WHERE MULTI-RACIAL INDIVIDUALS LIVE

by

RYAN KENNETH BAUGH

(under the direction of Steven Holloway)

ABSTRACT

This thesis examines the unique residential geographies of those identifying as

multiracial in metropolitan Atlanta according to the 2010 U.S. Census. Using a concept of

segregation and diversity as overlapping in the context of an increasingly complex racial

landscape, I ask in what sorts of neighborhoods do those who represent diversity at the

very level of their bodies find themselves "in place" in a landscape characterized by

uneven segregation. Results support that multiracial individuals tend to avoid places of

low diversity and the notion of an emerging stratified ternary racial structure over that of a

binary or triracial structure.

INDEX WORDS: Race, Multiracial, Atlanta, Integration, Segregation, Diversity, Racial
                        structure, Residential location, Neighborhoods, Spatial assimilation

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DEDICATION

To all those who have been bound up within societal stratification and that clarity may provide basis for intentional visioning for positive change.

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CHAPTER 1

INTRODUCTION

This thesis examines the residential geographies of Atlanta's multiracial populations in order to better understand where those who identify as multiracial fit within a residential landscape characterized by racial segregation. Although segregation is no longer actively enforced by the state through laws or color conscious mortgage programs, it still permeates Atlanta's neighborhoods, and one common measure of segregation, the Index of Dissimilarity, indicates that well over half of Whites or Blacks would have to move for Whites and Blacks to be evenly distributed throughout the metropolitan area (Logan and Stults 2011). While this thesis does not delve deeply into better understanding the causes of this lingering residential separation, as others have well documented its history (e.g., Massey and Denton 1988; Keating 2001), it does attempt to ask and answer the question of where multiracial individuals fit within a landscape where place and race are so intimately tied together. Navigating this landscape may raise concerns and reveal processes unique to those who ascribe to multiple racial identities. In a terrain where space is racialized and race has a spatial component, understanding this group's geography can reveal much about the way it is racialized.

The unique geographical distribution of multiracial groups yields insights not only into their own racialization, but also into that of monoracial groups, and these insights may additionally help to clarify the evolving contours of broader racial and social hierarchies. Through an analysis of the residential patterning of two multiracial groups,

those identifying as Black-White and those identifying as Asian-White, we can learn not only about how diversity at the scales of the neighborhood and the body may be linked, but also about the relative social positioning of different groups and what that may reveal about the future of segregation.

A burgeoning area within critical race studies focuses on a growing proportion of the population who claim mixed racial and ethnic heritage (Morning 2012). While individuals of mixed heritage have existed throughout the history of the United States (Morning 2012), they have recently been made more visible to researchers wishing to understand their unique experiences thanks to changes in how the government collects and disseminates racial data (Ellis 2000; Morning 2012). The end of legal enforcement of laws prohibiting miscegenation following *Loving v. Virginia* in 1967 has both led to more racial mixing through interracial procreation in this country as well as increased opportunity to claim mixed heritage. Recently, as of 2000, the U.S. Census Bureau has begun allowing individuals to officially claim identification with more than one racial group through the checking of multiple boxes. This has opened up a large dataset for quantitatively examining this newly visible minority population in order to understand how they are distributed across space, in what sorts of neighborhoods they live, and how similarly these patterns mirror or diverge from those of single-race populations (Wright, Ellis and Holloway 2011).

While there is a fair and increasing amount of qualitative and ethnographic research into the racialized experiences of those who identify multiracially, there are very few quantitative examinations of multiracial geography. Interrogation of the multiracial experience dates back at least to Park's Marginal Man theory (Park 1928), which was

originally intended to elucidate the experiences of immigrants as they attempt to assimilate into American culture and society and were for a time, perhaps several generations, suspended between the old and the new. This kicked off a long history of theoretical treatment of multiraciality as a problem. Without a race to call one's own, how was someone to cope? Where would they find role models? How could they function when constantly torn between their racial identities? The state has often simply assigned them a Black identity, based upon a concept of hypodescent, or the automatic assignation of those inheriting multiple ancestries to the least privileged constituent group (Perez and Hirschman 2009; Rives 2011). Though this system affects all minorities, it has mainly been used to bar those with African ancestry from inclusion in Whiteness. This has also been referred to as the "one drop rule" which has affected even those with quite distant or no visible African ancestry.

