Published in final edited form as:

Sociol Q. 2018 ; 59(1): 128–144. doi:10.1080/00380253.2017.1383140.

LINKING RACIAL COMPOSITION, BLACK-WHITE INEQUALITY, AND REGIONAL DIFFERENCE: THE ROLE OF MIGRATION

Heather A. O'Connell* [Assistant Professor]

Sociology Department, Louisiana State University

Abstract

The percent black-inequality relationship and the unique position of the South have been cornerstones of research on US racial inequality. Using an innovative methodological approach, I address how migration contributes to our understanding of the percent black-inequality relationship. I find that the educationally selective migration of blacks and whites significantly contributes to the percent black-inequality relationship via compositional changes. However, any explanatory power is limited to the non-South. Migration plays a role in understanding this relationship, yet processes related to black population concentration still generate black disadvantage anew, particularly within the South.

Keywords

racial inequality; percent black; racial threat; spatial processes; migration; region

Migration is often viewed as a purely demographic process but it also has important consequences for understanding social stratification. Drawing on this understanding of migration, previous research has attended to how migration contributes to the production of various social inequalities (Boustan 2009; Flippen 2010; Fossett, Galle, and Burr 1989; Hall, Crowder, and Spring 2015; Lieberman 1980; Nord 1998; O'Connell and Shoff 2014; Pearce and Dorling 2010; Quillian 1999; Sampson and Sharkey 2008; Shin 1978; Wilson, Rebhun, and Rivas 2011). This body of work has primarily focused on how migration affects the level of inequality. However, migration could also affect inequality *relationships*. This possibility has received particularly notable attention in research on the percent black-inequality relationship (Blalock 1957; Beggs et al. 1997; Fossett et al. 1989; Johnson, Pais, and South 2012). Building on that work, I consider the role of migration in explaining the relationship between black population concentration and black-white educational attainment disparities.¹

The following analysis centers on an innovative methodological approach that focuses on observed migration flows and subsequently isolates the compositional contribution of inter-county migration to local black educational disadvantage. I provide evidence on how

*Department of Sociology, 126 Stubbs Hall, Louisiana State University, Baton Rouge, LA 70803, hoconnell@lsu.edu.

¹I use “inequality”, “disparities”, and “black disadvantage” interchangeably despite their nuanced connotations. Although I aim to speak to issues of inequality, my data more accurately reflect disparities because my outcome shows aggregate differences and cannot demonstrate the source of that difference. And disparities could refer to either a white or black disadvantage, but given that disparities are more often to the disadvantage of blacks I use “disparities” and “inequality” to refer to black disadvantage.

selective migration can affect the *level* of inequality in a county, as well as how it contributes to the *relationship* between black population concentration and racial inequality. In addition, I extend this analysis to consider possible distinctions between the South and non-South – an empirical necessity as well as a theoretical contribution to research on why the percent black-inequality relationship is stronger in the South than the non-South (e.g., Blalock 1956, 1957; Curtis and O'Connell *forthcoming*; Wilcox and Roof 1978). I argue that migration is a significant process for understanding both the level of black-white inequality in a county and the percent black-inequality relationship. However, regional distinctions remain pronounced and processes linked to black population concentration continue to be important for understanding the (re)production of black-white educational attainment inequality even after accounting for the compositional impact of recent migration. Migration is only part of the explanation for the observed spatial patterning of black-white inequality.

BLACK AND WHITE INTERNAL MIGRATION AND THE PERCENT BLACK-INEQUALITY RELATIONSHIP

Migration is a viable contributor to inequality because it is a highly selective process (Lee 1966). Those who migrate are often different in important respects from those who do not migrate, including based on their educational attainment (see e.g., Fernandez et al. 2007; Hunt, Hunt, and Falk 2008; Hunt, Hunt, and Falk 2012). The selectivity of migration, given its imbalance in migrant characteristics, could shift the local *level* of inequality through changes to the population composition (see e.g., Boustan 2009; Fossett et al. 1989). However, migration could also affect *relationships* through the selection of different types of destinations by migrants with different characteristics (e.g., Pendergrass 2013; White et al. 2005; also see Pearce and Dorling 2010).

Research on the consequences of migration has been particularly concerned with the extent to which the mass movement from the southern to the northern region of the United States (i.e., the Great Migration) affected the socioeconomic position of blacks relative to whites. Scholars expected that black and white migrants were moving into more favorable economic circumstances by migrating North, and they argued that this shift in exposure could reduce black-white economic disparities nationally (Boustan 2009; Fossett et al. 1989; for an alternative perspective see Eichenlaub, Tolnay, and Alexander 2010). This type of research focuses on how migration affects racial inequality through exposure to economic opportunities, but migration can also affect local black-white inequality through compositional changes. Research has brought attention to this possibility by examining the educational selectivity of migrants during both the Great Migration and the Great Return Migration, which is a counter stream of migrants moving from the North to the South (see e.g., Hunt, Hunt, and Falk 2008; Long and Hansen 1977; Tolnay 2003). Moreover, recent research has focused explicitly on this compositional argument by examining how the characteristics of return migrants have affected the level of black-white economic inequality in the South as a whole (Curtis *forthcoming*). In the present study, I focus on the compositional impact of migration on the level of black-white educational inequality, and I extend previous research that examined the consequences of migration at the national and regional levels by focusing on the more localized county level.²

