White-Latino Residential Segregation in New Destinations: Trends for Metropolitan, Micropolitan, and Non-Micropolitan Areas, 1990-2010*

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Abstract

Our study examines trends and patterns in White-Latino residential segregation in over three time points – 1990, 2000, and 2010 – giving particular attention to contrasts between trends in areas of established Latino settlement and new destinations. The study makes several contributions. First, it provides comprehensive findings regarding trends in White-Latino segregation over three census periods including 2010. Second, the study covers the full nation and tracks White-Latino segregation in nonmetropolitan areas, where much of new Latino population growth is occurring, as well as in metropolitan areas. Third, it applies refined measurement strategies that address methodological challenges associated with measuring White-Latino segregation in areas of new Latino settlement. Finally, it uses multiple indices of uneven distribution to explore the levels, patterns, and trends in White-Latino segregation more fully. Our analyses yield two important findings. The first is that uneven distribution for White-Latino segregation in new destinations differs from familiar patterns seen in established areas; it typically does not involve substantial levels of group residential separation and neighborhood polarization. The second finding is that trends and patterns in White-Latino segregation vary markedly depending on whether the index used is sensitive to group residential separation. We review the issues relevant to these findings to better document and explain how trends and patterns in White-Latino segregation involve complexities not previously recognized.

I. Introduction

A new trend has been identified in the demography of the Latino population of the United States. Historically, Latinos had been concentrated in the Southwest (California, New Mexico, Arizona, and Texas), the Northeast (New York) and Florida, but the past two decades have seen substantial increase in Latino migration to the Midwest and the Southern regions of the United States where there has not before been a significant Latino presence. "New destinations" such as these have received increasing attention from sociologists and demographers who are seeking to better understand new patterns of settlement and distribution of Latinos who in the past decade have emerged as the largest ethnic minority population in the United States. We contribute to this growing body of research by comparing recent trends in White-Latino residential segregation in new destinations and areas of established Latino settlement. Specifically, we draw data from the 2010 census to provide the first examination of the levels and trends in White-Latino residential segregation in metropolitan areas and nonmetropolitan areas over the period 1990-2010.

The growth of the Latino population and its increasing impact on national demographic trends has been a topic of discussion for some time. Recently the social science literature also has begun to give attention to the dispersion of the Latino population outside of gateway cities and areas of traditional Latino presence. For example, Saenz (2010) reports that of the top ten states with the most rapid Latino population growth from 2000 to 2009, nine were located in the Midwest and South. The movement of Latinos to nonmetropolitan areas outside of traditional regions of Latino settlement also has been noted. Kandel and Cromartie (2004) found that half of Latinos in nonmetropolitan areas in 2000 were in new rather than traditional settlement areas. They also reported that Latinos have contributed disproportionately to nonmetropolitan population growth since 1980 and that Latino migration had sustained positive and sometimes relatively high growth rates in many nonmetropolitan areas that would otherwise have had declining populations.

Analysis of demographic trends for the Latino population has directed attention to assessing levels of Latino residential segregation and the potential role of Latino

population size and growth, particularly resulting from immigration and migration to new areas, and other factors in shaping trends in segregation. Most previous studies of Latino residential segregation have focused on metropolitan areas where the Latino population is relatively large and well-established. But recent contributions to the literature have examined White-Latino segregation in areas of new settlement and also in nonmetropolitan areas. For example, an important study by Lichter and colleagues (2010) identified new destination areas that emerged between 1990 and 2000 and compared White-Latino segregation in these areas with segregation observed in "established" areas, that is those traditional areas with long settled and large Latino populations. Based on analysis measuring segregation using the index of dissimilarity for 2000, they reported higher levels of segregation in new destinations compared with established areas and additionally found that this pattern held in both metropolitan and nonmetropolitan areas.

We update and extend this line of research in two important ways. As noted earlier, we draw on data from 2010 to provide the first study documenting the levels and trends in White-Latino segregation in new destinations in both metropolitan and nonmetropolitan areas over the period 1990 to 2010. In addition we examine patterns and trends in segregation using two indices that capture different aspects of residential segregation to better document and clarify the nature of White-Latino segregation in new destinations. Specifically, we report findings obtained using the index of dissimilarity (D), the most widely used measure of uneven distribution and one that will signal that segregation is present both when departures from even distribution are moderate in magnitude as well when they are large. In addition, we also report results obtained using the separation index (S), a measure that signals when uneven distribution involves clear residential separation of Whites and Latinos into neighborhoods that are polarized in terms of ethnic composition. Finally, we assess segregation using "unbiased" versions of the index of dissimilarity and the separation index. In contrast to "standard" versions of these indices, the unbiased versions take expected values of zero under random assignment and provide superior measurement of segregation in many communities.

II. Background

New Destinations

Patterns of Latino migration and settlement are a product not only of the rich and dynamic history of the Latino experience, but also of current social, political, and economic forces that directly affect Latinos who come to the United States as well as the ones who have long called the United States their home. Recent studies document that the majority of Latinos live in the Southwest region of the nation, the primary settlement location of the Mexican-origin population, as well as Florida and New York which are primary settlement locations for Cubans and Puerto Ricans, respectively (Saenz 2004; Saenz et al 2003). Some Latinos in these areas are immigrants and thus new to the nation as well as the locality; others are migrants whose ancestors in some cases have lived in the Southwest region for many generations. While the Southwest region continues to be home to the largest Latino populations, dramatic Latino growth is occurring in the Midwest and the South, and particularly in nonmetropolitan areas (Durand et al. 2005; Donato et al. 2007; Saenz and Torres 2003; Walker, Dollar and Amonker 2007).

Key trends relating to this are documented for the period 1990-2010 in Table 1 which presents percentage changes in population for Latino and Non-Latino groups in metropolitan and nonmetropolitan areas. Nonmetropolitan areas are divided into micropolitan areas – core-based statistical areas (CBSAs) that have urban cores of 10,000 but do not reach the threshold of 50,000 needed to gain metropolitan status – and nonmetropolitan areas outside of micropolitan areas (i.e., non-CBSA counties). Several relevant findings warrant brief comment. One is that Latino percentage population growth exceeds Non-Latino percentage population growth in all time periods and all area types. Another is that nationally Latino population growth is highest in nonmetropolitan areas and of those it is highest in micropolitan areas. Next, over two-thirds (69.4%) of Latinos residing in nonmetropolitan areas reside in micropolitan areas and this aspect of relative distribution across nonmetropolitan areas has been increasing steadily over time (from 67.2% in 1990 to 69.4% in 2010).

Frey (1996) and Lichter et al. (2010) observe that the outmigration from high immigration states and metropolitan areas to nonmetropolitan areas that began in the

1980s disproportionately involves low-SES, low-skill foreign-born workers. This is due primarily to the emergence of labor opportunities in the meatpacking and other low-wage industries in the Midwest and South. Meatpacking and processing plants in particular search for cheap and unskilled labor. Latino migrants, who are on average less educated, less likely to unionize and more likely to accept unskilled labor occupations at lower wages, provide an ideal pool of potential employees for this industry (Kandel and Parrado 2005). The unappealing and often dangerous working conditions in these factories drive employers to look towards immigrants, including the undocumented (Cantú 1995), because these jobs are generally unattractive to native-born workers (Gouveia and Stull 1997). Ethnographic research indicates that the industry directly recruits Latino migrants – for example by appealing to them directly by placing ads in Spanish – and also encourages these employees to pull in family members and friends who are looking for jobs in the United States (Cantú 1995).

Latino Segregation

A growing body of literature examines the residential patterns and segregation of Latinos in traditional metropolitan areas where Latino populations are long established and substantial in size. These studies have found that, in comparisons to Blacks, Latinos are only moderately segregated from Whites on the two most widely studied dimensions of uneven distribution (e.g., dissimilarity or "D") and isolation (e.g., same-group contact indicated by P*). Holding uneven distribution constant, Latino population growth would necessarily bring higher levels of isolation for Latinos and reduced exposure to Whites. Findings presented by Charles (2003) and Massey and Denton (1987) provide evidence consistent with this expectation. In addition, Frey and Farley (1996; 1993), Iceland, Weinberg and Steinmetz (2002) and Massey (2001) found that uneven distribution of Latinos from Whites has either held steady over time or perhaps has even increased in small amounts, particularly in metropolitan areas with a greater increase in the Latino population. One suggestion is that this pattern stems in part from the continuing arrival of substantial numbers of new immigrants who often locate in established areas of immigrant settlement. This is seen as potentially explaining the otherwise seeming contradiction between two findings. The first is that White-Black segregation has been slowly but

steadily trending down over recent decades while White-Latino segregation has been steady or increasing. The other is that, in comparison to Blacks, Latinos experience higher levels of residential mobility and greater contact with Whites as they acculturate and assimilate on socioeconomic status (Alba and Logan 1993; Charles 2000; Massey and Fong 1990).

The role of immigration and nativity is potentially important in this. One possibility is that nativity could moderate the effect of socioeconomic status on residential mobility if the foreign-born prefer and/or are constrained to live amongst other Latinos. Another possibility is that high-status immigrants could experience higher residential mobility if they seek to aggressively pursue the "American dream." Charles (2000) for instance found that a significant percentage of foreign-born Latinos in Los Angeles expressed a preference to live in neighborhoods where Blacks are absent and few expressed a desire to live in all-Latino neighborhoods. Iceland and Nelson (2008) find that the foreign-born tend to be more segregated from Whites than the native-born. With Latinos now dispersing beyond areas of established Latino settlement, it is more relevant than ever to investigate how Latino immigrants and migrants are integrating into communities around the country.

Significantly, only a few studies (e.g., Lichter et al. 2010; Wahl, Breckenridge, and Gunkel 2007) have investigated segregation patterns for Latinos in new destinations, in part because new destinations often are nonmetropolitan areas and other areas with small Latino populations while most previous studies of White-Latino segregation have focused on major metropolitan areas with established Latino populations. Lichter et al. (2010) have perhaps undertaken one of the best efforts thus far to document residential segregation patterns of Latinos in new destinations including nonmetropolitan areas. Drawing on block-level data from Summary File 1 of Census 2000 they calculated the dissimilarity index of Latino segregation from Whites in areas where Latinos have only recently become a significant population and compared these segregation levels with those observed for established destinations. They find that Latinos in new destinations experience residential segregation at as high of a level as Latinos in established areas, even in the case of nonmetropolitan new destinations. A previous study by Fischer and Tienda (2006) examined segregation trends in metropolitan new destinations but did not consider new destinations outside of metropolitan areas. They reported trends differing from those

found by Lichter and colleagues; specifically, they observed higher levels of segregation in "traditional" as opposed to "new destination" metropolitan areas. Wahl and colleagues (2007) also studied segregation in new destinations but looked only at micropolitan areas and found segregation to be higher in new destination areas. We build on the example of these contributions and examine White-Latino segregation in metropolitan areas, micropolitan areas, and non-CBSA counties (nonmetropolitan counties not in micropolitan areas).

Immigrant Congregation, Spatial Assimilation, and Place Stratification

Our primary task in this analysis is social description – we seek to document recent patterns and trends in White-Latino segregation across new destinations and established areas. We do not seek to test or extend theories of segregation as space limitations require that we leave that task for future analyses. Nevertheless, it is appropriate to review how three perspectives – immigrant congregation, spatial assimilation, and place stratification – inform the general understanding of Latino segregation and residential mobility. To begin, we note that the three perspectives are not mutually exclusive; to the contrary, all three direct attention to dynamics that may be operating simultaneously in some degree.

The rapid growth of the Latino population in recent decades has been driven by both natural increase and even more so by immigration. The growth of the Latino population in new destinations is driven primarily by immigration and internal migration. Segregation of immigrant and migrant populations in new destinations thus reflects the settlement patterns of many "pioneering" households which can vary widely. Due to their novelty and the absence of an institutionalized White-Latino residential stratification order, the housing options Latino pioneers encounter may in some cases be relatively unconstrained. By definition, they cannot settle in established Latino neighborhoods – none yet exist. But the small numbers involved in early Latino settlement create the likelihood of uneven distribution because joint location of even a few Latino households in a neighborhood will tip it away from even distribution. Dynamics of congregation can potentially reinforce this initial uneven distribution and promote the emergence of Latino neighborhoods if the settlement of subsequent migrants is structured directly and indirectly by social connections associated with kinship and friendship, community of origin, relationships of

mutual support and reciprocity, common language and culture, shared needs, and other practical and social aspects of ethnic communities (Zarrugh 2008). Consistent with this Leach and Bean (2008) note increases in the percentage of Latino migrants living in horizontal extended households in new destinations, which suggests that new migrants may initially rely on the support of extended-family in new destinations. Relatedly, labor recruitment practices may lead Latino migrants to congregate in areas of ready housing availability such as mobile home parks, worker dormitories, converted hotels and housing complexes, and workers' quarters (GAO 1998:14; Benson 1991; 1996; Garcia 1997; 2002; 2005; Zarrugh 2008:27).