Scholars have, over the last several decades, begun to take much more seriously the complex and multiple formations of racialized identity that may develop for mixed people throughout their life course and reflect contexts such as neighborhood racial composition, schools, social class background, and phenotype (Harris and Sim 2002; Doyle and Kao 2007; Townsend et al. 2012). In some circumstances individuals may claim identification with a single constituent racial group (most often the minority), often to resist monoracially motivated forms of discrimination, and in other social situations may identify as explicitly multiracial or even to eschew racial classifications altogether (Miville et al. 2005; Doyle and Kao 2007; Townsend et al. 2012).

The seeming mutability of multiracial identification does not alter the fact that those who identify as multiracial or who originate in interracial households face racialization

from the outside, and in fact some of their apparent racial flexibility may be in response to outside pressure to conform to the racial needs of the moment, which may be more likely to evolve from day to day and throughout the life course for those who tend to display more racial ambiguity than individuals who consistently claim a monoracial identity. "While the identity claims [multiracial individuals] make may feel very private and personal, these claims are, in fact, collective products that individuals must negotiate with their environments" (Townsend et al. 2012 p. 95). Dalmage (2000) has employed the terms "borderism" to describe the unique racisms faced by those near the color line and "border patrolling" to describe the dynamics behind the tendency for multiracial individuals to be called upon by others to claim and even to justify a monoracial identity. Though racial boundaries have shifted throughout the history of the United States, they have not nearly dissolved completely, especially the social boundaries between Whites and Blacks. Thus those who challenge these strict boundaries through their corporeal straddling of this divide face persecution not only from White supremacist propaganda. Members of their own families sometimes challenge their inclusion in the family or their choice of racial identity, or they try to limit their exposure to other branches of the family or choose the racial makeup of their group of friends (Dalmage 2000; Rives 2011; Nadal et al. 2013).

Multiracial identity also exposes a host of holes within civil rights laws designed to protect people from racial discrimination based on monoracial categories. Though changes in the U.S. Census which allow the selection of more than one racial identity have given some official state support and encouragement to the act of publicly identifying as belonging to more than one racial group, many courts have avoided setting precedent

on how to treat these individuals legally in cases where race matters through what has been termed "judicial erasure of discrimination," where "many courts ... shift the identity of a plaintiff or comparator employee in order to structure the claim in terms that fit neatly into existing jurisprudence" and which then "reduces the likelihood that claims of mixed-race discrimination will be brought in the first place" and causes lawyers to "instead plead according to a monoracial category" due to lack of precedent (Rives 2011 p. 1326). In this way, any specific component of multiraciality can be used as a cause for dismissal of anti-discrimination suits, and instances of multiracial discrimination become difficult to count.

The changes to the Census, by increasing the flexibility of racial identity reporting, have reduced somewhat "harms of categorization," or "those [harms] that arise from simply being classified by a system of rules, separate from any benefit or injury based on that categorization, such as being perceived as belonging to or forced to identify with an ill-fitting category" (Rives 2011 p. 1307). In Miville et al.'s study of common themes in the development of racial identity among multiracial individuals, she found that "not having a racial designation on institutional forms is one of the most invidious experiences of racism that occurs to multiracial people" (Miville et al. 2005 p. 511). Townsend, Markus, and Bergsieker (2009) report lower levels of self-esteem and motivation in multiracial subjects denied the ability to identify biracially on forms. Though changes to the census may precipitate the spread of more flexibility in racial categorization beyond government forms and thus reduce harms of categorization, these changes have done little to address "harms attached to the category," which would include such harms as "the negative actions such as refusal to hire someone of that category or violence against those in the

category" (Rives 2011 p. 1307-1308). "Individuals who are socially racialized as mixed race or embrace that identity face discrimination from a unique animus independent from the harms based on monoracial identities" (Rives 2011 p. 1308). Additionally, though, they also face some of the same discriminations and challenges faced by those of each of their constituent monoracial minorities.