Consideration of how migration affects county levels of black-white inequality raises questions about how migration could also affect the county-level *relationships* that we observe with that inequality. Migrant destination selection is significantly related to individual-level, migrant characteristics, including her/his race and educational attainment (see e.g., Pendergrass 2013; White et al. 2005), but where migrants end up is also related to the characteristics of possible destinations. Research suggests that one important place characteristic is racial composition. Black migrants are generally attracted to destinations with larger pre-existing concentrations of blacks (Frey and Liaw 2005; Vigdor 2002; for exceptions see Burr et al. 1992; Lee and Roseman 1999). These same scholars also suggest that the draw of a co-ethnic population would differ by educational attainment, but that theoretical argument has received limited empirical support. Critically, there is evidence that white migrants respond differently to local black population concentration than do black migrants. Burr et al. (1992) find that white in-migration is significantly lower to metropolitan areas with larger black populations, and that white out-migration is significantly higher from those same areas (for similar results see Lee and Roseman 1999). The movement of different types of migrants to different types of destinations may significantly affect the educational composition of both the black and white populations, and subsequently the distribution of black-white educational attainment disparities. When migration affects the spatial distribution of inequality in relation to a specific place characteristic, migration could be affecting the relationship between inequality and that place characteristic.

This type of thinking, where migration is given a central role in understanding relationships that manifest spatially, has re-emerged recently within research on the percent black-inequality relationship. In their study of earnings inequality, Johnson, Pais and South (2012) argue that migration helps explain the percent black-income inequality relationship. Similarly, Blalock (1957) acknowledged the potential explanatory role of migration in one of his early empirical studies in the 1950s (also see Beggs et al. 1997; Fossett et al. 1989). These scholars have highlighted black migration in particular and suggest that, dependent on their level of educational attainment, blacks choose to live in places with differing black population sizes, and thus drive the differential concentration of black disadvantage across places (Beggs et al. 1997; Blalock 1957; Johnson et al. 2012). However, black-white inequality is affected by the outcomes of both blacks and whites. White migration may also have a compositional impact on the spatial distribution of black-white inequality, and that impact may run counter to the explanatory role suggested previously (see especially Burr et al. 1992). I argue that we need to consider the impact of both black and white migration as well as the potential suppressing role of migration when understanding the percent black-inequality relationship. In addition, previous efforts to examine the contribution of migration to the percent black-inequality relationship relied on a national sample without assessing regional differences and centered on fixed-effects models that focus on individuals (Johnson et al. 2012). I extend previous research by examining potential regional differences between

²Frey's (1979, 1980) work has also addressed the local, compositional consequences of migration by examining the impact of white migration on metropolitan areas. The primary distinction between his work and the present study is my focus on local levels of black-white educational inequality rather than on local white educational composition (Frey 1979) and changes in the economic tax base of metropolitan areas (Frey 1980).

the South and non-South and by directly examining the contribution of both black and white migration using aggregate migration flows.

In summary, I derive several broad expectations from the extant literature on migration and black-white inequality. First, the differential movement of blacks and whites across counties will change the level of black-white educational attainment inequality in a county. Local levels of inequality are not static and are directly impacted by compositional shifts driven by migration (also see especially Curtis *forthcoming*). Second, to the extent to which the compositional impact of black and white migration differs across depending on black population concentration, I expect that those compositional shifts in the level of inequality will contribute either positively *or* negatively to the percent black-educational inequality relationship. A positive contribution (i.e., an explanatory role) would result from migration that concentrates higher levels of black educational attainment disadvantage in high percent black counties and lower levels of black educational attainment disadvantage in low percent black counties (also see especially Blalock 1957; Johnson et al. 2012). This type of migration would help create the positive association that we observe between percent black and educational attainment disparities at the county-level. In contrast, migration could shift the original spatial distribution of black-white educational inequality by de-concentrating black educational attainment disadvantage in high percent black counties and amplifying it in lower percent black counties. This negative contribution (i.e., suppressing role) of migration would obscure any pre-existing positive association between percent black and educational inequality. Finally, I explore regional differences in how the compositional contribution of migration helps us understand the production of black-white educational inequality by focusing on the South and non-South separately in addition to a national county-level analysis.

DATA

My focus is on how black and white internal migration affects our understanding of local black-white inequality. Therefore, I rely on population data for counties in the contiguous United States from the 2000 Census – the most recent year with the necessary migration flow data (described below). Counties are the smallest unit available for these migration data. In addition, counties are a socially meaningful unit of analysis for examining black-white inequality because they encompass multiple relevant social spaces, including economic, social, educational, and political institutions (Irwin 2007). Counties (and other geographies) can only approximate these social spaces, but they are the best approximations available that can be attached to nationally representative data.

Black-White Educational Disparities and Black Population Concentration

I use information from the 2000 US Census long form, or summary file 3 (SF3), to establish baseline estimates of county educational attainment disparities and of black population concentration (US Census Bureau, 2000 Census). These estimates serve as the point of comparison in my counterfactual analysis. Unlike other sources of educational attainment data (i.e., the Current Population Survey [CPS]), the Census figures include the institutionalized population. Individuals in the institutionalized population range from

college dormitory residents, military personnel, to prison inmates. Including the institutionalized population in our estimates of black-white inequality provides a more complete picture of the extent of that inequality (see especially Pettit 2012), but it is unclear how this segment of the population affects the spatial distribution of inequality across counties. I treat all inter-county moves equally in the present study, but moves associated with institutionalization – particularly imprisonment – are a unique aspect of “migration” that will require attention in future research.