Spatial assimilation dynamics also are likely to be involved and play a changing role over time. The spatial assimilation perspective anticipates that White-Latino residential segregation can arise initially due to group differences in social characteristics, including differences in socioeconomic status, language, and nativity. In addition to potentially serving as positive attractors as in congregation, common language and ethnic culture of Latino migrants can serve as impediments to easy participation in the broader housing market. Similarly, the typically low socioeconomic status of Latino migrants combines with factors such as income stratification of neighborhoods, low income housing scarcity, and minimal or no public transportation options to restrict Latino housing options to a limited range. Collectively, these dynamics can lead Latino residents, especially new immigrants and migrants, to disproportionately co-reside, often in locations near places of concentrated Latino employment such as meat packing plants, seafood processing plants, poultry processing plants, and a variety of agriculture-related work sites.

Initial differences that serve to separate groups can and often do change. This raises the hypothesis that, as differences in social characteristics diminish and minority groups acculturate and experience gains in socioeconomic status, they will convert these gains into better residential outcomes which results in more residential contact with the dominant group (Alba and Logan 1993; Massey and Denton 1985). For native-born groups, this primarily involves increased income and education. For the foreign-born, the process would involve English language acquisition, citizenship and other aspects of acculturation that occur with increased time in the United States (Charles 2003; Iceland and Nelson 2008; Iceland and Scopilliti 2008). For Latino migrants in new destinations this also may

include diffusion out of meat processing and other agriculture-related industries, where turnover rates are very high, and into other sectors of the economy.

Research in the residential attainment tradition suggests that the spatial assimilation perspective is particularly relevant to Latino and Asian groups, whose trends in residential outcomes more closely reflect a spatial assimilation pattern (Iceland and Nelson 2008). This stands in contrast to the pattern for Blacks, where the theory is not strongly supported, as Blacks are still the most highly segregated group from Whites despite being a mostly native-born population (Alba and Logan 1993; Iceland et al. 2002). South and colleagues (2005a; 2005b) also point out the spatial assimilation process may vary by Latino ethnic group, with some groups being more likely to move along the spatial assimilation trajectory than others. According to the spatial assimilation perspective, we might expect to find lower segregation in established areas of settlement where Latinos have had time to experience greater acculturation and socioeconomic assimilation. But it is not likely to be so simple. Many areas of established Latino presence continue to attract immigrants and this can serve to maintain and regenerate group differences even as segments of the Latino population are acculturating and experiencing upward socioeconomic mobility.

The place stratification perspective focuses attention on the role of factors such as discrimination and racial and ethnic stratification to explain why residential segregation arises and why it may persist despite diminishing differences between groups on other social characteristics. The main argument is that due to discrimination, belonging to a racial or ethnic minority group is itself a barrier to residential contact with Whites even as the minority group becomes more similar to Whites socioeconomically (Charles 2003). Discrimination dynamics are seen as especially relevant in accounting for high levels of segregation and slow spatial assimilation for Blacks. By comparison, segregation levels are lower and spatial assimilation is more evident for Latinos and Asians. But place stratification dynamics still are seen as important to explaining why Latinos and Asians are residentially segregated from Whites as well.

As yet there is no consensus regarding whether, and if so how, the impact of discrimination and racial and ethnic stratification on White-Latino segregation varies across new destinations and areas of established Latino presence. Theories of competitive

ethnic relations have pointed to relative group size as a potential factor impacting racial and ethnic inequality and segregation (Fossett and Cready 1998; Blalock 1956; 1957; 1967; Wilcox and Roof 1978, Frisbie and Niedert 1977; Tienda and Lii 1987). This perspective suggests that ethnic minority populations that are small may be subject to less vigorous discrimination because the majority does not view the minority group as a "competitive threat". Based on this, it is possible that initial settlers for a group – the pioneers in a particular community – can potentially be "off the radar" and have less restricted housing options because they do not encounter a pre-existing, institutionalized racial and ethnic residential hierarchy. In contrast, the majority is likely to view minority groups that grow rapidly to large relative size as a threat to majority advantages in socioeconomic position (including residential and neighborhood outcomes) and respond with greater discrimination and avoidance to conserve and protect the majority group's advantaged social position. This line of reasoning suggests that discrimination leading to White-Latino segregation would be lower in new destinations and areas of limited Latino presence and higher in areas of established Latino presence, especially areas where the Latino population is large in relative size.

Note again that the three perspectives – immigrant congregation, spatial assimilation, and place stratification – are not mutually exclusive and all may operate simultaneously. As a result, it is plausible, perhaps likely, that residential segregation trends for Latinos may be complex. For example, place stratification and immigration congregation dynamics can both contribute to establishing and maintaining Latino segregation patterns at initial settlement and during periods of rapid group growth through immigration and migration. But at the same time, spatial assimilation can be operating to promote declines in segregation for some segments of the Latino population that are acculturating, experiencing socioeconomic mobility, and moving into the broader economy and housing market. By documenting and comparing White-Latino segregation by area type over time we provide new data points that will be relevant for helping determine what the net impact of these various on-going dynamics has been.

III. Data, Methods, and Measurement

Data and Units of Analysis

We obtain the data for our analyses from the race by Latino ethnicity tabulations for persons of all ages based on the 100% counts reported in the PL 94-171 (Voter Redistricting) summary file for 1990 and in Summary File 1 for 2000 and 2010. We use population counts for individuals to maintain comparability with past studies, but acknowledge that households also might be seen as an appropriate choice since most households are racially homogeneous and the individuals in them do not locate independently (Winship 1977). We use data for census blocks because block-level data are better suited for capturing segregation patterns in nonmetropolitan areas and for small groups such as Latinos in new destinations. Larger spatial units such as census tracts or even census block groups are not satisfactory because Latino populations in new destinations often are much smaller than that of even a single tract or block group. Thus, even if Latinos were highly concentrated in a smaller cluster of adjoining blocks, they in many cases would live in majority White neighborhoods at the tract level. We conducted preliminary GIS analyses and exploratory quantitative analyses to investigate this issue and found that segregation patterns that were clearly evident at the block level often could not be captured using data for larger units (e.g., block groups and tracts) which would yield misleadingly low estimates of the levels of segregation.

We adopt metropolitan and micropolitan Core Based Statistical Areas (CBSAs) and non-CBSA counties as our community-level units for assessing residential segregation. CBSAs have several advantages for our purposes. First their underlying conception and operationalization are extensions of familiar principles used in establishing metropolitan areas. Indeed, about a third of CBSAs are also designated as metropolitan areas with the remaining two-thirds being designated as micropolitan areas. Second, CBSAs are defined on the basis of counties and thus the area definitions for CBSAs used in the 2010 census can be applied in 2000 and 2010 thus permitting us to follow segregation over time for areas defined on the basis of constant definitions. Third, micropolitan areas by definition are nonmetropolitan and so provide an opportunity to investigate segregation in

nonmetropolitan areas where much of Latino population growth in new destinations has been taking place.

Our analysis data set also includes non-CBSA counties.[1] These are drawn from the 1,348 non-micropolitan counties that do not contain urban centers of 10,000 or more in population as required for CBSA (micropolitan) designation. Between these counties and the micropolitan and metropolitan CBSAs, we achieve coverage of the full United States. Of course, while there are many more non-CBSA counties than CBSAs, the bulk of the Latino population resides in metropolitan and micropolitan areas. Overall, in 2010, 92.5% of the Latino population nationwide lives in 384 metropolitan areas, 5.2% in 576 micropolitan areas, and 2.3% in 1,348 non-CBSA counties. Much of Latino population growth in new destinations is in nonmetropolitan settings; that is, micropolitan areas and non-CBSA counties. The Latino population in these areas is split 69.4% in micropolitan areas and 30.6% in non-CBSA counties.

In sum, our data set provides comprehensive coverage of White-Latino segregation patterns across a wide range of communities ranging from large- and medium-sized metropolitan areas to micropolitan areas that often are relatively small in population size (e.g., 7.0% are under 30,000 in 2010) and to non-CBSAs counties with small populations.

Case Restrictions

We imposed three restrictions on the cases we included in our analyses. Consistent with past practice by Lichter and colleagues (2010), we required each CBSA or non-CBSA county to have at least 100 Latino individuals in 1990 and at least 200 Latino individuals in both 2000 and 2010. This serves to exclude CBSAs and non-CBSA counties where Latino population counts are not adequate to sustain block-level segregation analysis. We also excluded cases where 30% or more of the Latino population was institutionalized in either 2000 or 2010. This serves to avoid using cases where segregation scores may be distorted due to residential patterns for Latinos residing in institutions, most of whom are inmates of

[1] There were 1,355 non-CBSA counties in 2010. Of these 7, could not be reconstituted in all three time periods resulting in 1,348 in our analysis data set.

prisons.[2] This practice is not common in previous research but it is potentially important for our analysis as most of the cases excluded on this basis were new destinations. In removing these cases from the analysis, we guard against including "new destinations" that register Latino population growth and higher segregation due primarily to the presence and/or expansion of prison populations. Finally, we excluded CBSAs and non-CBSA counties where percent Black for the Latino population was 20% or higher in 2000 as prior research has shown that segregation of Whites from Black Latinos is higher than segregation of Whites from non-Black Latinos (Massey and Bitterman 1985; Iceland and Nelson 2008).[3]

In all, these case restrictions excluded 85 out of 960 CBSAS with 42 based solely on Latino population counts, 21 based solely on the size of the Latino institutional population, 16 based solely on the percentage of Blacks in the Latino population, and 6 on the basis of multiple criteria. Of the 97 excluded CBSAs, 81 were new destinations and only 3 were established Latino areas. The case restrictions excluded a much larger number of non-CBSA counties, primarily on the basis of Latino population size. Of the total of 871 out of 1,348 non-CBSA counties excluded from the analysis, 841 (96%) had Latino population counts that were too low to sustain analysis. The size of the Latino institutional population and the percentage of Blacks in the Latino population, either alone or in combination, excluded an additional 30 cases. A total of 477 non-CBSA counties remained after applying these case restrictions. Of these 196 were new destinations.

Measuring Segregation – Overview

Trends in White-Latino segregation differ markedly depending on which summary index is used to measure segregation. Accordingly, we discuss several relevant technical issues for the benefit of readers who wish to consider them in more depth. At the same time, however, we expect many readers will be more interested in the substantive

[2] The percentage of the White population residing in institutions never reached levels this high. On average, White-Latino segregation measured by the index of dissimilarity was 8.5 points higher in CBSAs excluded on this criterion.

[3] The cut point is based on testing the effects of dummy variables for 5-19% and 20% Black for the Latino population in regressions predicting White-Latino segregation. The dummy variable for 20% Black had a statistically significant large effect (14 points). The dummy variable for 5-19% had a small effect that was not and statistically significant.

implications of our finding and less interested in the technical details of segregation measurement. For those readers we offer the following brief overview of the key issues.

We use two measures of uneven distribution – the index of dissimilarity (D) and the separation index (S) – in our study. The two indices are sensitive to different aspects of uneven distribution and each one can reveal important things about White-Latino segregation that would be missed if only one index was considered. When their scores track each other closely, as tends to be the case in large metropolitan areas, the story regarding segregation is relatively simple and uncomplicated. Specifically, when scores for D and S are concordant group residential distributions follow a "prototypical" pattern wherein extensive displacement from even distribution occurs in conjunction with clear group residential separation and neighborhood polarization on ethnic composition. When scores on D and S are discordant, the nature of segregation is more complex; group residential distributions do not follow the "prototypical" pattern many, perhaps most, readers would automatically expect. Instead, D-S divergence always involves a combination of a high score on D and a low score on S. This signals the presence of a particular kind of situation wherein Latino displacement from even distribution is extensive but Latinos are not residentially separated from Whites and neighborhoods are not polarized on ethnic composition with Whites living in predominantly White areas and Latinos living in predominantly Latino areas. To highlight the contrast with "prototypical segregation" we term this pattern "dispersed displacement from even distribution" or, alternatively, "uneven distribution without group separation and neighborhood ethnic polarization".

Scores for D and S tend to be concordant for White-Latino segregation in large metropolitan areas with well-established Latino populations such as Los Angeles and Houston. But it is a mistake to assume that the "prototypical" pattern of segregation seen in these settings also holds elsewhere as this is not necessarily the case. To the contrary, scores for D and S can be and often are discordant for White-Latino segregation. This is especially common in new destinations where it is the norm, not the exception. As a result, White-Latino segregation in new destinations often is fundamentally different from White-Latino segregation in large metropolitan areas with well-established Latino populations.