Scholars have long been concerned with the economic and cultural assimilation of ethnic and racial groups to the White majority as well as the residential geographic distribution of ethnic and racial groups in U.S. cities. Spatial assimilation theory builds on the assimilation models developed by Park (1926) and predicts that as outsider groups such as immigrants achieve economic and social parity with Whites (at that time limited to Anglo-Saxons), they would also achieve spatial propinquity with Whites (Massey and Mullan 1984; Alba and Nee 1997). Assimilation theory's predictions for the achievement of socioeconomic convergence with Whites has panned out better for White ethnic groups than for non-Whites, and especially for Blacks. Despite this shortcoming and the fact that there are many factors affecting the residential location of any given individual, including legacies of discrimination in the housing market and effects of group preferences, spatial assimilation theory allows an examination of proximity to and integration with Whites to act as a proxy for understanding a group's relative social position within the broader racial hierarchy (Bennett 2011).

Assimilation theory broadly posits mixed marriage and multiracial Whiteness to indicate the ultimate cultural, economic, and social assimilation with Whites. Clark and Maas (2009), two of the very few researchers to have quantitatively examined the geography of multiracial populations and compared them with that of monoracial groups,

have viewed their increased integration with Whites largely as a product of their increased education and income levels, though they have recognized that that does not tell the whole story. They found in a study spanning several metropolitan areas, that multiracial groups tended to avoid areas with high concentrations of any one racial group. They also displayed patterns closer to spatial randomness in terms of clustering with White-alone groups, whereas Black-alone and Asian-alone showed definite spatial residential inhibition toward Whites. These results are consistent with Wright et al.'s (2011) findings that interracial Black-White households are disproportionately located in more diverse neighborhoods and tend to avoid low diversity White or Black areas. While Clark and Maas (2009) frame their investigation of multiracial residential geographies largely as a test of the degree of spatial assimilation of multiracial groups, this is largely dependent on their assumption that the primary driver of increased integration with Whites is the result of the increased education and income among multiracial groups in general. They analyze patterns of Asian-Whites and Black-Whites, as does this thesis, but they fail to focus on meaningful differences between the patterns of these two groups. Additionally, it remains unclear what mechanism they have in mind when they contend that the increased integration of multiracial populations foreshadows increased integration among all racial groups, though they are careful to admit that it will be a long and slow process.

Bennett (2011) explicitly highlights the differences between Black-White and both Asian-White as well as Native American-White multiracial groups to ascertain the emerging shape of the U.S. racial social hierarchy. Increases in immigration from Asia and Latin America as well as increasing sizes of multiracial populations raise questions for the fate of the United States's historical binary color line between Blacks and Whites, and so

some have postulated the possibility of an emerging triracial social structure, in which those neither White nor Black and those partially White are located. Her examination of multiracial groups confirms that they are indeed more integrated with Whites than their monoracial minority counterparts, but she also highlights how Black-Whites are consistently less integrated with Whites than the other two groups. Her findings support a notion of a stratified ternary racial structure, one in which those marked with any Blackness are often affected by Blacks' position at the bottom of the racial hierarchy, while other multiracial groups are more easily able to integrate with Whites. "Thus, racial inequalities that exist among single-race minorities are reflected in the residential experiences of multiracial groups. As such, the middle social position they occupy appears similarly stratified" (Bennett 2011 p. 724). This thesis extends her work with a specific focus on a single metropolitan area and different methodologies including the use of maps to better examine the spatial structure of these geographies in the context of increasing diversity across a spectrum of scales.

While this thesis compares multiracial geographies to those of their monoracial counterparts, following Clark and Maas (2009) and Bennett (2011), I expand the concept of segregation beyond an examination of any two racial groups at a time to encompass a concept of segregation which overlaps with diversity and acknowledges the increasingly multitudinous nature of the United States's racial landscape. While the Black-White color line is still very much a prevalent feature of U.S. racial stratification, many scholars have recognized that increasing immigration from Asia and Latin America is "browning" the United States. This calls for a more nuanced understanding of diversity and segregation which allows that they can both very much exist in the same neighborhood. This thesis

draws from the framework developed in Holloway et al. (2012) and which they employed in Wright et al.'s (2011) study of households which utilizes a measure of diversity encapsulated in a score of scaled entropy alongside information on which racial group holds the plurality in a given neighborhood. Entropy is highest in a neighborhood when all racial groups are equally proportioned and lowest when one dominates. Entropy will be much lower in tracts with only two racial groups present even when they are fairly balanced than in a similar tract with at least minor representation from remaining groups.