My focus on educational attainment is ideal for this analysis because education is a central component of racial stratification, and migration selective on educational attainment has been pinpointed in recent work that suggests that migration explains the link between percent black and black income disadvantage (Johnson et al. 2012). While educational attainment inequality is not synonymous with other aspects of black-white inequality that have been examined in this literature (e.g., economic inequality), it provides a strong basis for understanding one aspect of the (re)production of black-white inequality in the United States. In addition, unlike other social outcomes, like poverty status or income, educational attainment – particularly high school completion – is largely stable among the adult population, which means that I am able to minimize concerns regarding the possibility that a person’s status changed after migration. Alternative measures of educational disparities focusing on achievement (e.g., testing scores) may be more relevant when considering subsequent inequality within the labor market (see especially Farkas and Vicknair 1996), but I am unable to employ such measures in my analysis due to my focus on migration. Migration estimates by educational achievement outcomes are currently unavailable.

I use race-specific estimates of the adult population that has less than a high school degree to estimate the black-white educational attainment disparity in a county. Educational inequality is represented by the percentage of non-Hispanic black adults (25 years-old or older) with less than a high school education minus the same percentage for non-Hispanic whites. My results are consistent when using a ratio to measure local inequality, but the difference approach provides a more normal distribution and is therefore statistically preferable. I also emphasize that while many more Americans are graduating from high school than in previous decades, it remains a salient measure of educational disparity. This division – high school graduation – demarcates the most disadvantaged portion of the black and white populations, and therefore represents a conservative estimate of educational inequality within a county. In addition, this aspect of educational attainment – unlike attending college – is less likely to be tied to inter-county migration and is less likely to change between the ages of 20 and 25. While still imperfect, relying on disparities in high school attainment has benefits for this particular analysis since my focus is on the compositional impact of migration.

I measure the baseline percent black in a county using SF3 estimates of the total and black populations. The SF3 estimates are the appropriate source (rather than SF1 counts from the short form) because the county migration flow data are also from the SF3 sample – a necessary congruence given my methodological approach (described below). I use the natural log of percent black to allow for this variable’s decreasingly positive relationship with educational attainment inequality (see Figure 1). While the natural log specification is

statistically preferable, I note that my results are consistent when using the combination of percent black and percent black squared.

Migration Flow Data

In order to estimate how migration affects the composition of a county and subsequent levels of inequality I employ county-to-county migration flow data that are broken down by race and educational attainment for the adult population (25 years of age or older; US Census Bureau, Population Division). Flow data are ideal because they allow me to directly observe how migration affects the distribution of inequality across counties, unlike an analysis of individual migration processes. As I describe below, I use flow data to recreate what the composition of a county would have been had out-migrants not left, and had in-migrants stayed where they were. The creation of a counterfactual or hypothetical, no-migration data set provides the leverage for assessing the role of migration despite my use of data from a single census year.

Consistent with the inequality and population data, the county migration data reflect the SF3 estimates. The Census constructed migration flow data by combining information on the household's current location and the response to a question regarding the previous residence from five years ago (i.e., in 1995). Although arguably a short period of time, a 5-year period is sufficient to inform debates regarding the contribution of migration to the percent black-inequality relationship. In fact, in some ways it may be preferable because it permits a more pure estimate than would be possible with a longer period of migration, which could become clouded by temporal shifts in that migration (e.g., migration associated with the era of the Great Migration combined with the Return Migration era).

Flow data files are set up so that each county pair that is linked through migration appears as a separate observation.³ These flows can be further disaggregated by the characteristics of the migrants that comprise the flow, such as by race (non-Hispanic white, non-Hispanic black, other) and educational attainment (less than high school, high school degree or some college, bachelor's degree or higher).⁴ In my analysis I will only include the non-Hispanic white and non-Hispanic black migrants since my focus is on how migration directly affects adult educational disparities through educational composition changes within the black and white populations.

METHODS: ISOLATING THE CONTRIBUTION OF MIGRATION

The underlying idea of my methodological approach is that we can isolate the compositional impact of a given period of migration by comparing two different data sets: a baseline that reflects the population composition after migration (i.e., the 2000 Census); and a hypothetical data set that excludes recent migration. Similar to previous research (Frey 1980), I employ a counterfactual approach to assess how migration affects the composition

³Flows with fewer than 3 migrants were not included in the published data file as a unique observation, and were excluded from my analysis because they could not be attached to specific county pairs.

⁴Ideally, the available data would also be cross-tabulated by age group since educational opportunities and expectations have changed over time. Unfortunately, such detailed data (i.e., education data for specific race-age categories) are unavailable for both the migration flow data and the 2000 Census baseline estimates.

of places and the ensuing level of inequality. However, I build on that research by extending this approach to think about how migration affects *relationships*.

I create the hypothetical “no-migration” population by moving observed migrants back to their origin county using the raw county-to-county migration flow data and the observed 2000 county Census data. I note that this approach maintains all components of the observed migration without assuming that any particular type of migration is more important to changes in inequality than others. This process results in new county population compositions that are unaffected by migration. The educational compositions of the black and white adult populations, as well as the size of the total and black populations, are all adjusted based on these migration flows. Correspondingly, both inequality and percent black differ between the two data sets.

In order to isolate compositional changes related to migration from changes related to other factors (e.g., aging) I use the 2000 data as my comparison point. The hypothetical data are built from the 2000 data and therefore include local adults who would not appear in other potential comparison points, most notably adult educational attainment data for 1995. In addition, by comparing the hypothetical data to the 2000 data, I ensure that any differences between the data sets can be attributed to migration because the concentration of inequality due to other factors is necessarily the same – any variation over time, including differences related to deaths and aging, is held constant since both datasets refer to the same baseline (i.e., the 2000 Census). Notably, this similarity would not be obtainable using alternative approaches, including those that rely on two different decennial time points (e.g., 2000 and 2010). This suggests that alternative approaches could not speak as directly to the compositional impact of migration on local inequality as I do here.