In striking contrast to White-Latino segregation in established areas, it is common for White-Latino segregation in new destinations to involve dispersed displacement from even distribution such that predominantly Latino neighborhoods are rare or absent altogether and the overwhelming majority of Latinos reside in neighborhoods that are predominantly White. In this situation scores for D can and often do take high values but scores for S always take low values. Scores on D and S can and do diverge in this way because the two indices respond to different aspects of uneven distribution. D responds to the "volume" of group displacement from even distribution; S responds to the magnitude or degree of group residential separation and neighborhood polarization. Significantly, extensive displacement from uneven distribution does not necessarily produce a substantial degree of group residential separation and neighborhood polarization.

This fact is not widely appreciated because influential methodological studies report that D and S and other measures of uneven distribution tend to correlate highly (Duncan and Duncan 1955; Massey and Denton 1988). But "conventional wisdom" must be set aside in this case because it does not hold for White-Latino segregation in new destinations. This conclusion rests on two points. First, a high correlation between D and S is not a logical necessity. The two indices can take discordant values and this outcome is common for White-Latino segregation in new destinations. Second, the close empirical associations among indices of uneven distribution reported in earlier methodological studies are based on small, non-representative samples and do not generalize to the study of White-Latino segregation in new destinations. The samples in Duncan and Duncan (1955) and Massey and Denton (1988) both consisted of 60 very large metropolitan areas with well-established minority populations. Importantly, *the samples did not include any cases comparable to new destinations*. Associations among indices of uneven distribution are substantially weaker in samples that include a wider range of metropolitan and micropolitan areas (Fossett forthcoming). The associations are especially weak for measures of White-Latino segregation in new Latino destinations.

For this reason, we report patterns and trends for both D and S. S serves as a good contrast to D because S registers an aspect of uneven distribution that we believe is universally viewed as compelling – group residential separation and neighborhood polarization. Thus, when S takes a high value, all would agree that segregation is

pronounced. But S is less sensitive to an aspect of uneven distribution some might also view as meaningful – extensive displacement from even distribution. D is sensitive to this aspect of segregation and, accordingly, will take high values more easily than S. We are uncertain whether most readers would view the condition of extensive displacement from even distribution without group residential separation and neighborhood ethnic polarization as sociologically compelling. The most likely case is that most readers are not aware of the possibility of this segregation pattern and have not yet formed a strong opinion on the matter. Accordingly, we adopt the position that examining both indices provides a better basis for making sense of segregation patterns and trends than looking at only one. With that we conclude our overview discussion of the issues and note that readers who are comfortable with this summary may wish to skip one or more of the following sections that offer additional discussion of relevant issues in segregation measurement.

Measuring Segregation – More Detailed Review of Selected Issues

Methodological reviews of segregation indices identify several viable alternatives for measuring uneven distribution measures. We examined scores for five well-known indices – the Gini index (G), the Delta or Dissimilarity index (D), the Atkinson index (A) and the closely related Hutchens square root index (R), the Theil entropy index (H), and the separation index (S) (also known as eta squared [η^2] and the variance ratio [V]).[4] Technical reviews do not provide a strong basis for raising any single index above all others as each one responds to different aspects of residential distribution and may be attractive for some research needs (James and Taeuber 1985; Stearns and Logan 1986; Reardon and Firebaugh 2002; White 1986). When segregation follows "prototypical" patterns along the lines of familiar empirical examples seen in large metropolitan areas (e.g., Chicago, Cleveland, Detroit, Los Angeles, Milwaukee, New York, etc.) and the kinds of residential distributions featured in didactic reviews of segregation measurement, index choice tends not to be crucial. The reason for this is that the prototype pattern of uneven

[4] These indices are reviewed and compared in a numerous methodological studies including Duncan and Duncan (1955); Massey and Denton (1988), James and Taeuber (1985), White (1986), Reardon and Firebaugh (2002), and Hutchens (2001; 2004).

distribution seen in these examples is one in which minority individuals live apart from Whites and are concentrated in neighborhoods that are disproportionately minority. When this pattern holds, greater levels of uneven distribution typically involve higher levels of group residential separation and neighborhood polarization and index choice is not important because scores for all of the popular indices listed above will tend to correlate closely.[5]

For our study it is important to recognize that the relatively simple and uncomplicated residential patterns associated with prototypical segregation is not logically necessary and often does not occur empirically. High levels of displacement from even distribution do not always involve residential separation and polarization. To the contrary, it is possible for some indices to take high values when minority individuals live alongside, not apart from, Whites in neighborhoods that are predominantly White. This is not widely appreciated in part because the pattern is rarely examined in didactic reviews of segregation measurement. We caution, however, that studies of White-Latino segregation must consider the issue because the outcome of obtaining high scores on indices of uneven distribution that register extensiveness of displacement from even distribution in combination with low scores on indices that register residential separation and polarization not only is logically possible; it is common in our data. Significantly, the outcome does not occur randomly; it is especially likely to occur in new Latino destinations. In this situation, index choice matters. Scores for different indices correlate less closely and trends and patterns in White-Latino segregation can and do differ depending on which index is considered.

In view of this, we report results for two indices – the delta or dissimilarity index (D) and the separation index (S) – to better clarify the patterns and trends in White-Latino segregation across new destinations. The separation index (S) takes high scores only when uneven distribution involves group residential separation and neighborhood ethnic polarization, residential patterns we believe observers would universally view as sociologically compelling. Significantly, all popular indices of uneven distribution take high

[5] Thus, for example, Massey and Denton (1988) report relatively high correlations among G, D, A, H, and S (r's are in the range 0.89-0.98). Fossett (forthcoming) finds similar high correlations among indices in the subset of CBSAs that correspond to the Massey and Denton analysis sample but reports much weaker correlations in analyses based on broader samples of CBSAs.

values when S takes high values. But the reverse is not true. In particular, the index of dissimilarity (D) can take high scores when uneven distribution does not involve group residential separation and neighborhood ethnic polarization. Accordingly, the relationship between D and S is asymmetric. Specifically, values of D are never lower than values of S but values of D can be and often are much higher than values of S.[6] Comparing results for the two indices thus can provide insights into the nature of segregation patterns that might be overlooked if only one of the two was considered. When results for the two indices agree, residential patterns necessarily follow "prototypical" pattern and the nature of segregation is relatively simple and straightforward. When scores for the two indices diverge, residential patterns are more complex and greater care must be taken when characterizing the nature of segregation. The combination of high-D and low-S – extensive group displacement from even distribution without residential separation and neighborhood polarization – has received little attention in the literature on segregation measurement. Accordingly, its prevalence in White-Latino segregation in new destinations is not yet widely recognized and a consensus has yet to emerge regarding its substantive comparison with the "prototypical" segregation combination of high-D, high-S.

The dissimilarity index (D) is the most widely used measure of uneven distribution. It is known for several things; a geometric relationship with the segregation curve, a simple computing, and interpretations that are relatively easy to convey to nontechnical audiences. The value of D indicates the minimum proportion of one group, either Whites or Latinos in this case, that would have to relocate to a different area to bring the ethnic composition of every area into alignment with the ethnic composition of the city as a whole.[7] D also has an alternative interpretation that is useful for understanding its point of contrast with S; D indicates the White-Latino difference in the percentage of individuals in the group that reside in areas where the proportion White for the area (p) equals or exceeds the city-level proportion (P) (Becker, McPartland, and Thomas 1978). In our data, results for D correlate closely with results obtained for G, A, and R, indices which are less

[6] Values of D and S will be equal when neighborhoods consist of three types based on pairwise percent White (p): 0% White, 100% White, and area percent White (p) exactly equal to city percent White (P). If any area takes a value on area percent White (p) other than 0, P, or 100, the value of D will be higher than the value of S.

[7] This usual interpretation rests on the assumption that only one group relocates (Zelder 1977).

widely used than D despite receiving more favorable treatment in technical reviews.[8] We present results for D to maintain consistency with prior research and note that we obtain similar results using G, A, and R.

The separation index (S) is not as widely used as D, but it has been used regularly in segregation studies for many decades. This is not always fully appreciated because the index has been known by many names including the correlation ratio or eta squared (η^2) (Duncan and Duncan 1955; White 1986; Stearns and Logan 1986), the variance ratio (V) (James and Taeuber 1986), the revised index of isolation (Bell 1954), the Coleman segregation index (S and r_{ij}) (Coleman, Kelly, and Moore 1975; Coleman, Hoffer, and Kilgore 1982; Becker, McPartland, and Thomas 1978), and the segregation index "S" (Zoloth 1976). S consistently fares well in conceptual and methodological reviews (e.g., Zoloth 1976; White 1986; Reardon and Firebaugh 2002; Becker, McPartland, and Thomas 1978). For example, S registers all integration-promoting residential transfers and exchanges. In contrast, D registers only transfers and exchanges where proportion White for the two areas involved (p) are on opposite sides of proportion White for the city (P).

The separation index has multiple available interpretations. It is perhaps best known for its equivalence to the eta squared (η^2) statistic from an analysis of variance explaining the binomial variable race by area of residence (parcel or tract) (Duncan and Duncan 1955; White 1986). However, we favor an alternative interpretation of S as the White-Latino difference in average contact with Whites.[9] Stearns and Logan (1986) note that, in comparison with D, S is more closely attuned to segregation patterns that involve pronounced group separation and residential polarization wherein minority individuals live apart from Whites in neighborhoods where minorities predominate. This quality makes S an attractive index for contrasting with D.

Two misconceptions about S warrant comment here.[10] One is that S sometimes is incorrectly characterized as measuring exposure or isolation rather than uneven

[8] In contrast to G, A, R (and also H and S), D is insensitive to differences in group distribution across areas that are above or below city-wide ethnic mix (James and Taeuber 1985:13; Reardon and Firebaugh 2002:51; White 1986:203). Nevertheless, D correlates at 0.97 or higher with G, A, and R in our data.

[9] To the best of our knowledge this interpretation of S is first noted in a rarely cited paper by Becker, McPartland, and Thomas (1978).

[10] Fossett (forthcoming) discusses these and related issues in greater detail.

distribution.[11] The misunderstanding arises because some computing formulas for S do include terms that similar to overall exposure and isolation indices.[12] But the exposure terms involved do not reflect *overall* exposure and isolation and can depart from these terms, especially in cities with diverse ethnic compositions. Additionally, the exposure terms involved are subject to a normalizing transformation that eliminates the mathematical relationship between ethnic composition and overall exposure. Accordingly, there is no necessary correspondence between the value of S and the values of standard exposure indices; their values can and do diverge empirically.

Analytically, there are multiple additional distinctions. S summarizes a pairwise comparison of the residential distributions of two groups disregarding the presence of any other groups that may be in the city population. Isolation registers same-group contact for one group in relation to all other groups. Thus, while group separation as measured by S can be understood as mutual or reciprocal pairwise isolation, it is logically possible for scores on S to diverge from single-group isolation scores. Empirical associations between scores for S and scores for some single-group isolation indices may be relatively strong in some cases (e.g., particularly for the smaller group in a two-group comparison for cities where the presence of other groups is negligible). But the associations vary over time, type of city, and by group and are never exact. Furthermore, S is not unique in having inexact correlations with scores for single-group isolation indices. For example, in the data on White-Latino segregation reviewed for this methodological discussion scores on isolation for Whites correlate more closely with scores of D ($r = 0.4919$, $r^2 = 0.2420$) than with scores of S ($r = -0.4301$, $r^2 = 0.1850$).[13] The key point is that such correlations carry no compelling substantive implications. Thus, while it is informative to know that measures of

[11] This view traces in part to the discussion of S (designated as V and eta squared) in Massey and Denton's (1988) excellent review of segregation indices. They characterize S as an "exposure" index based on "its straightforward relationship to the isolation index" 1988:289). Our discussion here shows that this characterization is unfortunately misplaced.

[12] Importantly, the exposure terms involved are not standard exposure measure constructions; they are "pair-wise" constructions that involve only counts for the two groups in the comparison – not standard exposure constructions. The distinction is important. For example, it is logically possible for pairwise isolation for a group to be high when its overall isolation is low.

[13] The correlation between isolation for Whites and the Hutchens square root index (R), a measure more similar to D than to S, is even higher ($r= 0.5339$, $r^2 = 0.2850$).

uneven distribution may correlate with measures of single-group isolation, it does not mean that one can be seen as a substitute for the other.