This thesis thus makes use of this framework, entropy alongside plurality, to understand the residential geographic patterns of Asian-White and Black-White populations in the Atlanta 28-county metropolitan area. Data originated from both the U.S. Census Bureau's 2010 decennial census and the 2007-2011 American Community Survey 5 year estimates, and were downloaded through the National Historic Geographic Information Center (NHGIS) maintained by the University of Minnesota (Minnesota Population Center 2011). Three main methods of analysis link the diversity of neighborhoods, in this case defined as census tracts, with these multiracial groups. The first method involves mapping high concentrations of each of these groups across a basemap depicting tracts assigned into categories such as Moderate Diversity Black, Low Diversity White, or High Diversity. Next, tabular analysis clarifies quantitatively how the distribution of these high concentration tracts compares to the distribution of all tract types across the study area. Finally, a set of multiple regression models are constructed to help control for tract-level variables which are not explicitly racial, and to allow subtle differences between tracts to provide predictive power. The dependent variables for these models are counts of individuals in the group of interest in each tract. The two main

models constructed are for Black-White counts and for Asian-White counts, and separate models with monoracial White, Black, and Asian counts are constructed for comparison. Variables such as median income help to isolate the effect of racial diversity on the location of multiracial residence. Categorical, or dummy, variables indicate which racial group holds the highest proportion, and interaction terms allow an analysis of how the effect of diversity changes depending on the racial context.

Utilizing the new opportunities provided by changes in the census to better understand the unique geographical and racialized experiences of those who identify as multiracial will provide insight into the mechanisms of racial segregation. This thesis complements qualitative research and aims to determine in what sorts of neighborhoods those self-identifying as multiracial live. Do they live in more diverse neighborhoods than those identifying monoracially? Does the racial composition of the neighborhood affect where those whose very bodies transgress racial boundaries settle? Does the residential context of multiracial individuals vary widely? Answering these questions will elucidate how diversity interacts across scales, and whether, as some would claim, increases in racial mixing at the level of the individual anticipate greater spatial assimilation across neighborhoods (Clark and Maas 2009) or provide "an opportunity to deconstruct and dismantle ideologies of race" (Ali 2012 p. 172).

Chapter 2 delves more deeply into the literature surrounding multiraciality and lays out more clearly relevant theory behind the research questions and hypotheses. The basic purpose is to better understand where multiracial populations concentrate, and what factors affect where they live. The main expectation was that these groups live in more diverse places than their constituent monoracial counterparts, and this expectation was

built on several previous works. Wright et al.'s (2011) study of households indicated that interracial Black-White households tended to avoid low diversity places, and Clark and Maas (2009) found similar results for multiracial individuals, though their analysis largely relied on biracial thinking despite looking at two distinct multiracial groups and their three constituent monoracial counterparts. Ethnographies of those identifying as multiracial, especially biracial Black-Whites, have indicated that many of them face increased scrutiny of their racial identity from those who identify monoracially with one or other of their constituent racial identities, and so expectations were that they would tend to avoid non-diverse areas dominated by these groups. The long legacy of the "one drop rule" being applied to those with African ancestry lead to expectations of a stratified ternary social structure, so Black-Whites were expected to more closely resemble Black patterns of residential geography than Asian-Whites were compared to Asians (Bennett 2011). The effect would be that Black-Whites should be more sensitive to entropy within White areas than Asians are.