Analysis Plan

I compare the observed 2000 data and hypothetical, no-migration data through three steps. First, I assess how migration contributes to local *levels* of inequality at the county level by examining how the level of inequality in a county differs between the two datasets. I rely on a map and accompanying summary statistics in this descriptive portion of my analysis.

Second, I estimate the direction of migration’s contribution to the percent black-inequality *relationship* by comparing the standardized percent black coefficient estimates from two regression models: one using the 2000, post-migration data; and one using the hypothetical, no-migration data.⁵ There are three possible outcomes of this focal coefficient comparison. First, the post-migration coefficient (i.e., the coefficient from the observed 2000 data) could be larger than the no-migration coefficient, which would suggest that migration positively contributes, and therefore partially explains, the positive association between percent black and black-white educational inequality observed in the data (see Figure 1). Second, and alternatively, the post-migration coefficient could be smaller than the no-migration coefficient, suggesting that migration obscures the true contribution of local processes related to black population concentration. Finally, there may be no substantive difference

⁵Comparing the standardized coefficients from models with different dependent variables is justified by the similarity of the variables’ standard deviations (19.5 and 20.3, baseline and no-migration, respectively).

between the two coefficients, suggesting that the overall, compositional contribution of migration to this relationship is minimal. I gauge the strength of any relationship differences using a coefficient comparison test that is based on the unstandardized coefficients. Since the baseline and hypothetical models are not entirely independent, any statistical comparison needs to adjust the test statistic for the covariance of the correlations. As a result, I employ a test for nonoverlapping but dependent correlations that is based on a Fisher's Z transformation of the Pearson-Filon (ZPF) statistic (Raghunathan, Rosenthal, and Rubin 1996). The Stata code used to conduct this test is available upon request.

For the above analysis I rely on standard regression models because spatial regression models add unnecessary complexity in this case; however, my results are consistent when drawing from these alternative models. In addition, I use robust standard errors to accommodate the heteroscedasticity in my residuals. Adding controls makes no difference for my substantive results, but I include the traditional county-level, inequality covariates, all of which are measured using the 2000 Census unless otherwise noted: industrial composition (i.e., manufacturing and agriculture concentration), metropolitan status,⁶ the unemployment rate, and the proportion of families headed by a single mom (for similar approaches see Albrecht, Albrecht, and Murguia 2005; Blalock 1956, 1957; O'Connell 2012). Despite conducting a multivariate analysis, I only present the comparison for the (logged) percent black coefficient in the main text because it is most relevant to assessing how migration contributes to the percent black-inequality relationship. However, the full models displaying the unstandardized coefficients are presented in the Appendix (see Table A1).

Finally, in a third step, I assess the extent to which there are regional differences in the contribution of migration to the percent black-inequality relationship. I conduct the above analysis separately for counties in the South and non-South. Following previous research examining the percent black-inequality relationship (e.g., Blalock 1957; Fossett and Kiecolt 1989; Giles 1977; Giles and Evans 1985; Wilcox and Roof 1978), my focal analysis identifies southern counties as all counties in the census-defined South (Alabama; Arkansas; Delaware; Florida; Georgia; Kentucky; Louisiana; Maryland; Mississippi; North Carolina; Oklahoma; South Carolina; Tennessee; Texas; Virginia; Washington, DC; West Virginia). However, I use alternative definitions of the South that are more culturally-grounded in supplemental analyses to provide a point of comparison. When defining the South, I consider the centrality of the Confederacy but also the timing of when a state was established. As a result, I focus on one primary alternative definition, namely one that excludes counties in Delaware, Maryland, Oklahoma, Texas, Washington, DC, and West Virginia (Odum 1936). The regional character of Missouri – a “non-South” state – also often comes into question because it was a slave-holding state, but its regional position had no effect on my results so I left it in the non-South category.

⁶This is a dichotomous variable adapted from 2003 Rural-Urban Continuum codes provided by the Economic Research Service (<http://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx>), where the Rural-Urban continuum codes 1–7 represent metropolitan counties (coded 1) and codes 8–9 represent non-metropolitan counties (coded 0).

RESULTS

The first aspect of my analysis assesses the extent to which migration contributes to local inequality by comparing the county educational attainment inequality estimates from the post-migration and no-migration data sets. Positive values in Figure 2 suggest that the gap in educational attainment between local blacks and whites increased after migration, whereas negative values indicate a reduction in black disadvantage. My results suggest that migration is changing the level of inequality within counties in both positive and negative directions, and is thus contributing to the local level of inequality both by exacerbating and ameliorating it. However, changes in the level of inequality were overwhelmingly positive (75 percent were greater than 1 percentage-point increase), suggesting that migration primarily acts to increase local black-white educational attainment disparities among adults. Furthermore, there are notable regional differences, such that the pattern in the South is much more uniform and is characterized by a lower overall impact of migration (average percentage-point change in inequality, South = 3.5; non-South = 5.3). The smaller contribution of migration to local inequality in the South suggests that inequality is locally embedded, and is generated anew by local processes more so than is black-white educational attainment inequality in the non-South.

Despite some evidence of migration as an agent of change, an initial analysis of its impact on the percent black-inequality relationship suggests that this redistribution of inequality across counties reinforces the concentration of black disadvantage in relation to percent black. When examining all counties in the contiguous United States, the standardized coefficient estimates for percent black are strikingly similar across the two data sets, as indicated by the nearly equal size of the two bars in Figure 3. There is a, not surprisingly, non-significant .014 difference between the two standardized coefficients (baseline = .214; hypothetical = .228; ZPF = $-.95$, $p > .10$). In addition, percent black remains positively and significantly related to educational attainment disparities even when recent migration has been removed from the equation ($p < .001$; also see Table A1), suggesting that the local processes related to black population concentration remain important for understanding the production of inequality even after accounting for the compositional impact of recent migration. However, the generalizability of this result may be misleading because it ignores the regional differences in the impact of migration on local levels of inequality discussed above.