This point is even clearer when one considers individual cases where the discrepancy between S and isolation is very large. Out of 883 CBSAs that meet the selection criteria for our analysis, many have large discrepancies between scores on Latino isolation and S. The difference exceeds 30 points in 25 CBSAs, 40 points in 16 CBSAs, and 50 points in 10 CBSAs. A common factor is seen in these cases; it is that almost all have populations that are majority Latino. This causes the scores for the single-group isolation index for Latinos to be high even when White-Latino segregation measured by S is low. The case of El Paso, Texas highlights the pattern. In 2000 El Paso is 78% Latino, has a value of S for White-Latino segregation of 26.6, and has a Latino isolation index of 86.9. If one viewed the separation index (S) as a close proxy for Latino isolation one would be wrong and by a very large margin.

Another misconception regarding the separation index (S) is that S will *necessarily* take low values when the relative size of the minority group is small. It is true that S cannot take high values when minority group size is smaller than the populations of the spatial units used to measure segregation. But this is a problem with research design, not the logical qualities of S. S can easily register high values when spatial units are appropriate for assessing the segregation of small groups. This is why it is important to use blocks instead of tracts when assessing segregation in nonmetropolitan areas. For example, consider a micropolitan area where the population consists of 99,500 Whites and 500 Latinos. Latinos would represent only 0.5 percent of the population but can fill more than 16 blocks at 75% Latino (assuming average block size of 40). In that situation, both S and D would take high values of 74.0 and 99.8, respectively.[14] In sum, when segregation is assessed using block data as we do in this study, S can register high values even when minority group size is extremely small. Accordingly, when low values of S are observed we can safely draw important substantive conclusions about White-Latino segregation. We can conclude that most Latinos live among Whites in neighborhoods that are predominantly White in terms of pairwise ethnic mix and that few Latinos live in barrios,

[14] These scores are computed under the assumption that Latinos are assigned 30 per block with the remainder being assigned to 1 block.

enclaves, or other predominantly Latino areas. We also can conclude that neighborhoods are not polarized as either White or Latino and thus can say that Latinos are not in any regular understanding of the term residentially "separated" from Whites; they live side-by-side with Whites and experience fundamentally similar residential outcomes.

Alternative Computing Options for D and S

There are many mathematically equivalent computing formulas for D and for S. While all are interchangeable for the task of obtaining correct index values, different formulas can be useful for highlighting specific characteristics of the indices. The following two computing formulas for D and S showcase key similarities and differences.

$$D = 100 \cdot (1/2TPQ) \cdot \Sigma\ t_i \cdot | p_i - P |$$

$$S = 100 \cdot (1/TPQ) \cdot \Sigma\ t_i \cdot (p_i - P)^2$$

The formulas show both D and S to be very similar in construction for measuring departure from uneven distribution. The only meaningful difference is that D registers deviations based on absolute value while S registers squared deviations. Both constructions are defensible. Reviews going back at least to Zoloth (1976) note that D's construction makes it sensitive to small quantitative departures from even distribution. In contrast, S is less responsive to small quantitative deviations. Stearns and Logan (1986) argue that this difference makes S more attractive for identifying segregation patterns that involve clear group separation and residential polarization.

D and S also can be cast in a common "difference of group means" computing framework that highlights that both measures have clear relationships to "pair-wise" group exposure.[15] These formulations show that D and S can both be expressed as the White-Latino difference in average scaled exposure to Whites, designated as "y", based on area proportion White (i.e., p = w/(w+l) where "w" and "l" are the area-specific counts for Whites and Latinos, respectively).

$$D = (1/W)\Sigma w_i y_i - (1/L)\Sigma l_i y_i$$

$$S = (1/W)\Sigma w_i y_i - (1/L)\Sigma l_i y_i$$

[15] Fossett (forthcoming) provides a detailed review of the mathematical basis for such formulations and provides parallel formulations for G, R, and H. But the difference of means formulations for D and S was anticipated more than three decades ago in an interesting but little known methodological study by Becker, McPartland, and Thomas (1978).

In this formulation the difference between D and S is not whether they register exposure – both do; the difference is the way exposure is quantified. In the case of S, scaled exposure to Whites (y) is set to the value of p. In the case of D, scaled exposure to Whites is quantified as a binary (0, 1) coding of "attains parity on exposure to Whites" with y set to 1 if $p \geq P$ and 0 otherwise.

The difference of means formulations of D and S are not well known. But they are mathematically equivalent to the more familiar computing formulas provided above and thus yield identical index scores while being very easy to implement.[16] These formulations help clarify an important substantive difference between scores for D and S. The scoring of y for the difference of means formulation of S shows that S responds to untransformed quantitative differences between Whites and Latinos in their exposure to Whites. As a result, values of S can be large under only one condition; when Whites and Latinos are residentially separated with Whites living primarily in predominantly White neighborhoods and Latinos living primarily in predominantly Latino neighborhoods. This justifies the designation "separation index".

In contrast, the differences of means formulation of D highlights the fact that D collapses contact into a binary (0, 1) scheme that assigns identical values to both small and large differences. As a result, D can take high values more easily than S. This occurs under a particular condition – when uneven distribution involves White-Latino differences in contact with Whites that are quantitatively small. The combination of a high score on D and a low score on S thus signals that Latino displacement from even distribution is extensive but is "thinly dispersed" (i.e., is not concentrated). Thus, while a large fraction of Latinos will live in areas where Whites are under-represented, they are living in areas that are predominantly White in ethnic composition. Stated another way, due to the due to the small differences in contact with Whites, uneven distribution does not involve residential separation and neighborhood ethnic polarization.

Zoloth (1976), Stearns and Logan (1986), and others have previously noted that D and S responding differently to small differences in area group proportions. Nevertheless, the potential importance of the difference is not widely appreciated. The issue is relevant for

[16] See Fossett (forthcoming) for extended discussion and derivation of these formulations.

understanding White-Latino segregation in new destinations, so we make a few selective points to cast the sociological relevance of the difference between S and D in sharper relief. When S takes high values D also must be high. This creates a condition wherein Latino displacement from even distribution will be both extensive – involving a large fraction of the group population – and concentrated – placing Latinos in predominantly Latino areas. As a result Whites and Latinos will be residentially separated and will systematically live apart from each other in ethnically polarized neighborhoods. This carries clear logical possibilities for uneven distribution to be associated with other sociologically important consequences. For example, it is possible, and perhaps common, for Latinos that are residentially separated from Whites to experience disparities on a wide range of residence-based outcomes such as neighborhood socioeconomic standing, quality of schools, quality of neighborhood amenities and services, exposure to crime and other social problems, and so on. In contrast, when S is low, Whites and Latinos are not residentially separated; they are living in the same areas and, all else equal, they are less likely to experience differences on residence-based outcomes.

Fossett (forthcoming) documents how the differences between D and S can be substantively important in many situations. He does so by examining data for three majority-minority comparisons – White-Black, White-Latino, and White-Asian – and investigating how majority-minority differences in neighborhood socioeconomic standing vary across CBSAs based on level of residential segregation.[17] Not surprisingly, he found that average levels of majority-minority disparity in neighborhood socioeconomic standing were highest in CBSAs where both D and S were high and they were lowest in CBSAs where both D and S were low. Significantly, he found that majority-minority disparity in neighborhood socioeconomic standing varied widely when D was high but not when S was high. For example, taking the threshold for high as 45 for D and 35 for S, scores at the 50th percentile in the distribution of majority-minority neighborhood disparities for CBSAs where D was high were *lower* than scores at the 10th percentile in the same distribution for CBSAs where S was high. This results because residential separation is the "driver" for potential majority-minority disparities in residential outcomes. Accordingly, when S was

[17] Majority minority difference on neighborhood socioeconomic standing was measured in two ways; by group difference in neighborhood poverty rate and by group difference in neighborhood income rank.

low, the average level of majority-minority disparity in neighborhood socioeconomic standing were consistently low in all CBSAs including both CBSAs where the value of D was low (not surprising) and also in CBSAs where the value of D was high (surprising).

The takeaway points are these. When S and D diverge, it will be in a particular way; D will take high scores in comparison with S. When this happens, the higher values of D do not provide a basis for expecting majority-minority disparities in residential outcomes significantly above the levels predicted by knowledge of S alone. The reason for this is that residential separation and polarization creates the logical possibility for majority-minority disparities in residential outcomes. When D is high relative to S, it is because D is responding to departures from even distribution that are quantitatively small and carry little potential for group disparities in neighborhood outcomes.

The sociological relevance of high S situations is easy to grasp and requires little comment. Importantly, one must examine S to verify that the segregation pattern involves group residential separation and neighborhood polarization. Examining D alone is not enough because D can be high when S is low. This not widely appreciated because didactic discussions of segregation indices invariably show high levels of D in situations of prototypical segregation where S also is high. The high D, low S combination is not just a logically possible curiosity; it is empirically common in our data, especially in new destinations.

The issues emerging from the above discussion can be crystalized in the following point. Most observers view the sociological implications of high S situations as compelling. But the associated patterns of group separation and neighborhood polarization are not necessarily present when D is high. This raises a simple but important question about these high D, low S situations; namely,

> "What is the basis for viewing uneven distribution as sociologically important when Whites and Latinos live side-by-side in the same neighborhoods and consequently experience fundamentally similar residential outcomes?"

The literature on segregation measurement is mostly silent on this. In part, this is because the possibility of high D, low S situations is not widely recognized. Whatever answer may be offered, it cannot revolve around consequences that flow from group residential

separation and neighborhood polarization as that that is directly measured by S. Regardless of how this question is addressed in the future, we conclude that it is useful and necessary to consider both D and S in this study to gain a better, more complete understanding of patterns and trends in White-Latino segregation in new destinations.

Dealing with Index Bias

All indices of uneven distribution are prone to artifactual upward bias. The problem has been especially well documented for G, D, and S (Carrington and Troske 1997; Winship 1977) and key points can be summarized as follows. Index bias can be non-negligible and make index scores untrustworthy and potentially misleading in certain situations; for example when the group counts used in index calculations are small. The problem affects all indices of uneven distribution, but G and D are prone to much higher levels of bias than S. Additionally, bias in G and D is more complicated; specifically, it varies in a nonlinear way with relative group size. Bias is smallest when groups are equal in size and bias increasing at an increasing rate as group size becomes more imbalanced. The issues are relevant for our study for two reasons. First, non-negligible bias is expected for D, and also to a lesser extend for S, because we assess segregation using block data which involve small counts. Second, because relative group size varies considerably across areas, especially between new destinations and established areas, bias in D varies in complex ways across types of areas thus complicating comparisons of segregation across area type.

We deal with this problem by taking advantage of new developments in segregation measurement. Specifically, we use refined versions of D and S that are free of bias. Detailed review of the unbiased versions of D and S is beyond the scope of this paper. We provide a brief discussion in the appendix and note that extended treatments can be found in Fossett and Zhang (2011) and Fossett (forthcoming). A synopsis of several key points can be given as follows.

As noted earlier, both D and S can be given as a simple difference of group of means on individual residential outcomes. Specifically, D can be given as the White-Latino difference in the group proportion living in areas where proportion White (p) exceeds proportion White for the city (P) and S can be given as the White-Latino difference on the average for area proportion White (p). For an individual, the value of area proportion White (p) is

inherently biased up for Whites and down for Latinos because the individual, whose race is fixed and different for Whites and Latinos, is included in the calculation of p based on area population. This source of bias can be eliminated by a simple adjustment; calculate area proportion White (p') for individuals based on area *neighbors* instead of area *population.* The expected race composition of neighbors under random assignment is the same for both Whites and Latinos. Accordingly, the White-Latino differences of group means that yield D and S take expected values of zero under random distribution and thus are unbiased.

The unbiased versions of S and D are attractive on several counts. Most importantly, they yield trustworthy scores for D and S when measuring segregation for small groups using small spatial units such as census blocks. Specifically, the expected values of the unbiased versions of D and S are zero under all conditions while the expected values of the standard versions of S and especially D are often very high. Importantly, the unbiased versions of D and S maintain continuity with past research. As noted in the appendix, the standard and unbiased versions of D and S can be obtained from simple computing formulas that are very similar to computing formulas that yield standard scores for D and S. Accordingly, the unbiased versions support fundamentally similar substantive interpretations. As a result, researchers do not need to switch to completely new measures to deal with the problem of bias; they can continue to use familiar indices.

