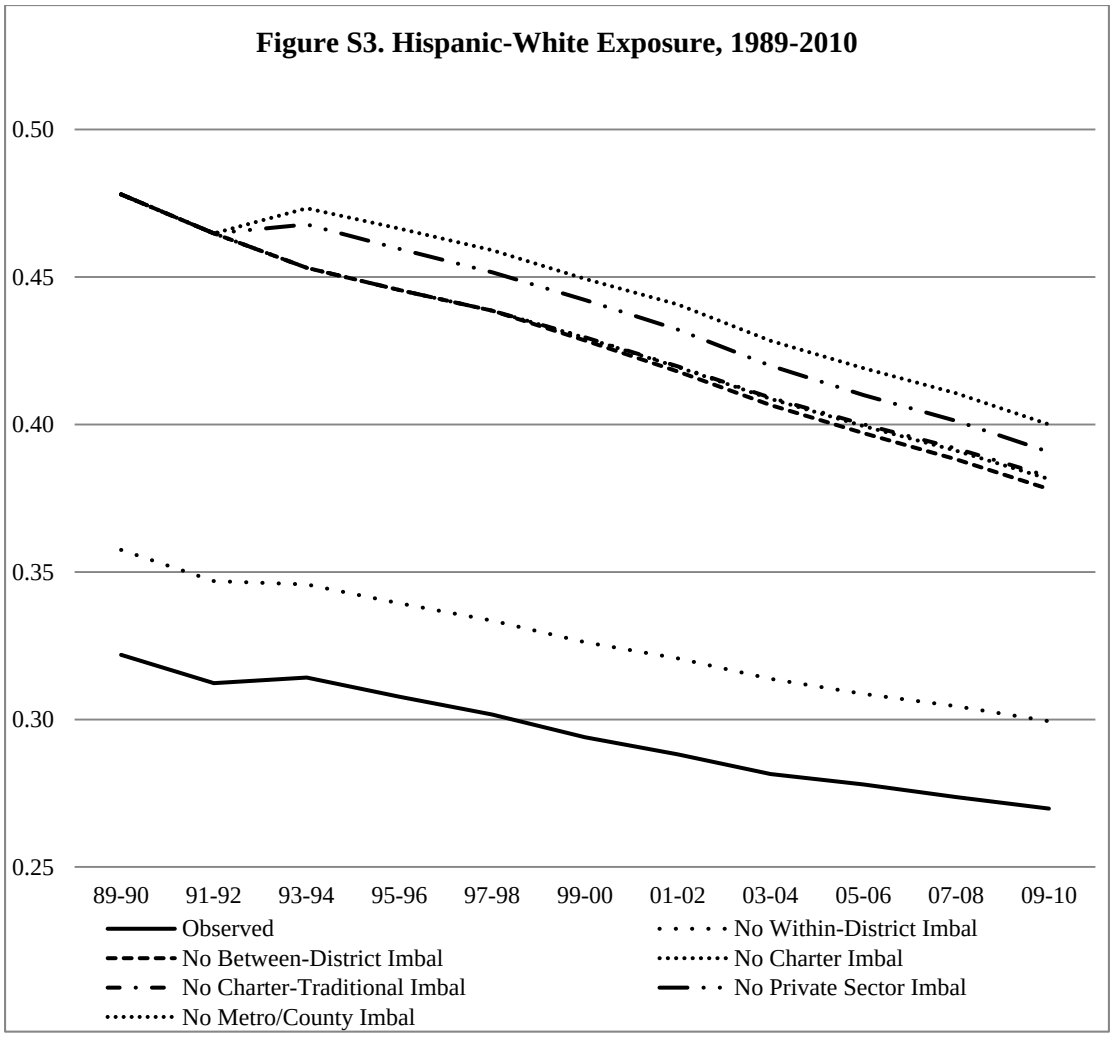


Figure S4. Asian Isolation, 1989-2010

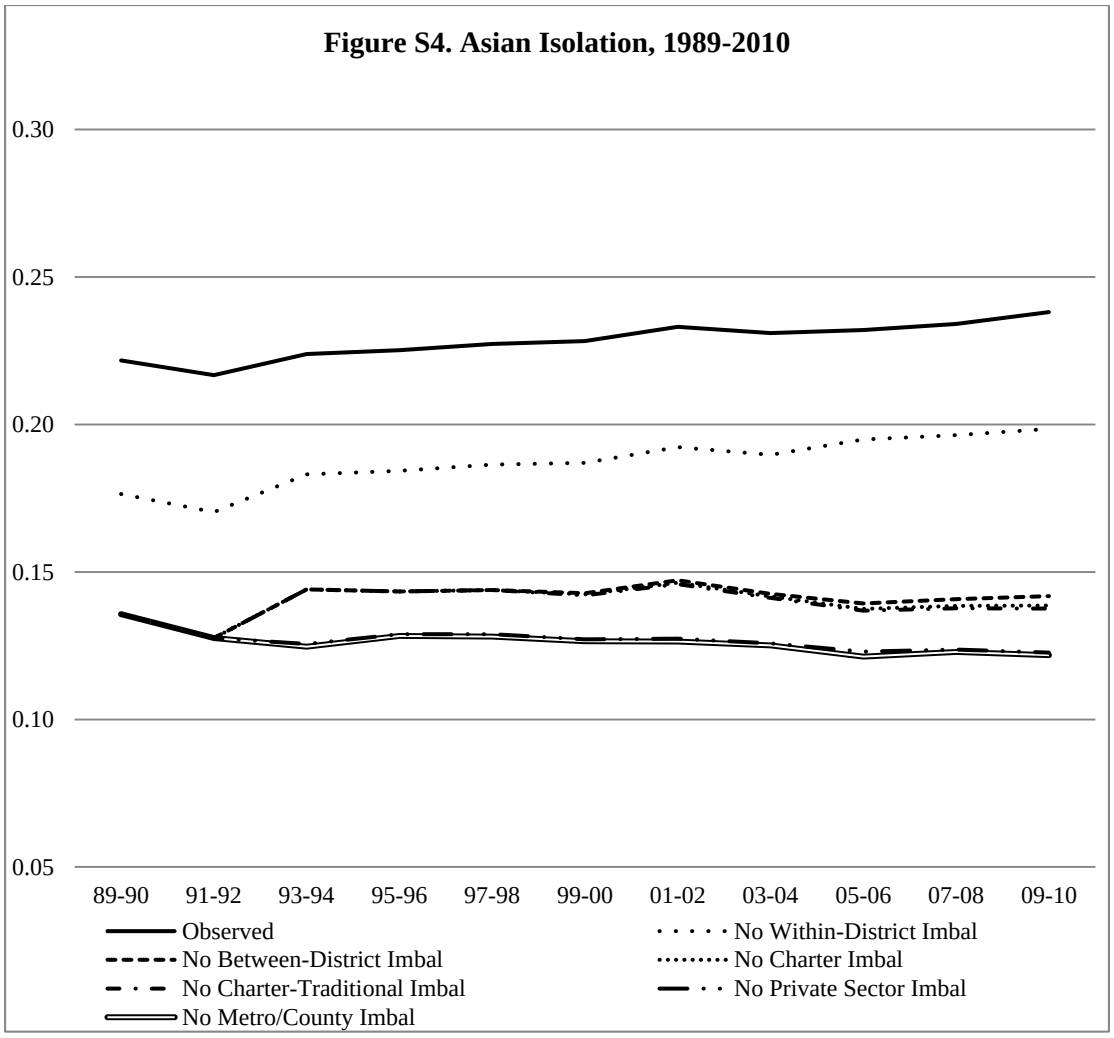


Figure S5. Racial Imbalance within Metropolitan Areas/Nonmetropolitan Counties, Weighted by Focal Group