Contrasting Contributions to the Percent Black-Inequality Relationship

The contribution of migration to the percent black-inequality relationship is not the same in the South as it is in the non-South. The standardized coefficients in Figure 4 suggest that migration suppresses the relationship in the South, yet positively contributes to it in the non-South. In the South, the larger (logged) percent black coefficient – by .02 units – is from the no-migration data, represented by the light gray bar. In contrast, the percent black-inequality relationship is weaker in the no-migration dataset when examining counties in the non-South. The absolute difference between the standardized coefficients for the non-South is .05, which is not much larger than the corresponding difference for the South. However, the contribution of migration is 28 percent of the baseline coefficient for the non-South in

contrast to only 9 percent for the South. This distinction suggests that the contribution of recent migration is more meaningful substantively in the non-South than in the South. In addition, the statistical comparison of the unstandardized coefficients indicates that the difference is only significant for the non-South (ZPF = 2.18, $p < .05$; South ZPF = -1.26, $p > .10$). These results suggest that the contribution of migration to the percent black-inequality relationship is distinct between the two regions, and that the compositional contribution of migration is only playing an explanatory role in the non-South.

The region-specific results are largely consistent when considering alternative definitions of the South, such that the percent black coefficient is statistically smaller after removing the compositional impact of migration in the non-South, albeit at marginal levels of significance (ZPF = 1.86, $p = .06$). However, there is also evidence that migration is playing a significant suppressing role when focusing on the core southern states, namely Alabama; Arkansas; Florida; Georgia; Kentucky; Louisiana; Mississippi; North Carolina; South Carolina; Tennessee; and Virginia (ZPF = -3.99, $p < .001$). These results support the general conclusions presented above regarding the regional distinction in migration's compositional impact, but they additionally suggest that migration's contribution to the percent black-inequality relationship *is* significant in "the South".

In addition to assessing the contribution of migration, my results emphasize that regional context plays an important role in understanding how percent black is related to black-white inequality. In Figure 4, the hypothetical estimate for the South is over twice as large as the corresponding coefficient in the non-South. Since the estimates from the hypothetical, no-migration data exclude migration's contribution, this result indicates that regional differences in the relationship are also net of migration.

DISCUSSION

I contribute to conversations on the sources of black-white inequality in the United States by examining two roles of migration – the potential for migration to generate local inequality, as well as its role in producing spatial relationships. I argue that differential migration across counties affects the spatial distribution of black-white educational attainment disparities. Consistent with this argument, my results suggest that part of the story of black-white inequality is that it is continuously recreated within localities through migration. Additionally, migration is affecting our estimates of the percent black-inequality relationship through these compositional changes, yet its contribution is regionally dependent. Consistent with recent research (see especially Johnson et al. 2012), the recent in-migration of blacks and whites partially explains why black population concentration is positively related to local educational attainment disparities. However, any explanatory power is limited to the non-South. If anything, omitting the compositional impact of black and white migration has masked the true magnitude of the percent black-educational attainment inequality relationship in the South, especially when considering states within the "Old South" (see Odum 1936).

In addition to assessing a compositional migration explanation for the percent black-inequality relationship, this work provides guidance for understanding what drives regional

differences in the relationship. My baseline results suggest that the magnitude of the relationship differs between the South and non-South such that black population concentration plays a larger role in the South. If anything, this distinction is more pronounced after accounting for the differential contribution of migration. Therefore, factors other than migration generate the observed regional difference in the magnitude of the relationship. Consistent with previous theorizing, a stronger historical connection to slavery and subsequent efforts to restore white supremacy during the post-reconstruction era may mean that inequality-generating processes are more strongly, or differentially, related to percent black in the South, thus producing this regional relationship distinction (Curtis and O'Connell *forthcoming*; also see Reece and O'Connell 2016). Finally, my regional results also suggest the importance of culturally-grounded approaches to defining the South (see especially Odum 1936). While there was no statistical impact of migration on the percent black-inequality relationship in the Census-defined South, counties in the states most closely associated with the Confederacy showed a much stronger suppressing effect of migration. Future work addressing questions related to regional character will need to consider carefully the factors most important for defining the regions of interest rather than relying solely on Census definitions.

When considering the implications of these results it is important to recognize the limitations of this analysis. In particular, despite being a strong foundation, educational attainment is not the only factor contributing to economic outcomes, and the two outcomes cannot be treated interchangeably. As a result, my conclusions based on educational attainment disparities cannot be extended directly to other aspects of black-white inequality because I am unable to account for how other unobserved characteristics associated with migration, including work ethic and risk aversion, might affect those outcomes. Therefore, it remains possible that the role of migration in linking percent black to other dimensions of black-white inequality is distinct from what I have presented here. Additional research focusing on economic inequalities is needed, particularly studies that allow for regional distinctions in the contribution of migration.

Future research could extend our attention to how migration is connected to racial inequalities in several other important ways. First, migration flows could be separated to assess how return migrants – those with connections to the South who are moving from the North to the South – differ in their compositional impact from other migrants. Given my focus on the overall contribution of migration, the current study treats all migration flows equally regardless of the source or motivation. However, studying the selectivity of different flows has been a hallmark of migration studies and may be an important extension when considering the role of migration in producing black-white inequality (also see Curtis *forthcoming*; Curtis and DeWaard 2011).