The final point we note is that one is never worse off when using the unbiased versions of D and S. When bias is not a problem – and sometime it is negligible, the unbiased versions of D and S yield scores that are for practical purposes identical to the scores obtained using standard versions of D and S. However, scores for unbiased versions of D and S can differ dramatically from scores for standard versions of D and S when bias is non-negligible. That is often the case when measuring segregation using block-level data as we do here. Furthermore, bias in D, and to a lesser extent S, is particularly likely to be high in new destinations. So the role of bias cannot be safely ignored. To the contrary, scores for the standard versions of D and S are problematic and scores for the unbiased versions of D and S should be used because they provide more trustworthy assessments of uneven distribution between groups.

Defining Area Types

The area types that we have identified for the purposes of distinguishing established and new Latino destinations are based on initial Latino presence (percent Latino in the area in 1990) and Latino population growth over time in a manner similar the approach used by Lichter and colleagues (2010). We designate areas which were over 30 percent Latino in 1990 as areas of established settlement with major Latino presence. These are overwhelmingly CBSAs and non-CBSA counties in Southwest states along the U.S.-Mexico border. We also designate a secondary category of areas of established Latino settlement for places that had a significant Latino presence (at least 10% Latino) in 1990 but were less than 30% Latino. We designate areas as new Latino destinations if they did not have a significant Latino presence (less than 10% Latino) in the previous decade but experienced rapid Latino population growth (greater than the national average Latino growth rate) in the past decade. The last group of areas we identify consists of those that did not have a significant Latino presence in 1990 and have experienced lower than average Latino population growth. We refer to these areas as "low Latino presence" areas.

Table 2 presents the distribution of CBSAs and non-CBSA counties over these categories. The distribution of CBSAs is as follows: 45 CBSAs are in the category of established areas of Latino settlement with major Latino presence (i.e., over 30 percent Latino), 86 CBSAs are in the category of established Latino settlement with significant Latino presence (i.e., were under 30 percent but at least 10 percent Latino), 548 CBSAs are new Latino destinations, and 194 CBSAs are areas of low Latino presence.[18] The distribution of non-CBSA counties is as follows: 62 areas of established Latino settlement with percent Latino of 30% or more, 61 areas of established Latino settlement with 10-29% Latino presence, 318 new Latino destinations, and 97 areas of low Latino presence.

Geography Revisited

The spatial unit used when computing segregation scores can play an important role in the findings. All else equal, lower scores are obtained when using larger levels of geography as compared to using smaller units (e.g., using census tracts versus using census

[18] Preliminary analyses were performed using alternative population thresholds for defining area types. We found that all key findings were robust over a variety of alternatives.

blocks). The problems are worse in situations where one group is small in relative size and in smaller communities where larger units are not well matched with the spatial scale of residential patterns. Lichter and colleagues (2010) argue persuasively that segregation in nonmetropolitan areas should be measured using block data. In the past, working with block data would raise concerns that index bias may complicate analysis because upward bias in conventional index scores is greater in general when segregation calculations involve small area counts (Winship 1977) and for D also varies in with relative group size. We avoid the measurement issues associated with small counts by using the unbiased versions of D and S which allow us to use the desired geographic unit without encountering the problematic upward bias of conventional segregation scores.

IV. Analysis Results

We begin by examining means for segregation scores for CBSAs and non-CBSA counties over three decades, 1990, 2000, and 2010. Table 3 displays means for both the unbiased dissimilarity index (D) and the unbiased separation index (S) by decade for a two-way cross classification of cases. The first grouping is by type of area: CBSAs that are designated as having "metropolitan status" (Metro CBSAs); CBSAs that are designated as micropolitan, not rising to metropolitan status but organized around a substantial urban core (micro CBSAs) and non-CBSA counties, counties that are nonmetropolitan and without a substantial urban center. The second group is by Latino population presence and trend: Established Latino areas with a Latino presence of 30% or more; Established Latino areas with a Latino presence of at least 10% but less than 30%; New Latino Destinations which has achieved a minimum threshold on Latino population size and are growing; and Areas of Low Latino presence where Latino population size is large enough to sustain segregation analysis but low overall and not increasing.

Space constraints require that we forego a detailed review of the differences between results obtained using the standard and unbiased versions of D and the standard and unbiased versions of S. These results are discussed briefly in the appendix to this paper and in more detail in Fossett (forthcoming). Here we note selected highlights of these methodological analyses. One finding is that using unbiased versions of D and S yield lower index scores as one would expect. Another result is that, consistent with Winship (1977),

D is subject to higher levels of bias than S and so scores for D are reduced by larger amounts when the unbiased version are used. Another important finding is that conditions that promote high levels of bias in D are more common in new destinations and areas of low Latino presence in comparison with areas of established Latino presence and, to a lesser degree, in nonmetropolitan areas in comparison with metropolitan areas. Accordingly, using the unbiased version of D tends to lower index scores in new Latino destinations and in nonmetropolitan areas by a greater amount than in other areas. Finally, levels of bias of bias for S are generally relatively low and variation in the average level of bias across groups of cities is modest compared to that observed for D.

Putting these and other patterns together leads to some general impacts on the findings we report here in comparison with those reported in earlier studies. Perhaps the most important is that differences in White-Latino segregation across area types are moderated when unbiased scores are used and the same is true for trends in segregation scores. However, in the main, many of the trends and patterns of variation across areas found using standard scores persist, albeit sometimes in muted form, when unbiased scores are used. When appropriate, we offer additional comments below as we review our findings.

Results for the unbiased dissimilarity index (D) indicate that White-Latino segregation tends to be higher in new destinations across all three decades in comparison to other areas. This is a clear pattern for Micro CBSAs and Non-CBSA counties, but it is a bit more tenuous for Metro CBSAs. Unbiased D is generally trending down decade by decade. The trend is quite clear for Micro CBSAs and Non-CBSA counties where it is seen for all four categories of Latino presence. The trend is uneven for Metro CBSAs. Of particular interest, D is not clearly falling in new destination areas.

Patterns and trends in S are often quite different from those seen for D. As noted above, S is less affected by bias than D so there is less impact of using unbiased scores for S. The main reason for differences in patterns and trends for D and S is that the two indices respond to different aspects of uneven distribution. This can be seen by considering a major point of contrast between results obtained using D and S. Where D indicates segregation is highest in new destinations and trending down for the most part, S indicates segregation is lowest in new destinations – and by a large amount – and is clearly trending

upward. What accounts for the results for S being so fundamentally different from the results for D? In brief, it is this. White-Latino residential distributions in new destinations are not characterized by "prototypical" segregation patterns where uneven distribution involves group residential separation and neighborhood polarization. To the contrary, the typical residential pattern in new Latino destinations is one in which Latino displacement from even distribution is extensive but widely dispersed. As a result, there are substantial White-Latino differences in group proportions attaining full parity with the presence of Whites at the city-level but the Latino shortfalls are quantitatively small. In this circumstance, most Latinos live in areas that are predominantly White, albeit often short of the level of White presence for the city overall, so group separation and polarization are very low.

Discordant results for D and S are not an inevitable outcome. Indeed it is often the case that values of D and S are concordant at low, intermediate, or high levels. It is logically possible for S to take high values as D does in areas of low Latino presence and in new Latino destinations; all that is required is for a substantial fraction of Latinos to live in blocks that are majority Latino. Thus, if displacement from even distribution in fact concentrates Latinos in predominantly Latino areas, this will be easy to detect with block-level data once the Latino population reaches approximately 100-200. At this size, it becomes demographically possible for uneven distribution to easily produce 6-10 majority Latino blocks. If Latino displacement from even distribution does not produce a non-trivial number of majority Latino blocks, the value of S will be low and will give a sociologically meaningful signal that Latino displacement from even distribution is "dispersed" instead of "concentrated".

Detailed quantitative case analysis of ethnic mix at the block-level in new destination areas (not reported here) indicates that it is typical for Latinos in new destinations to live co-mingled with Whites in neighborhoods (census blocks) that are predominantly White. Relatedly, GIS analysis of Latino residential distributions in new destinations reveals that well-defined areas of Latino predominance and concentration tend to be small and occasionally they are not present in any significant way. Based on this we can confidently state that the segregation patterns in new destinations are not like prototypical patterns

found in established areas such as Los Angeles even though D in nonmetropolitan areas is on average higher.

The high values for D in new destinations do not come about because Latinos are concentrated in readily identifiable Latino residential areas. Instead, they arise because the presence of even one or two Latino households in a neighborhood will tip it away from even distribution. What then occurs is that even though Latino households tend to be substantially dispersed across areas that are predominantly White, their presence still creates a pattern of consistent departure from even distribution. The typical magnitude of the departure from even distribution tends to be quantitatively small. But D is not sensitive to this. As noted above, D responds in equal degree to small and large departures from even distribution. Thus, D registers a high value based on displacement from even distribution that is extensive but small in quantitative magnitude and thus involves "thin dispersion", not "concentration". S assesses segregation differently in this situation; it takes low values because it is not sensitive to departures from even distribution that are quantitatively small.

The result in many new Latino destinations is a High-D, Low-S combination. This returns us to the question posed earlier. What is the basis for viewing this combination as sociologically important? Most if not all observers would agree that high-S situations – segregation patterns involving clear residential separation of groups and neighborhood polarization leading to ghettos and barrios– are sociologically compelling. There is no standard basis in the literature for describing why the typical situation seen in new destination areas is sociologically important in the same way. For example, in the High-D, Low-S situation, Latino residential fates are largely interwoven with those of Whites because Latinos live with, not apart from, Whites at the block level.

As seen in new destinations, scores for S also are consistently low "across the board" in areas of low Latino presence. In contrast, scores for S are consistently higher "across the board" in established areas. This suggests that White-Latino residential separation and neighborhood polarization may emerge when Latino populations become established at a "non-negligible" level. This speculation is consistent with the trends seen for new destinations and areas of low Latino presence. The trend for S in areas of low Latino presence is upward, but very slight. By definition, Latino population presence in these

areas is negligible and is not growing rapidly. In contrast, trends for S in new destinations are increasing vigorously. In the recent past, these areas had low Latino population presence, but that situation is rapidly changing and the Latino population in new destinations is non-negligible and moving steadily higher. S is going up at the same time.

How can the trend of increasing S in new destinations be reconciled with the trend of declining D? Careful inspection of individual cases and GIS analysis of residential patterns suggests a complex pattern of change. In many of the cases we examined in-depth analysis reveals a pattern of change in which neighborhoods with concentrated Latino presence (e.g., 70% or more) are emerging where previously they were absent or rare. Such neighborhoods are not yet where the typical Latino household lives, but they are becoming home to an increasing share of the Latino population. This pattern of change promotes upward movement in S. Additionally, areas of intermediate Latino presence (e.g., 30-69%) also are increasing in number and becoming home to an increasing share of the Latino population. This pattern of change also promotes upward movement in S.

At the same time a substantial portion of Latino households remain widely dispersed across predominantly White neighborhoods. But the rising proportion Latino for the city overall now makes it less likely that the presence of only one or two Latino households will be sufficient to "tip" an area from parity with the city level on proportion White (i.e., $p \geq P$) to below parity (i.e., $p < P$). This makes it possible for D to decline even as S is increasing. Bear in mind, S responds strongly when a neighborhood moves in the direction of becoming consolidated as a predominantly Latino area. This is not the case for D. D increases when area proportion White (p) for a given neighborhood falls below the city average (P). In new destination areas this often takes place at a very low level of Latino presence. Thereafter, D does not change as the area becomes consolidated as a Latino residential area because it has long since crossed the threshold from being above the mean on area proportion White to not. Stearns and Logan (1986) provide an excellent discussion of this kind of pattern. They characterize D as being more sensitive to the early stages of succession – the stage of initial Latino entry into White residential areas – and characterize S as being more sensitive to the middle and later stages of succession that will produce majority Latino neighborhoods.

That summary is apt for describing how D and S register changes in segregation when communities undergo a transition from low Latino presence to becoming new destinations with sustained Latino population growth. Since proportion White (P) is necessarily very high at the beginning of the sequence, D is prone to take higher values than S because D, but not S, responds strongly to slight departures from even distribution associated with the dispersed, often idiosyncratic settlement of early arriving Latino migrants. As the Latino population continues to grow, S increases as middle and late stages of succession ensue; that is, S steadily increases when the next rounds of Latino migrants disproportionately settle in areas of intermediate or high Latino presence (e.g., proportion Latino above 30%). In contrast, the value of D can remain stable or even fall during the early stages of succession. D is unlikely to rise because it responds to displacement from even distribution in accord with the principle of "a miss is as good as a mile"; thus, the impact of new Latino settlement on D is the same regardless of whether it is directed to predominantly Latino neighborhoods or to areas of light Latino presence. At the same time, the growth of the Latino population will cause many areas with stable but light Latino presence to "flip" to attaining parity with the city level on proportion White from previously falling short on this binary outcome.