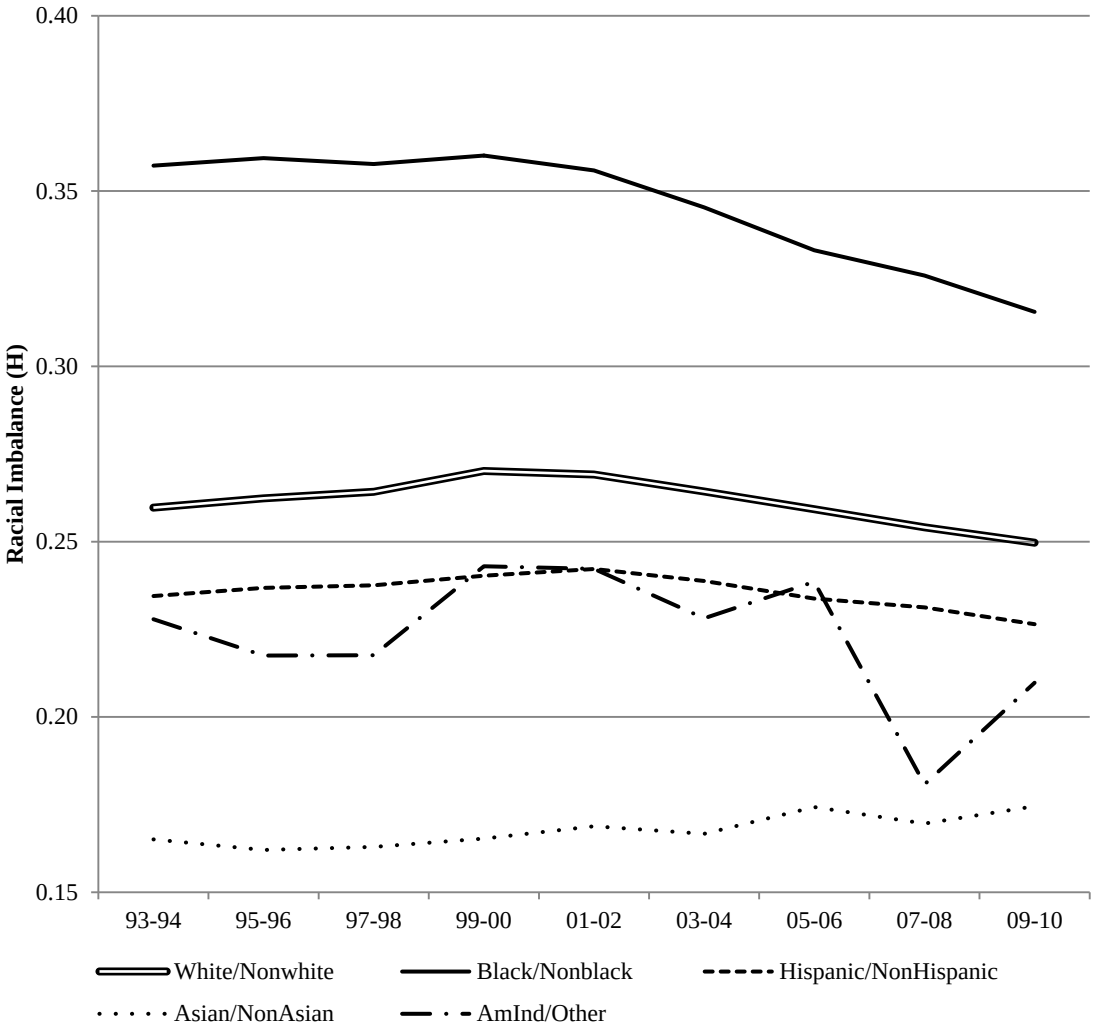


Figure S6. White-Nonwhite Imbalance, Weighted by White Enrollment

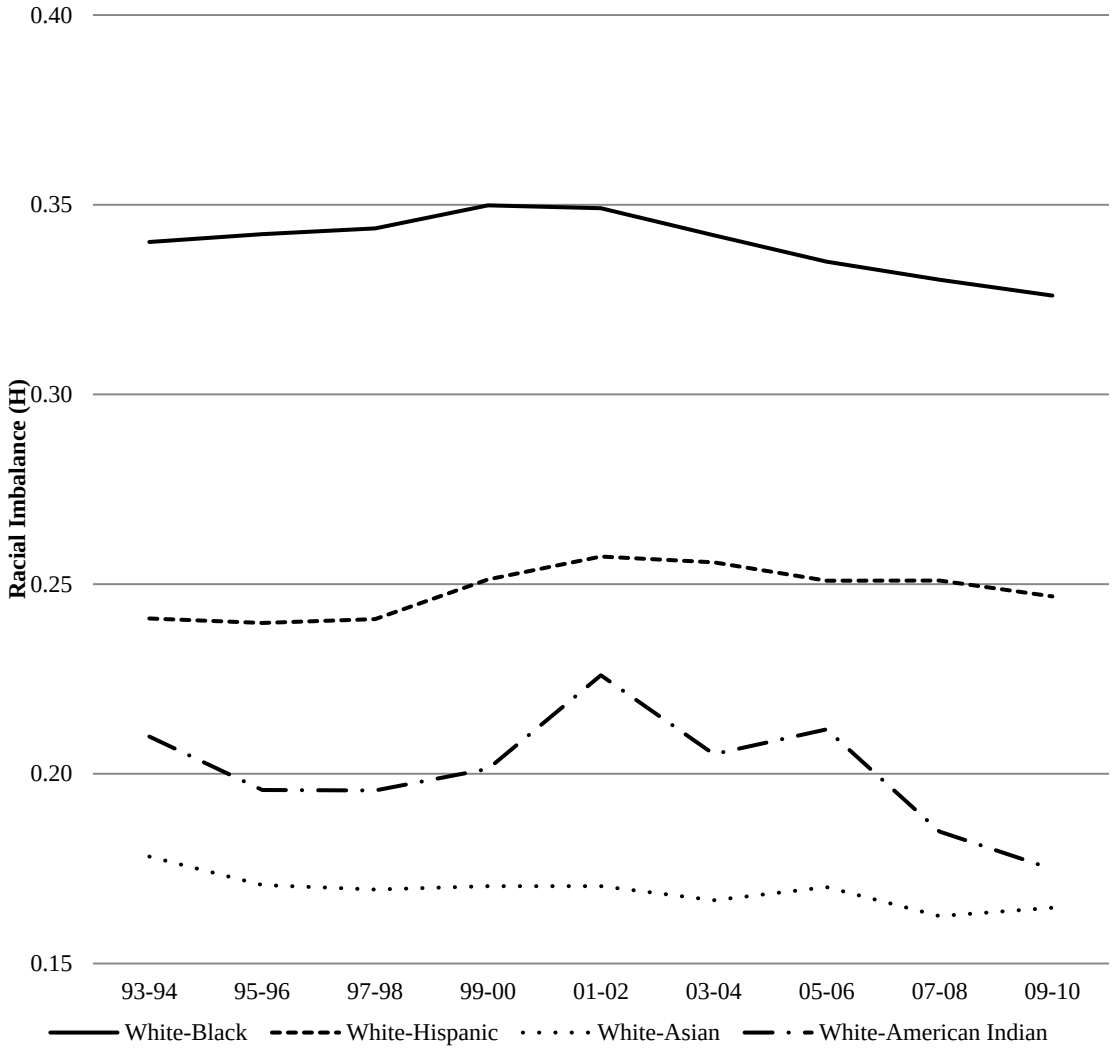


Figure S7. White-Nonwhite Imbalance, Weighted by Minority Enrollment

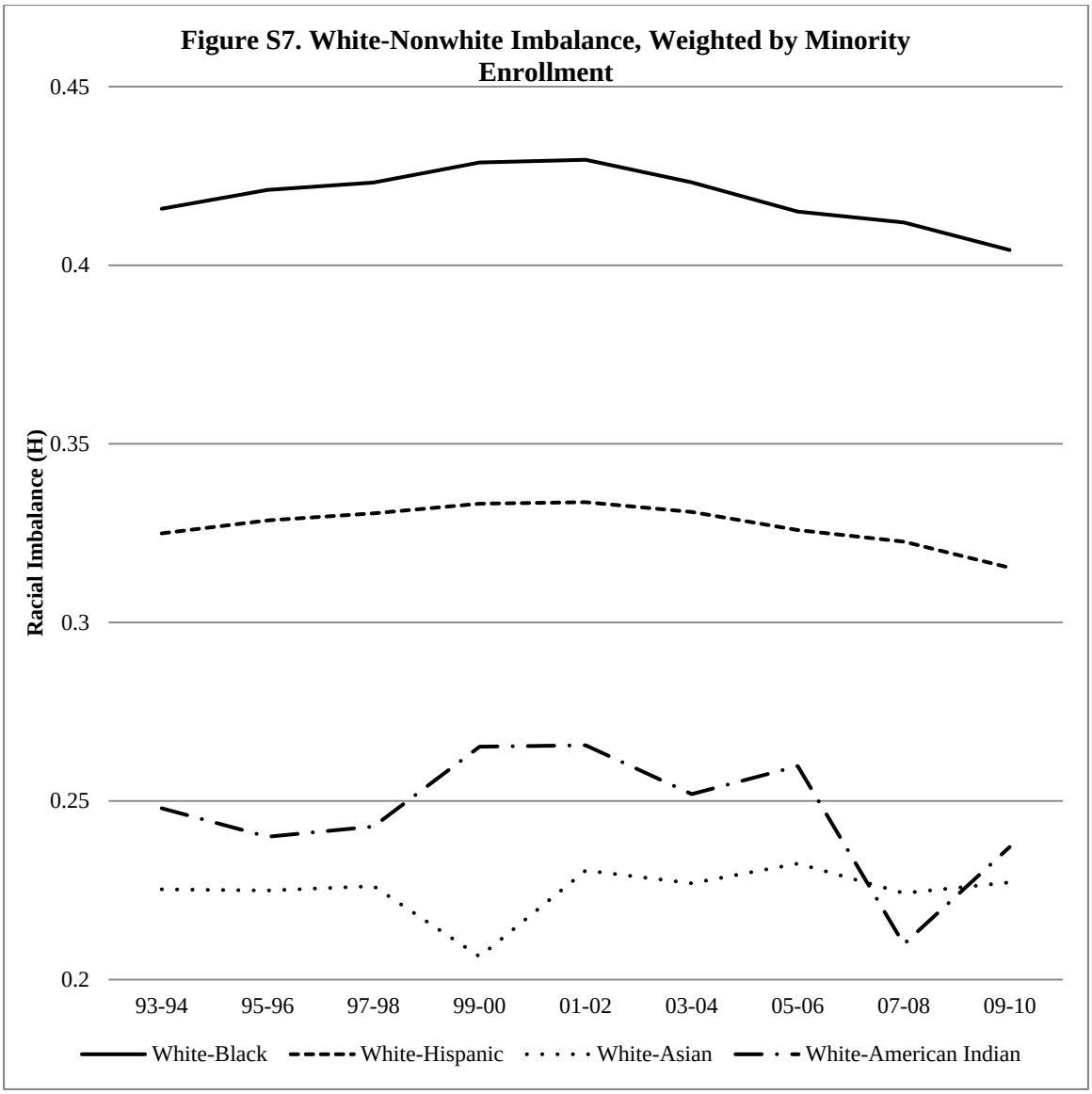


Table S1. Decomposition of Changes in Intergroup Exposure, 1993-2010

	Black-White (1)	Hisp.-White (2)	Asian-White (3)	AmInd-White (4)	White-Black (5)	White-Hisp (6)	White-Asian (7)	White-AmInd (8)	Asian-Black (9)	Asian-Hisp (10)
% Change, 1993-2010	-13.5	-14.1	-10.8	-14.0	5.9	78.6	50.0	23.4	0.7	22.3
% Due to change in racial imbalance	-76.3	-65.1	-53.2	-37.1	-72.9	-45.2	4.5	-5.6	-937.5	-98.7
% Due to compositional change	176.3	165.1	153.2	137.1	172.9	145.2	95.5	105.6	1037.5	198.7
% Change, racial imbalance change alone	10.3	9.2	5.8	5.2	-4.3	-35.5	2.2	-1.3	-6.7	-22.0
% Change, composition change alone	-23.7	-23.3	-16.6	-19.2	10.2	114.1	47.8	24.7	7.4	44.3

Notes: Calculations based on standardizations removing all racial imbalance within metropolitan areas/nonmetropolitan counties.