Second, there are additional aspects of migration that could be considered beyond the direct, compositional impact of black and white migration. Most importantly, scholars should empirically assess how the migration of other groups, especially Hispanics, affects black-white inequality. The migration of Hispanics is an increasingly important social and demographic process in the United States and the recent redistribution of Hispanics within the United States (Lichter and Johnson 2009; Suro and Singer 2002) offers a unique

opportunity to study the impact of Hispanic migration on local inequality dynamics (Abascal 2015; Marrow 2009; Winders 2005).

Finally, future work should consider how migration's contribution varies across different migration contexts. My analysis is based on migration that occurred between 1995 and 2000, which falls within the era of the Great Return migration that is identified by an increase in migrants to the South (Franklin 2003; Hunt et al. 2008; Hunt et al. 2012; Stack 1996). The motivation for moving to the South is varied, and has resulted in movement to a range of types of places within the region (Ambinakudige et al. 2012; Falk, Hunt, and Hunt 2004; Hunt et al. 2008). This broad migration trend may help explain the distinct results for the South. In addition, this may suggest that results on the impact of migration on the percent black-inequality relationship, including the direction of regional differences, are specific to that particular migration context. To the extent to which the Great Migration from the South to the North (1910–1970; see Tolnay 2003) has a similar impact on the percent black-inequality relationship as does the Return Migration, we might even expect migration to play a suppressing role in the non-South in earlier time periods. In addition to extending our understanding of the complexities of the contribution of migration, an analysis of temporal differences could shed light on why earlier research on the percent black relationship found no association in the non-South (Blalock 1956), whereas more recent research suggests that significant associations persist net of controls (e.g., Curtis and O'Connell *forthcoming*; Emerson 1994; Taylor 1998). These and related extensions will be informative as we continue to assess the evidence linking local black population concentration to black disadvantage.

Acknowledgements:

This work was supported by the core (#R24 HD047873) and training (#T32 HD07014) grants awarded to the Center for Demography and Ecology at the University of Wisconsin, Madison by the Eunice Kennedy Shriver National Institute of Child Health and Human Development. I would like to thank my colleagues for providing feedback on earlier drafts of this manuscript, especially Katherine Curtis, Jenifer Bratter, Junia Howell, and Jim Elliott. I also thank the Population Association of America for the opportunity to present this work at the 2014 annual meeting in Boston.

APPENDIX

Table A1.

Explaining County-Level Black-White Disparities in High School Degree Attainment:
Unstandardized Coefficients with Robust Standard Errors, 2000

	All Counties (N = 2,746)				
	Baseline		No Migration		
	Coef	SE ^a	Coef	SE ^a	
% Black (ln)	.02 ***	.01 ^b	.02 ***	.01 ^b	
% Unemployment	-.35	.22	-.86 ***	.20	
% Agriculture	.34 *	.16	.56 ***	.16	
% Extraction	-.27	.22	-.20	.22	
% Manufacturing	-.20 *	.10	-.35 ***	.10	
% FIRE	.01	.29	-.02	.28	

All Counties (N = 2,746)					
	Baseline		No Migration		
	Coef	SE ^a	Coef	SE ^a	
% Service	-.12	.15	-.29	.15	
% Other Professional	-.12	.09	-.24 *	.10	
% Single Mothers	.25	.17	.57 **	.18	
Metropolitan Status	-.02 *	.01	-.01	.01	
Constant	.28 **	.09	.34 ***	.09	
South (N = 1,346)					
% Black (ln)	.02 ***	.01	.03 ***	.01	
% Unemployment	-.62 *	.26	-1.00 ***	.26	
% Agriculture	.60 **	.18	.72 ***	.19	
% Extraction	-.31	.29	-.29	.30	
% Manufacturing	-.41 ***	.10	-.45 ***	.10	
% FIRE	-.05	.33	-.06	.34	
% Service	-.23	.15	-.25	.15	
% Other Professional	-.24 *	.10	-.21 *	.10	
% Single Mothers	.49 *	.19	.52 **	.19	
Metropolitan Status	-.01	.01	-.01	.01	
Constant	.37 ***	.09	.36 ***	.09	
Non-South (N = 1,400)					
% Black (ln)	.02 ***	.01	.02 **	.01	
% Unemployment	-.02	.36	-.63	.33	
% Agriculture	.11	.27	.45	.25	
% Extraction	-.30	.34	-.15	.34	
% Manufacturing	-.10	.17	-.25	.17	
% FIRE	-.15	.48	.04	.46	
% Service	-.23	.26	-.36	.27	
% Other Professional	-.17	.15	-.28	.16	
% Single Mothers	-.12	.37	.55	.37	
Metropolitan Status	-.04 **	.01	-.01	.01	
Constant	.38 *	.17	.33	.17	

^a All reported standard errors are robust standard errors estimated using Stata's "robust" option.

^b The actual estimate is less than .01 even based on traditional rounding conventions.

REFERENCES

- Abascal Maria. 2015 "Us and Them: Black-White Relations in the Wake of Hispanic Population Growth." *American Sociological Review* 80:789–813.
- Albrecht Don E., Albrecht Carol Mulford, and Murguia Edward. 2005 "Minority Concentration, Disadvantage, and Inequality in the Nonmetropolitan United States." *The Sociological Quarterly* 46:503–523.
- Ambinakudige Shrinidhi, Parisi Domenico, and Grice Steven M.. 2012 "An Analysis of Differential Migration Patterns in the Black Belt and the New South." *Southeastern Geographer* 52:146–163.