The data suggest it is more common for processes of Latino residential succession and Latino population growth to produce the combination of declining values of D and increasing values of S in new destinations rather than established areas. The reason for this is that the pattern of declining D with increasing S rests on a delicate demographic balance. Initially, a substantial fraction of Latinos must be living in areas where Latino contact with Whites is high, but slightly below parity with city-wide proportion White. When this is so, increasing Latino population growth in other areas can cause proportion White for the city to fall, flipping the Latinos in high proportion White areas into parity with city-wide proportion White. But this complicated outcome cannot be sustained indefinitely. Continuing Latino growth in areas of high Latino presence reduces the overall fraction of Latinos residing in predominantly White areas. This makes it more likely that continued Latino population growth and residential succession will produce upward movements in both D and S.

A Generic Hypothetical Narrative of Declining D and Increasing S

We now offer a non-technical "composite" narrative to illustrate how new destination communities can start with group residential distributions that produce a discordant high D, low S combination and move toward the concordant patterns seen in established areas based on D trending down and S trending up. In the initial "Low Latino Presence" community, Latino settlement is limited and idiosyncratic rather than strongly structured. There are no enclaves or established Latino neighborhoods and anchors of Latino community structure (e.g., Spanish-language newspapers and churches, soccer clubs, immigrant legal and related services, Latino oriented businesses, etc.) are absent or incipient and yet to be well established. The residential distribution of the Latino population is widely dispersed, not concentrated. The value of D is high because citywide (pairwise) proportion White is very high ensuring that the presence of even a relatively small number of Latinos in an area will place the area into the category of falling short of parity with citywide levels of White presence (i.e., $y_i = 0$ based on $p_i < P$) even though area proportion White (p) may be very high for most Latinos.[19] Accordingly, the value of D is high because a large fraction of Latinos live in areas where $p_i < P$. In contrast the value of S is low because the areas where Latinos live are predominantly White so the White-Latino average difference in contact with Whites is slight.

The managers of a local meat (poultry, pork, beef, etc.) processing plant become aware of the availability and potential advantages Latino workers and enlist the aid of labor recruiters whose efforts produce a sizeable influx of Latino workers and families into the community. The recruiting arrangement that draws the Latino migrants involves the combination of employment at the meat processing plant and initial housing in a nearby mobile home park created (or expanded) to accommodate the new Latino workers. With the arrival of the Latino migrants, the value of citywide (pairwise) proportion White falls. This shifts many of the pre-existing areas with light Latino presence from the category of falling short of parity on (pairwise) area proportion White (i.e., $y = 0$ based on $p_i < P$) to the category of attaining parity or higher (i.e., $y = 1$ based on $p_i \geq P$). All else equal, this

[19] This is especially systematic and pronounced when D is calculated using the standard formulas which count individual Latinos as having contact with themselves. Thus, it is especially important to use the unbiased formulation of D in this situation.

causes the value of D to fall. However, this impact on D may be offset by the fact that the newly arrived Latinos live in areas where Whites are under-represented and, all else equal, this causes the value of D to increase. Intuitively, D will go down if Latinos in the first group are more numerous that the newly arrived Latinos. This in fact is a distinct possibility because by definition the high D, low S situation involves extensive Latino displacement from even distribution characterized by quantitatively small deficits on contact with Whites. In contrast, the value of S is clearly going to increase because S is especially sensitive to the newly emerging areas that have concentrated Latino presence (i.e., the trailer park and other areas where the recent migrants settled) and S is little affected by the small quantitative changes in contact with Whites experienced by the pre-existing, thinly-dispersed Latino population.

In the next phase of Latino population growth the emerging enclave areas receive a continuing stream of new migrants and grow in demographic importance as family members who initially stayed behind now join Latino households and as personal network connections bring additional kin, friends, and paesanos who disproportionately settle in and around the fledgling enclave. The "third wave" migrants have a similar impact as the second wave. Their arrival again causes the value of citywide proportion White (P) to fall and as before this causes D to decline as more areas where the initially dispersed Latino population resided are "flipped" into the category of attaining parity on area proportion White. Also as with the second wave, the third wave of Latino migrants locate disproportionately in enclave neighborhoods due to social connections and the attraction of emerging institutions serving the Latino population. This causes S to rise.

As this process continues, the new Latino destination is progressing toward being an area of established Latino presence. As this occurs, values of D and S transition from being discordant (high D, low S) as seen in areas of low Latino presence and in new destination areas to being concordant (medium or high on both) as seen in areas of established Latino presence. Along with this we would expect the role of discrimination to play increasing role in structuring Latino settlement and residential distribution. In the initial state of low Latino presence Latinos are "off the radar" and may be received indifferently or benignly by Whites who as a group have yet to develop widespread concerns about Latino population presence. Then as Latino population presence grows White sentiments of nativism and

prejudice also may grow and give rise to direct and indirect discrimination in housing. To the extent that this occurs, it would especially drive up values of S by serving to disproportionately concentrate Latinos in enclave neighborhoods.

In essence, this composite narrative describes the transition of a population from an initial stage of idiosyncratic, widely dispersed settlement and residential distribution to the first stages of enclave and barrio formation and then to subsequent stages of enclave consolidation with greater development of ethnic institutional structures. Ideally, we would draw on ethnographic and historical materials to document this kind of process. Obviously, this is not feasible in a study that follows over 1,400 areas, of which over three quarters are new destinations or areas of low Latino presence, over time. Exploratory case study analyses we have conducted readily turn up indicators that are consistent with the scenario in the composite narrative – for example, Latino population growth and concentration in census blocks containing a mobile home park located near a new poultry processing plant.[20] But there are limits to what can be established with public census data. Studies using restricted census data could pursue this more carefully.

In the meantime, we look for "signatures" in the data that will reveal whether White-Latino segregation follows the "prototypical" pattern observed in most areas where the Latino population is well established or fundamentally different patterns such as the one outlined in our composite narrative. The best "signature" we can identify is concordance or discordance in the levels and trends of D and S. When White-Latino segregation follows a prototypical pattern, D and S will tell similar stories and move in unison. The signature for the scenario we believe is more typical of new Latino destinations is the initially discordant "high D, low S" combination and that moves in the direction of greater concordance in the values of D and S as the Latino population becomes established and the initially high values of D moderate while the initially low values of S increase.

One thing is clear; the potentially complex trajectories for White-Latino segregation in new destinations cannot be discerned by tracking values of a single segregation index. Tracking D will allow one to detect Latino displacement from even distribution in the early stages of settlement. But D cannot reveal whether distinctly Latino residential areas are

[20] These involve in-depth analysis of census data, GAO reports and other government and policy reports on the meat processing industries, and web-based materials with information relating to community histories.

emerging. One must also examine S to determine whether uneven distribution involves "thin dispersal" of Latinos across predominantly White neighborhoods or the concentration of Latinos in predominantly Latino neighborhoods resulting in increasing residential separation of Whites and Latinos. Relying solely on D carries a risk that readers and researchers will mistakenly assume that prototypical patterns of White-Latino segregation are present when D takes high values in new Latino destinations when this is not typically the case. S is the better index for tracking the formation of enclaves and the extent to which they take on importance for Latino residential distributions. Accordingly, researchers who wish to know whether Latinos in new destinations live separately from Whites and experience residential outcomes that are distinct from those experienced by Whites should examine the level and trajectory of S. Considering D and S together provides added value based on the fact that seeing the initial discordant high D, low S combination transition to a more concordant D-S combination strengthens the evidence for the scenario.

Trends in Established Areas

We gave less attention to trends for D and S in areas of established Latino presence. Both D and S are trending down or holding steady in these areas. The fact that levels and trends for D and S are concordant in established areas suggests that the patterns beneath the surface may be less complicated. More detailed analyses not reported here lend further support for this view. The values of S for established areas are higher and average 30-40 across the board. This suggests that predominantly Latino neighborhoods typical of enclaves and barrios have been around for a while in these communities and become institutionalized. Based on this the downward trend for D and S in established areas could reflect a slow but steady process of spatial assimilation which is moderating the higher levels of segregation seen in earlier decades. This stands in contrast to the discordant levels and trends for D and S in new destinations. The patterns signal that White-Latino segregation is complex in new destinations. As we noted earlier, D and S may track each other closely under certain conditions – as is largely the case in established areas, but can diverge under others – as is largely the case in new destinations. In light of this, we argue it is important to acknowledge that the two indices yield different results, and avoid relying on only a single measure of segregation. As an additional point of information, unreported

analyses using the Theil entropy index, a widely used and respected measure of uneven distribution, yields results that closely parallel our findings for S.[21]

V. Summary and Discussion

In this study we have extended the literature on Latino residential segregation by providing new findings from the 2010 census data regarding patterns of variation in segregation over new Latino destinations and established areas of Latino settlement in both metropolitan and nonmetropolitan areas. In addition we introduced multiple methodological refinements to deal with the vexing problem of index bias and to better describe the complexities of White-Latino segregation in new destinations. In reflecting on our findings we are able to offer both substantive and methodological conclusions. Regarding substantive findings, when following previous research using the index of dissimilarity (D) we observe a trend of declining segregation in all types of areas. We see the highest levels of White-Latino segregation in new destination areas and also a more rapid rate of decline in segregation across decades. As measured by D, White-Latino segregation in new destination areas remains higher than in established areas of settlement in 2010, but the magnitude of the difference at this time is smaller than in previous decades.

When we introduce methodological refinements by using a version of D that is free of artifactual upward bias, the difference between new destinations and established areas is less pronounced and rates of decline in segregation are similar across all areas. Using the standard version of D (reviewed in the appendix but not discussed earlier), White-Latino segregation in new destinations is higher than in established areas by large margins; in 1990 by 8 points in metropolitan areas and 20 points in nonmetropolitan areas, in 2010 by 5 points in metropolitan areas and 12 points in nonmetropolitan areas. Using the unbiased version of D, the story is much different. In metropolitan areas segregation in new destinations is similar to segregation in established areas in 1990, 2000, and 2010. In nonmetropolitan areas segregation in new destinations is higher but by a reduced amount of about 8-10 points. Trends in segregation also differ across standard and unbiased

[21] We do not present full results for the Theil index (H) because, in comparison to D and S, the derivation and explanation of the unbiased version of H is more complex and beyond the scope of the present study.

versions of D. For example, for new destinations standard D declines by about 7 points between 1990 and 2010 in metropolitan areas and by over 9 points for nonmetropolitan areas. Using unbiased D, declines are much smaller averaging about 2 points for metropolitan areas and about 5 points for nonmetropolitan areas. We have greater confidence in the results using the unbiased version of D and conclude that well-known problems with D lead to upward bias that on average is greater in new destinations and earlier decades.

We also assessed segregation using the separation index (S) a measure of uneven distribution that is well suited to detecting the onset and state of group residential separation and neighborhood polarization. Our findings using S differ in important ways from the results obtained using D. It is expected that segregation scores will tend to run a bit lower when using S instead of D. But many of the differences between S and D observed here speak to more important substantive issues. Of particular note, segregation assessed using S is higher in established areas and lower in new destinations. In addition, S is falling or stable in established areas and rising rapidly in new destinations lead the gap between new destinations and established areas to shrink considerably over time. For example, in metropolitan areas in 1990 the average for unbiased S was 37.5 in established areas and 12.6 in new destinations, an average difference of about 25 points. The comparable figures in 2010 were 31.7 in established areas (down about 5.8 points) and 23.2 in new destinations (up about 10.6 points), for an average difference of about 8.5 points (down by about 16.5 points). Roughly similar patterns are also seen in nonmetropolitan areas.

S is less susceptible to artifactual upward bias than D. As a result, patterns and trends found using the unbiased version of S are not as dramatically different from the patterns and trends found using the standard version. But here as well we place greater confidence in the results based on the unbiased version.

Regarding the differences in findings across D and S, we argue that considering the results of both indices is highly informative. When segregation patterns are simple and follow "prototypical" patterns where displacement from even distribution and group separation go hand-in-hand, D and S will be concordant and will track each other fairly closely. When D and S diverge, segregation patterns are more complex. Logically, D can

take high values when S is low, but the reverse does not occur. As we noted earlier, this is possible because D can respond strongly to small or moderate differences in White-Latino contact that S will register in less dramatic fashion. The fact that D and S yield different results is clear evidence that White-Latino segregation patterns in new destinations are not simple. This is supported further by additional results not reported here which show that patterns of segregation using the Theil index, a well-respected and widely used measure, run parallel to the results we obtain using S. While D is familiar and widely used, it should not be viewed as an absolute benchmark as other measures are superior on technical grounds and also have attractive and sociologically meaningful substantive interpretations. Our results indicate that studies of White-Latino segregation should use multiple indices to guard against drawing conclusions that are sensitive to the choice of index. Future research should give attention to reconciling the different patterns found using different indices.