Bottom two rows sum to actual change; calculated by multiplying actual change (row 1) by rows 2 and 3, respectively. Rows 2 and 3 sum to 100%.

Table S2. Contribution of Imbalance to Exposure, Overall and by Organizational Level

	White Isolation (1)	Black Isolation (2)	Hispanic Isolation (3)	Asian Isolation (4)	American Indian Isolation (5)	Black-White Exposure (6)	Hispanic-White Exposure (7)
% Due to Imbalance, 1993-1994	*60.6%*	*70.2%*	*44.0%*	*53.0%*	*35.8%*	*77.9%*	*44.6%*
A. Within district share	20.8%	33.5%	41.3%	41.1%	22.6%	22.3%	19.9%
B. Between district share	65.1%	52.7%	47.3%	39.3%	65.1%	63.6%	67.4%
C. Among charter share	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
D. Between charter-traditional share	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
E. Among private share	9.5%	8.7%	8.7%	18.6%	8.7%	8.7%	9.2%
F. Between private-public share	4.6%	5.1%	2.8%	0.9%	3.7%	5.4%	3.5%
% Due to Imbalance, 2001-2002	*61.4%*	*71.7%*	*45.6%*	*56.4%*	*36.7%*	*82.3%*	*46.5%*
A. Within district share	20.3%	32.7%	39.4%	38.2%	16.2%	20.9%	21.3%
B. Between district share	62.8%	50.7%	47.4%	42.3%	65.4%	61.7%	63.8%
C. Among charter share	1.2%	1.2%	1.4%	0.7%	1.6%	1.3%	1.0%
D. Between charter-traditional share	1.0%	2.1%	0.2%	0.5%	1.5%	1.5%	0.1%
E. Among private share	9.4%	8.6%	7.4%	17.3%	13.1%	8.8%	8.2%
F. Between private-public share	5.4%	4.7%	4.1%	0.9%	2.1%	5.7%	5.6%
% Due to Imbalance, 2009-2010	*57.2%*	*69.2%*	*44.1%*	*62.2%*	*33.1%*	*85.3%*	*45.6%*
A. Within district share	21.4%	31.3%	35.3%	34.0%	17.7%	21.3%	22.7%
B. Between district share	59.4%	48.8%	49.5%	48.8%	71.0%	58.3%	60.4%
C. Among charter share	2.8%	4.6%	4.3%	2.8%	3.0%	3.1%	2.6%
D. Between charter-traditional share	2.5%	4.2%	0.5%	0.9%	1.7%	4.2%	0.7%
E. Among private share	7.5%	6.7%	5.6%	12.8%	4.7%	7.0%	6.4%
F. Between private-public share	6.4%	4.5%	4.9%	0.8%	1.9%	6.1%	7.1%

Notes: Italicized is the total contribution of within-metro/county imbalance to each measure, calculated relative to the removal of all imbalance nationally. The remainder is attributable to compositional differences across cities/counties.

Rows A-F represent each organizational level's share of the total contribution of imbalance to each measure, and sum to 100%.

Table S3. School Types, 1989-2010

	Trad. Public		Charter		Private	
	Schools	*% Enrolled*	*Schools*	*% Enrolled*	*Schools*	*% Enrolled*
89-90	73,034	--	--	--	--	--
91-92	76,867	--	--	--	--	--
93-94	82,480	90.5%	--	--	26,361	9.5%
95-96	83,907	90.4%	--	--	28,514	9.6%
97-98	86,226	90.4%	--	--	29,988	9.6%
99-00	86,989	90.0%	1,444	0.7%	28,942	9.4%
01-02	87,087	89.1%	2,202	1.1%	30,596	9.8%
03-04	87,770	89.4%	2,907	1.5%	29,860	9.1%
05-06	89,641	89.4%	3,673	1.9%	29,567	8.8%
07-08	89,713	89.2%	4,266	2.4%	28,279	8.4%
09-10	89,703	88.9%	4,866	3.0%	28,007	8.1%

Note: Calculations based on CCD and PSS data. Private school data missing for 89-90 and 91-92. Charter schools were rare and unreported prior to 99-00.