- Beggs John J., Villemez Wayne J., and Arnold Ruth. 1997 "Black Population Concentration and Black-White Inequality: Expanding the Consideration of Place and Space Effects." *Social Forces* 76:65–91.
- Blalock Hubert M. 1956 "Economic Discrimination and Negro Increase." *American Sociological Review* 21:584–588.
- Blalock Hubert M. 1957 "Percent Non-White and Discrimination in the South." *American Sociological Review* 22:677–682.
- Blalock Hubert M. 1967 *Toward a Theory of Minority Group Relations*. New York: Wiley.
- Boustan Leah Platt. 2009 "Competition in the Promised Land: Black Migration and Racial Wage Convergence in the North, 1940–1970." *The Journal of Economic History* 69:755–782.
- Burr Jeffrey A., Potter Lloyd B., Galle Omer R., and Fossett Mark A.. 1992 "Migration and Metropolitan Opportunity Structures: A Demographic Response to Racial Inequality." *Social Science Research* 21:380–405.
- Curtis Katherine J. "U.S. Return Migration and the Decline in Southern Black Disadvantage, 1970–2000." Forthcoming in *Social Science Quarterly*.
- Curtis Katherine J., and De Waard Jack. 2011 "Racial Inequality in Southern Poverty, 1970–2000: Compositional and Spatial Dynamics of Black Return Migration." Center for Demography and Ecology Working Paper Series, 2011–03.
- Curtis Katherine J., and O'Connell Heather A.. "Historical Racial Contexts and Contemporary Spatial Differences in Racial Inequality." Forthcoming in *Spatial Demography*.
- Eichenlaub Suzanne C., Tolnay Stewart E., and Alexander J. Trent. 2010 "Moving Out but Not Up: Economic Outcomes in the Great Migration." *American Sociological Review* 75:101–125.
- Emerson Michael O. 1994 "Is it Different in Dixie? Percent Black and Residential Segregation in the South and Non-South." *Sociological Quarterly* 35:571–80.
- Falk William W., Hunt Larry L., and Hunt Matthew O.. 2004 "Return Migrations of African-Americans to the South: Reclaiming a Land of Promise, Going Home, or Both?" *Rural Sociology* 69:490–509.
- Farkas George, and Vicknair Keven. 1996 "Appropriate Tests of Racial Wage Discrimination Require Controls for Cognitive Skill: Comment on Cancio, Evans, and Maume." *American Sociological Review* 61:557–560.
- Fernandez Leticia, Howard Cheryl, and Amastae Jon. 2007 "Education, Race/Ethnicity and Out-Migration from a Border City." *Population Research & Policy Review* 26:103–124.
- Flippen Chenoa A. 2010 "The Spatial Dynamics of Stratification: Metropolitan Context, Population Redistribution, and Black and Hispanic Homeownership." *Demography* 47:845–68. [PubMed: 21308561]
- Fossett Mark A., Galle Omer R., and Burr Jeffrey A.. 1989 "Racial Occupational Inequality, 1940–1980: A Research Note on the Impact of the Changing Regional Distribution of the Black Population." *Social Forces* 68:415–27.
- Fossett Mark A., and Kiecolt Jill K.. 1989 "The Relative Size of Minority Population and White Racial Attitudes." *Social Sciences Quarterly* 70:820–35.
- Franklin Rachel S. 2003 "Domestic Migration across Regions, Divisions, and States: 1995–2000." Census 2000 Special Reports.
- Frey William H. 1980 "Black In-Migration, White Flight, and the Changing Economic Base of the Central City." *American Journal of Sociology* 85:1396–1417.
- Frey William H. 1979 "The Changing Impact of White Migration on the Population Compositions of Origin and Destination Metropolitan Areas." *Demography* 16:219–237. [PubMed: 456703]
- Frey William H. and Liaw Kao-Lee. 2005 "Migration within the United States: Role of Race Ethnicity." *Brookings-Wharton Papers on Urban Affairs* 6: 207–262.
- Giles Micheal W. 1977 "Percent Black and Racial Hostility: An Old Assumption Reexamined." *Social Science Quarterly* 58:412–417.
- Giles Micheal W., and Evans Arthur S.. 1985 "External Threat, Perceived Threat, and Group Identity." *Social Science Quarterly* 66:50–66.