Our analysis here is primarily descriptive. However, it is useful to note that familiar theories provide a preliminary basis for interpreting and speculating about the patterns and trends we document. As is well known, the geographical dispersal of Latinos into new areas of settlement has been driven in large part by the foreign-born population and by native-born migrants. Our findings that D is higher in new destination areas is consistent with the possibility of a new migrant congregation effect wherein initial Latino "pioneers" form small "micro-clusters" when a few Latino households locate in the same neighborhood and/or when Latino migrants settle in households that are above average in size. This places a large fraction of Latinos in neighborhoods where proportion White falls short of parity with the city level of proportion White even though the neighborhoods are predominantly White, often by overwhelming margins. D may then fall over time as these early arriving Latinos begin to find more suitable housing arrangements that moderate Latino over-representation in many neighborhoods. For example, households that initially are large may subdivide with some members moving to other neighborhoods. When combined with steadily increasing Latino presence in the city, this can serve to shift some Latino households into parity with contact with Whites. This would be consistent with the observed patterns of D which indicate that in new destinations the aspect of segregation it registers is declining over time.

Our findings from S also can be interpreted in light of prevailing theories of White-minority segregation. The finding that scores on S are lower in new destinations is consistent with prior theory and research suggesting that discrimination effects may be weaker in new destination areas, at least in the early stages of Latino arrival when Latino size is negligible and Latinos do not typically encounter institutionalized patterns of differential treatment. Here it may be useful to consider possible parallels with the earliest stages of the Great Migration that brought Blacks to urban areas of the North and Midwest. Lieberson (1980) holds that White-Black segregation in these new destinations for Blacks was modest at the onset of this historic demographic event but in just a few decades it increased dramatically as the Great Migration brought large and rapid increases in the relative size of Black populations in many Northern and Midwestern urban areas. This trend created a demographic dilemma for Whites who never welcomed African Americans as neighbors. When White-Black segregation is low, increases in the size of the minority population will lead to substantially increased White residential contact with Blacks. But of course that did not occur. Values of P* measures of White contact with Whites and White contact with Blacks held relatively steady even as percent Black in the population was increasing. This required that uneven distribution increase dramatically, which it did (Lieberson 1980). Several mechanisms contributed to this, but discrimination and place stratification dynamics were the most important.

A full exploration of the potential parallels for White-Latino segregation in communities experiencing rapid growth in the Latino population is beyond the scope of the present analysis. But future studies may investigate whether segregation may increase in these communities. These patterns would be consistent with theories hypothesizing that increases in relative minority size spur inter-group competition which evokes higher levels of discrimination and other place stratification dynamics (Lieberson 1980; Blalock 1967; Blalock 1957; Blalock 1956; Fossett and Kiecolt 1989; Fossett and Siebert 1996). Perhaps, like Blacks arriving in northern urban areas in the early decades of the 20th Century, Latinos arriving in new destination areas experience fewer initial constraints on residential options because discrimination and other place stratification dynamics are not yet well established. If so, one would expect then that White-Latino segregation would increase after Latino presence becomes non-negligible and Latino group proportion grows rapidly.

This would occur if subsequent sustained Latino population growth stimulated discrimination and other place stratification dynamics that serve to constrain Latino residential options.

What does this suggest for White-Latino segregation in current and future new destinations? One conjecture we offer is that, as Latino populations in current new destinations grow and transition into a well-established Latino presence, White-Latino segregation will become simpler in form and will converge on the "prototypical" patterns commonly seen in established Latino areas. Thus, we expect the complexity of extensive but dispersed Latino displacement from even distribution – which produces the high-D, low-S combination found in new destinations – will give way to a pattern of Latino displacement that separates the group from Whites and concentrates Latinos in distinctly Latino areas – resulting in the prototypical pattern of concordant values on D and S seen in areas of established Latino presence. If in fact values of D and S in new destinations converge on values observed in established areas, levels for S will continue to increase in the future until S "catches up" to the higher levels seen in established areas. For metropolitan areas levels of unbiased D in new destinations already are comparable to levels seen in established areas. But in nonmetropolitan areas levels of D are higher in new destinations than in established areas so convergence to the pattern in established areas may bring further reductions in D in new destinations.

Of course other dynamics will be playing out simultaneously. In particular, the role of spatial assimilation dynamics should be considered. Latino populations in new destinations tend to have greater cultural and socioeconomic differences from Whites. Acculturation and improvement in socioeconomic standing over time could initiate a spatial assimilation process in new destinations that will moderate segregation even as sustained Latino population growth potentially fosters the opposite effect, especially when Latino population growth is fueled by substantial immigration instead of fertility and migration of native-born Latinos.

A second conjecture we offer is that Latino population growth and dispersal nationally will continue to create more new Latino destinations even as many current new destination areas are transitioning into being areas of established Latino settlement. In these emerging new destination areas we would expect to see a more complex pattern of

segregation where dispersed Latino displacement from even distribution creates uneven distribution without residential separation and neighborhood polarization (i.e., the high-D, low-S combination).

The growth and regional dispersal of the Latino population is one of the more profound demographic transformations taking place in the United States. New Latino destinations will be an important part of this unfolding story for decades to come. We believe our study makes useful contributions to the research literature documenting levels and trends in White-Latino segregation in these areas based on implementing strategies of analysis that help clarify aspects of segregation in new destinations that previously have not been recognized. Our use of unbiased formulations of indices of uneven distribution helps deal with the vexing problem of index bias that complicates analysis of levels and trends in White-Latino segregation in new destinations, particularly in nonmetropolitan settings. Our strategy of examining levels and trends in both the dissimilarity index and the separation index helps identify and clarify substantively important differences between White-Latino segregation in new destinations compared with established areas that would be overlooked if one examined only a single index. We encourage other researchers to consider these practices.

Appendix: Dealing with Index Bias

As we note in the main body of our paper, all "standard" indices of uneven distribution are prone to upward bias. Studies investigating White-Latino segregation in new destinations must acknowledge and deal with this issue because the levels of bias can be non-negligible, making index scores untrustworthy and difficult to compare. This particularly true when segregation is assessed at small spatial scales as is necessary for accurately assessing segregation in nonmetropolitan new destinations. One part of the problem is that scores for both D and S are subject to higher levels of bias when the area-specific group counts used in index calculations are small (Carrington and Troske 1997; Winship 1977).

Bias is considerably more complex and problematic for D than for S. Winship (1977) provides analytic formulas for assessing when bias is likely to be a serious concern. These establish that expected bias for D is always higher than expected bias for S and that the bias for D will be especially problematic when relative group size is imbalanced. For example, if block size is 50, the expected value of S (i.e., E[S]) is 2.00 under all conditions. In contrast, the expected value of D (E[D]) is not constant under all conditions; it varies systematically with group ratios. If Whites and Latinos are equal in group size such that proportion White for the city (P) is 0.50, the expected value of D (i.e., E[D]) is 11.23 (based on Winship's exact formula). Note that this is the lowest value E[D] can take and it is some 5 times higher than the value for E[S]. If proportion White for the city (P) is 0.65, typical in established Latino areas, the expected value of D is only slightly higher at 11.89. However, if proportion White for the city (P) is 0.98, typical in new destinations, the expected value of D is much, much higher at 37.2. Similar results obtain using Carrington and Troske (1997) approach of estimating bias by conducting bootstrap sampling simulations with census block data to assess when bias may lead to non-negligible distortion of index scores.

Concern about the role of bias is especially relevant for our study because index bias for D, but not S, varies systematically across established areas and new destinations because relative group size for Whites and Latinos is more imbalanced in new destinations. Evidence for this is presented in Appendix Table 1 which reports expected values of D

(E[D]) computed using analytic formulas set forth in Winship (1977).[22] We also obtained expected values of D based on bootstrap simulations (per Carrington and Troske 1997) but do not report them because they close track the results reported in Appendix Table 1. The primary finding documented here is that expected values of D based on block level data are never low and they are substantially higher in new destinations and areas of low Latino presence because White-Latino comparisons in these areas are highly imbalanced. A secondary finding is that expected values of D are relatively stable over time in areas of established Latino presence but are trending down sharply in new Latino destinations. The reason for this is that the Latino population in new destinations is growing rapidly and the White-Latino population imbalance – which promotes bias in D – is moderating over time.

Appendix Table 1 also documents why concerns about the role of bias are not as great for the separation index (S). It shows that the expected values of S are always much lower than the expected values of D. It also shows that expected values of S are not trending over time, reflecting the fact that bias in S is not affected by changes in group size. Finally, Appendix Table 1 also documents that expected values of both D and S are generally lower in metropolitan areas and higher in non-CBSA counties. This is due to pairwise population counts at the block level being a bit higher in metropolitan areas.

Until recently, direct solutions to the problem of index bias were not available. Researchers instead have tried to deal with the issue indirectly by adopting ad hoc practices such as excluding potentially problematic cases or weighting cases differentially to minimize the impact of problematic cases. These procedures are unsatisfactory for an obvious reason. They do not provide researchers what is needed – namely, index scores for individual cases that that are not distorted by bias.[23] At best, they discount or exclude bad scores; they do not yield more accurate measurement of individual cases. Accordingly, these procedures do not allow one to take account of bias when assessing segregation in a particular city, or when following segregation in a single city across two points in time, or when comparing scores across two cities. The individual scores in question continue to incorporate bias and may be problematic and misleading.

[22] The formula used for E[D] is Winship's "exact" formula.

[23] Indeed, it is impossible to establish the effectiveness of ad hoc procedures used to deal with the problem of index bias without first having trustworthy unbiased scores on a case-by-case basis.

Fossett (forthcoming) and Fossett and Zhang (2011) introduce a more attractive option for dealing with the problem of index bias; they offer a direct solution for obtaining trustworthy scores for individual cases based on revised formulations of D and S that are "unbiased". The unbiased versions of S and D are attractive on several counts. Most importantly for the needs of our study, they yield scores that are reliable and trustworthy when measuring segregation for small groups using small spatial units such as census blocks. They are more trustworthy because, in contrast to standard versions of D and S, their expected values under random assignment are zero (0.0) under all conditions. They are reliable because their standard errors and confidence intervals (readily available based on the difference of means formulation) are similar to those for standard versions of D and S.[24] In addition, and importantly, the unbiased versions of D and S preserve continuity with past research. Researchers can continue to use familiar indices and interpret them in a manner that is straightforward. In some cases using unbiased versions of D and S will validate results from past research because scores for the standard and unbiased versions of D and S often are quite close. As a result, one is never worse using the unbiased measures of D and S. When bias is not a problem – and sometimes it in fact is negligible, the unbiased versions of D and S yield scores that are almost identical to the scores obtained using standard versions of D and S. However, scores for unbiased versions of D and S can differ dramatically from scores for standard versions of D and S when bias is non-negligible. This situation occurs frequently in our study. In such situations, scores for the unbiased versions of D and S are superior and should be used as they provide measurements that are more trustworthy for assessing levels of uneven distribution between groups.

Space constraints limit us to only an abbreviated discussion of the formal basis for the unbiased versions of D and S. Fortunately, the difference of means computing formulas for D and S introduced earlier provide a basis for identifying the source of index bias and the means for eliminating it. The critical term in the difference of means computing formulas for D and S is (pairwise) area proportion White (p_i) which registers individual exposure to

[24] The standard and unbiased versions of D and S can be given as differences of means. In this framework it is straightforward to obtain standard errors and confidence intervals for values of D and S. These are essentially identical for the standard and unbiased versions of D and S.

Whites. Fossett (forthcoming) and Fossett and Zhang (2011) establish that bias in standard versions of D and S traces to a simple practice; computing individual exposure to Whites is (p_i) using counts for area *population* instead of counts for *neighbors*. This can be broken down as follows.

In the standard versions of D and S the calculation contact with Whites (p) for an individual is given as (omitting area subscripts) $p = (w/n)$ with $n = w + l$ where "w" and "l" denote area population counts for Whites and Latinos, respectively. This result is based on *area population* which includes the individual. The value of p can be expressed as the sum of two components contact with White neighbors (p_n) and self-contact with Whites (p_s). Denote neighbors as w' and l', the term n can be given by $n = w' + l' + 1$, with the value 1 broken out to reflect the contribution of the individual to area population. Then give contact with White neighbors as $p_n = (w'/n)$ and denote self contact with Whites as "p_s" given by (s/n) where s (for self is White) is scored 1 if the individual is White and 0 otherwise. Contact with Whites based on area population can now be given as $p = p_n + p_s = (w'/n) + (s/n)$.