- Hall Matthew, Crowder Kyle, and Spring Amy. 2015 "Neighborhood Foreclosures, Racial/Ethnic Transitions, and Residential Segregation." *American Sociological Review* 80:526–549. [PubMed: 26120142]
- Hunt Larry L., Hunt Matthew O. and Falk William W.. 2008 "Who is Headed South? US Migration Trends in Black and White, 1970–2000." *Social Forces* 87:95–119.
- Hunt Matthew O., Hunt Larry L., and Falk William W.. 2012 "'Call to Home?' Race, Region, and Migration to the US South, 1970–2000." *Sociological Forum* 27:117–41.
- Irwin Michael D. 2007 "Territories of Inequality: An Essay on the Measurement and Analysis of Inequality in Grounded Place Settings" Pp. 85–109 in *The Sociology of Spatial Inequality* by Lobao Linda M., Hooks Gregory, and Tickamyer Ann R.. Albany, NY: State University of New York Albany Press.
- Johnson Kecia, Pais Jeremy, and South Scott J.. 2012 "Minority Population Concentration and Earnings: Evidence from Fixed Effects Models." *Social Forces* 91:181–208.
- Lee Everett S. 1966 "A Theory of Migration." *Demography* 3:47–57.
- Lee Seong W., and Roseman Curtis C.. 1999 "Migration Determinants and Employment Consequences of White and Black Families, 1985–1990." *Economic Geography* 75:109–133.
- Lichter Daniel T., and Johnson Kenneth M.. 2009 "Immigrant Gateways and Hispanic Migration to New Destinations." *International Migration Review* 43:496–518.
- Liebersohn Stanley. 1980 *A Piece of the Pie: Blacks and White Immigrants since 1880*. Berkeley, CA: University of California Press.
- Long Larry H., and Hansen Kristin A.. 1977 "Selectivity of Black Return Migration to the South." *Rural Sociology* 42:317–331.
- Marrow Helen B. 2009 "New Immigrant Destinations and the American Colour Line." *Ethnic & Racial Studies* 32:1037–57.
- Nord Mark. 1998 "Poor People on the Move: County-to-County Migration and the Spatial Concentration of Poverty." *Journal of Regional Science* 38:329–351. [PubMed: 12294267]
- Odum Howard W. 1936 *Southern Regions of the United States*. Chapel Hill, NC: University of North Carolina Press.
- O'Connell Heather A. 2012 "The Impact of Slavery on Racial Inequality in Poverty in the Contemporary U.S. South." *Social Forces* 90:713–34.
- O'Connell Heather A. and Shoff Carla. 2014 "Spatial Variation in the Relationship between Hispanic Concentration and County Poverty: A Migration Perspective." *Spatial Demography* 2:30–54.
- Pearce Jamie R., and Dorling Danny. 2010 "The Influence of Selective Migration Patterns among Smokers and Nonsmokers on Geographical Inequalities in Health." *Annals of the Association of American Geographers* 100:393–408.
- Pendergrass Sabrina. 2013 "Routing Black Migration to the Urban US South: Social Class and Sources of Social Capital in the Destination Selection Process." *Journal of Ethnic and Migration Studies* 39:1441–1459.
- Pettit Becky. 2012 *Invisible Men: Mass Incarceration and the Myth of Black Progress*. New York: Russell Sage Foundation.
- Quillian Lincoln. 1999 "Migration Patterns and the Growth of High-Poverty Neighborhoods, 1970–1990." *American Journal of Sociology* 105:1–37.
- Raghuathan Trivellore E., Rosenthal Robert, and Rubin Donald B.. 1996 "Comparing Correlated but Nonoverlapping Correlations." *Psychological Methods* 1:178–183.
- Reece Robert L., and O'Connell Heather A.. 2016 "How the Legacy of Slavery and Racial Composition Shape Public School Enrollment in the American South." *Sociology of Race and Ethnicity* 2:42–57.
- Sampson Robert J., and Sharkey Patrick. 2008 "Neighborhood Selection and the Social Reproduction of Concentrated Racial Inequality." *Demography* 45:1–29. [PubMed: 18390289]
- Shin Eui-Hang. 1978 "Effects of Migration on the Educational Levels of the Black Resident Population at the Origin and Destination, 1955–1960 and 1965–1970." *Demography* 15:41–56. [PubMed: 631398]

- Stack Carol B. 1996 *Call to Home: African Americans Reclaim the Rural South*. New York: Basic Books.
- Stata Corp. 2013 *Stata Statistical Software: Release 13*. College Station, TX: Stata Corp LP.
- Suro Roberto, and Singer Audrey. 2002 "Latino Growth in Metropolitan America: Changing Patterns, New Locations." Brookings Institute, Washington, DC.
- Taylor Marylee C. 1998 "How White Attitudes Vary with the Racial Composition of Local Populations: Numbers Count." *American Sociological Review* 63:512–535.
- Tolnay Stewart E. 2003 "The African American 'Great Migration' and Beyond." *Annual Review of Sociology* 29:209–32.
- US Census Bureau, 2000 Census, Summary File 3. US Census Bureau, Population Division. 1995–2000 County-to-County Migration Flows.
- Vigdor Jacob L. 2002 "The Pursuit of Opportunity: Explaining Selective Black Migration." *Journal of Urban Economics* 51:391–417.
- White Katherine J. Curtis, Crowder Kyle D., Tolnay Stewart E., and Adelman Robert M.. 2005 "Race, Gender, and Marriage: Destination Selection during the Great Migration." *Demography* 42:215–241. [PubMed: 15986984]
- Wilcox Jerry and Roof Wade C.. 1978 "Percent Black and Black-White Status Inequality: Southern versus Nonsouthern Patterns." *Social Science Quarterly* 59:421–34.
- Wilson Franklin D., Rebhun Uzi, and Rivas Salvador. 2011 "Population Change and Changing Educational Attainment of Ethnic Groups in the United States, 1980–2000." *Population Research and Policy Review* 30:639–59.
- Winders Jamie. 2005 "Changing Politics of Race and Region: Latino Migration to the US South." *Progress in Human Geography* 29:683–99.

Figure 1.

Bivariate Relationship between Black-White Educational Inequality and Percent Black by Region, 2000 US Census

Note: Reported correlation estimates are for the natural log of percent black.

The Lowess line displays the best-fitting line without assumptions of linearity, and was estimated in Stata (StataCorp 2013).

Figure 2.
Differences in Black-White Educational Inequality Attributable to Migration, 1995–2000

Figure 3.

Standardized Coefficient Comparison for Black-White Educational Inequality Regressed on the Natural Log of Percent Black

Note: These coefficient estimates come from models that also control for the concentration of agriculture and manufacturing, unemployment, metropolitan status, and the concentration of female-headed households.

Figure 4.

Standardized Coefficient Comparison for Black-White Educational Inequality Regressed on the Natural Log of Percent Black, by Region

Note: These coefficient estimates come from models that also control for the concentration of agriculture and manufacturing, unemployment, metropolitan status, and the concentration of female-headed households.