Contact with White neighbors (i.e., $p_n = w'/n$) takes the same value for Whites and Latinos who live in the same area. Significantly, it is obvious that the expected value of this term under random assignment is the same for Whites and Latinos so the expected value of the White-Latino difference on p_n is zero.

In contrast, the behavior of self-contact with Whites (i.e., $p_s = s/n$) is fundamentally different. Its value differs systematically between Whites and Latinos. It is always 1/n for Whites and always 0/n for Latinos, so the expected value of the White-Latino difference on p_s is 1/n. This result for the expected value of S under random assignment also is noted in Winship (1977:1064). Thus, considered from the vantage point of the difference of means formulation of S, bias in the standard version of S traces to the impact of self contact with Whites (p_s) on the White-Latino difference in mean contact with Whites based on area population (p).

Bias in D also traces to the impact of self contact with Whites (p_s) on the White-Latino difference in proportion residing in areas where $p \geq P$, the outcome that D registers. Contact with Whites among neighbors (p_n) takes the same value for Whites and Latinos residing in the same area. So the expected value for the probability of residing in areas

where $p \geq P$ is the same for Whites and Latinos and would result in an expected value of zero (0) for D. In contrast, self contact with Whites (p_s) systematically increases p for Whites but not Latinos and thus produces more $p \geq P$ outcomes for Whites. This leads the expected value of D to take positive values that can be high under some conditions.[25]

From this it is easy see why index bias is greater when segregation is measured using spatial units with smaller populations. Census tracts have large populations (e.g., typically 4,000 persons or more). As a result, the magnitude of the White-Latino difference on self contact with Whites is small ($p_s = 0.00025 = 1/4000$) and has negligible impact on the values of S and D. In contrast, census blocks have much smaller populations (e.g., typically around 40, but sometimes lower) and the magnitude of the White-Latino difference in self contact with Whites is non-trivial ($p_s = 0.025 = 1/40$) and can potentially lead to problematic levels of bias in S and especially D.

Fossett (forthcoming) and Fossett and Zhang (2011) show that bias in D and S can be eliminated by implementing a simple refinement in the way contact with Whites is calculated. The refinement is to calculate contact with Whites based on *neighbors* instead of *area population*; that is, calculate unbiased contact with Whites based on $p' = (w'/n')$ where $n' = (w' + l')$. Then substitute p' for p when computing D and S using the difference of means computing formulas given earlier. The new unbiased versions of D and S are designated as D' and S'. Both take expected values of zero (0.0) under random assignment. The reason for this is straightforward; under random assignment the expected value for proportion White among neighbors (p') is the same for White and Latino households. In contrast, proportion White for area population (p) is systematically higher for Whites and lower for Latinos because White and Latino individual contributions to area ethnic mix is fixed and in opposite directions leading to elevated averages on (p) for Whites and depressed averages on (p) for Latinos.

Appendix Tables 2 and 3 present the averages for scores for the "unbiased" and "standard" versions of the dissimilarity index and the separation index, respectively. Not surprisingly, the unbiased scores are lower across all comparisons. Significantly, the

[25] The expected bias in D is not a simple constant as in the case of S. Bias for D is a nonlinear function of imbalance in group size, taking its minimum value when groups are equal in size and increasing to higher levels at an increasing rate as group size becomes more imbalanced.

discrepancy between the scores for the standard and unbiased versions of the indices is not uniform, especially in the case of the dissimilarity index. This is documented in Appendix Table 4 which presents the averages of the difference between the standard and unbiased scores. The primary finding here is simple and quite important for our study. It is that the average differences between the standard and unbiased scores for D are much larger in new Latino destinations and areas of low Latino presence in comparison to areas of established Latino presence. Another primary finding is that average differences between D and D' are stable or trending up over time in areas of established presence and are trending down over time in new Latino destinations. A secondary finding is that average differences between D and D' are consistently larger outside of metropolitan areas.

The patterns for the separation index (S) are simpler and carry less substantive import. Average differences between S and S' are generally small and do not vary over time or across established Latino areas and new Latino destinations. Average differences are larger outside of metropolitan areas. Overall, however, the variation in magnitude of the difference between S and S' is modest in comparison to that observed for the difference between D and D'.

The empirical patterns documented here lead to a simple conclusion. There is compelling evidence to believe that index bias complicates the study of how the dissimilarity index (D) varies across time and types of areas. In light of this, we only discuss unbiased scores for D and S in the body of our paper.

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Table 1. Percentage Change in Population for Total, Latino, and Non-Latino Populations by Decade and Area Type

	Metropolitan Areas			Nonmetropolitan — Micropolitan Areas			Nonmetropolitan — Outside Micropolitan Areas		
Population	1990-2000	2000-2010	1990-2010	1990-2000	2000-2010	1990-2010	1990-2000	2000-2010	1990-2010
Total	10.0	10.8	21.9	11.9	5.9	18.5	7.8	1.8	9.8
Latino	52.6	42.8	118.0	70.2	46.1	148.6	58.9	41.4	124.6
Non-Latino	5.2	5.6	11.1	9.4	3.3	13.3	6.3	0.1	6.3

Source: Decennial Census PL-94 File 1990 and Summary File 1 in 2000 and 2010.

Table 2. Distribution of Cases by Latino Population Presence and Type of Area in 2000

Latino Population Presence	Metro CBSAs	Micro CBSAs	All CBSAs	Non-CBSA Counties	All Areas
Established Areas 30% Latino	22	23	45	62	107
Established Areas 10-29% Latino	43	43	86	61	147
New Latino Destinations	229	329	558	318	876
Low Latino Presence	87	107	194	97	291
Total	381	502	883	538	1,421

Table 3. Trends in White-Latino Segregation 1990-2010 for Two Indices of Uneven Distribution by Latino Population Presence and Trend and Type of Area*

	Dissimilarity Index (D)			Separation Index (S)		
Latino Presence and Decade	Metro CBSAs	Micro CBSAs	Non-CBSA Counties	Metro CBSAs	Micro CBSAs	Non-CBSA Counties
Established Latino Area with Latino Presence of 30% or More						
1990	55.3	53.7	56.4	37.5	36.2	41.8
2000	53.1	50.6	53.6	34.9	33.1	40.2
2010	51.1	48.6	50.9	31.7	31.0	37.3
Established Latino Area with Latino Presence of 10-29%						
1990	52.1	52.6	56.4	32.8	31.2	35.2
2000	53.5	50.5	55.0	36.1	31.8	35.5
2010	51.2	47.1	52.1	34.7	30.6	35.9
New Latino Destinations						
1990	54.8	62.3	66.2	12.6	12.7	17.5
2000	55.2	60.5	64.0	20.4	19.7	23.1
2010	52.6	56.6	61.1	23.2	21.4	23.9
Areas of Low Latino Presence						
1990	53.5	57.1	60.6	13.6	11.5	18.1
2000	50.5	51.8	54.7	15.0	12.0	18.3
2010	47.9	49.0	54.3	16.6	13.1	19.4

* Index scores are for the based versions of D and S.

Appendix Table 1. Average Expected Values for Standard Versions of the Dissimilarity Index (D) and the Separation Index (S) for White-Latino Segregation 1990-2010 by Latino Population Presence and Type of Area*

	Expected Value Dissimilarity Index (E[D])			Expected Value Separation Index (E[S])		
Latino Presence and Decade	Metro CBSAs	Micro CBSAs	Non-CBSA Counties	Metro CBSAs	Micro CBSAs	Non-CBSA Counties
Established Latino Area with Latino Presence of 30% or More						
1990	11.9	17.5	21.4	1.8	3.4	6.1
2000	12.2	19.3	24.6	1.8	4.0	8.2
2010	13.0	20.5	26.2	1.9	4.5	8.8
Established Latino Area with Latino Presence of 10-29%						
1990	13.3	20.2	29.5	1.7	3.9	7.7
2000	12.2	18.7	29.1	1.9	4.2	9.1
2010	11.7	18.9	29.8	2.0	4.8	10.7
New Latino Destinations						
1990	51.6	72.7	75.0	2.5	4.0	5.8
2000	35.7	53.8	58.2	2.5	4.1	5.9
2010	27.7	44.7	55.3	2.7	4.6	7.0
Areas of Low Latino Presence						
1990	45.0	59.6	63.4	2.2	3.6	6.4
2000	40.8	54.8	57.4	2.4	4.0	6.9
2010	34.5	49.7	60.2	2.8	4.6	9.1

* Expected values E[D] and E[S] computed per Winship (1977) using Winship's "exact" formula for D.

Appendix Table 2. Average Levels of White-Latino Segregation 1990-2010 for Unbiased and Standard Versions of the Dissimilarity Index by Latino Population Presence and Type of Area

	Unbiased Dissimilarity Index (D')			Standard Dissimilarity Index (D)		
Latino Presence and Decade	Metro CBSAs	Micro CBSAs	Non-CBSA Counties	Metro CBSAs	Micro CBSAs	Non-CBSA Counties
Established Latino Area with Latino Presence of 30% or More						
1990	55.3	53.7	56.4	56.8	56.9	60.6
2000	53.1	50.6	53.6	54.9	54.6	59.6
2010	51.1	48.6	50.9	53.3	53.3	58.4
Established Latino Area with Latino Presence of 10-29%						
1990	52.1	52.6	56.4	53.9	56.2	62.6
2000	53.5	50.5	55.0	55.2	53.9	61.2
2010	51.2	47.1	52.1	52.8	51.3	59.6
New Latino Destinations						
1990	54.8	62.3	66.2	65.3	77.3	80.6
2000	55.2	60.5	64.0	62.6	71.2	74.9
2010	52.6	56.6	61.1	58.1	65.8	71.8
Areas of Low Latino Presence						
1990	53.5	57.1	60.6	63.3	69.5	73.5
2000	50.5	51.8	54.7	60.8	65.4	68.9
2010	47.9	49.0	54.3	56.6	61.7	69.0

Appendix Table 3. Average Levels of White-Latino Segregation 1990-2010 for Unbiased and Standard Versions of the Separation Index by Latino Population Presence and Type of Area

	Unbiased Separation Index (S')			Standard Separation Index (S)		
Latino Presence and Decade	Metro CBSAs	Micro CBSAs	Non-CBSA Counties	Metro CBSAs	Micro CBSAs	Non-CBSA Counties
Established Latino Area with Latino Presence of 30% or More						
1990	37.5	36.2	41.8	38.5	38.0	44.5
2000	34.9	33.1	40.2	36.0	35.2	43.7
2010	31.7	31.0	37.3	32.9	33.6	41.7
Established Latino Area with Latino Presence of 10-29%						
1990	32.8	31.2	35.2	33.7	33.1	38.4
2000	36.1	31.8	35.5	37.0	33.7	39.2
2010	34.7	30.6	35.9	35.7	32.9	40.2
New Latino Destinations						
1990	12.6	12.7	17.5	14.4	15.4	20.8
2000	20.4	19.7	23.1	22.1	22.1	26.1
2010	23.2	21.4	23.9	24.8	23.9	27.3
Areas of Low Latino Presence						
1990	13.6	11.5	18.1	15.1	13.8	21.5
2000	15.0	12.0	18.3	16.8	14.7	22.2
2010	16.6	13.1	19.4	18.6	15.9	24.1

Appendix Table 4. Average Differences between Standard and Unbiased Versions of Two Indices of Uneven Distribution for White-Latino Segregation 1990-2010 by Latino Population Presence and Type of Area

	Dissimilarity Index (D-D')			Separation Index (S-S')		
Latino Presence and Decade	Metro CBSAs	Micro CBSAs	Non-CBSA Counties	Metro CBSAs	Micro CBSAs	Non-CBSA Counties
Established Latino Area with Latino Presence of 30% or More						
1990	1.5	3.2	4.2	1.0	1.8	2.7
2000	1.8	4.0	6.0	1.1	2.2	3.6
2010	2.2	4.7	7.5	1.2	2.6	4.4
Established Latino Area with Latino Presence of 10-29%						
1990	1.9	3.6	6.3	0.9	1.9	3.3
2000	1.6	3.5	6.2	1.0	1.9	3.7
2010	1.6	4.2	7.5	1.0	2.3	4.4
New Latino Destinations						
1990	10.5	15.1	14.4	1.8	2.7	3.4
2000	7.3	10.8	10.9	1.6	2.4	3.0
2010	5.6	9.2	10.7	1.6	2.5	3.4
Areas of Low Latino Presence						
1990	9.8	12.4	12.9	1.5	2.3	3.4
2000	10.3	13.6	14.2	1.8	2.7	3.9
2010	8.7	12.7	14.7	1.9	2.9	4.7