Chapter 3 lays out in considerably more detail the methodological approach of the study. It clearly outlines the process of constructing the entropy score and assigning tracts to categories for the mapping and tabular analysis stages, as well as delves into some of the pitfalls regression model construction encountered and endeavored to avoid or mitigate. Chapter 4 provides the results of all of the methodological approaches and synthesizes them into a cohesive set of discernible patterns relevant to the research questions, making clear what findings were statistically significant and providing clear comparisons between the two multiracial populations and three monoracial groups included in the analysis. Results clearly reveal that while both multiracial populations are

in more integrated settings than their monoracial minority counterparts, Black-Whites are less integrated with Whites than Asian-Whites are.

Chapter 5 draws conclusions from these discernible patterns and the distinctions between them to situate the results within the context of the research questions and to begin to clarify some of the broader significance of the results. Results not only address the sorts of factors affecting where multiracial populations tend to locate, but also reveal important contours within the racial and social structure of U.S. society more broadly. Findings support the notion that although society is no longer so largely defined by a strict binary color line between Blacks and Whites due to the increasingly substantial numbers of those who are neither Black nor White and an emerging triracial stratification, those in the middle levels of the racial hierarchy are affected by this stark distinction, so that we appear to be moving toward a stratified ternary racial structure in which multiracial populations are affected by the relative social positions of their constituent minority group, and this structure is visible spatially in the types of diversity and segregation displayed within Atlanta's neighborhoods. Those Black-Whites who, according to spatial assimilation theory, should represent full assimilation with Whites, are less "assimilated" than Asian-Whites, who much more closely mirror White patterns and are less sensitive to entropy in White areas than Black-Whites are. Black-Whites are least likely of these multiracial populations to be found in non-diverse White neighborhoods, as Blacks are least likely of any monoracial group to be found in non-diverse White areas. The thesis concludes with a discussion of study limitations and unanswered questions, laying out possible improvements and making several recommendations for expanding upon this study and guiding future research.

CHAPTER 2

CONCEPTUAL FRAMEWORK

Racial "Mixing" and Racial Shifts

The United States has a long history of bringing people from disparate regions of the world together, sometimes attracting through economic or religious opportunity, and sometimes through more overtly forceful means. Successive waves of immigration have made the United States one of the most diverse countries in the world, both in terms of the countries of origin of its residents and their ancestors and the phenotypic variety of their features. Eventually these differences became regarded as racial differences, and these distinctions, particularly between White and Black, were explicitly used as the basis for keeping certain groups as property and attempting to hold them separate both genetically and on the social hierarchy even after abolition.

Racial mixing between Europeans and Africans occurred on Africa's western coasts, so some of those caught up in the slave trade were likely of mixed descent, and further racial mixing occurred in the colonies largely between indentured servants from Africa and Europe. In the Upper South, the multiracial progeny were legally treated as slaves, and together with laws linking Blackness to slavery, this fostered the growth of a system of hypodescent, otherwise known as the "one drop rule" (Rives 2011). Though the United States has always included individuals of mixed heritage, legal structure and cultural norms have largely maintained racial boundaries, keeping those racialized for example as White or Black from mixing socially, and indeed, romantically. The first such law against

marriage across racial lines in what would become the United States was passed by Virginia in 1662 (Ali 2012). Though such laws did not completely stamp out interracial mixing, they did have the effect of making such mixing more illicit and the results less openly and explicitly multiracial (Perez and Hirschman 2009). Indeed, these laws have more served to reinforce mythical notions of racial purity than actually stamping out interracial sex and partnering.

State treatment of those of mixed heritage has not been consistent temporally or geographically, though, and early on even while much of the South treated mulattos as slaves, South Carolina and Louisiana granted them an in-between status. Though towards the turn of the century these populations would become obscured with the growing employment of hypodescent, in the mid 1800s there were recognized "populations of distinction" of mulattos in both Charleston and New Orleans (Perez and Hirschman 2009 p. 11). In the censuses between 1850 and 1870 and then again in 1910 and 1920, mulattos were counted separately. In 1890, the even more specific categories of octoroon and quadroon were included, although by the First World War the "tenability of the [mulatto] distinction disappeared as social patterns led to heavy intermixing between mulattos and blacks but very little intermixing between mulattoes and Whites" (Rives 2011 p. 1313). Notable cases of the "one drop rule" being employed include the ruling by the U.S. Supreme Court in 1892 that French Creole Homer Plessy's less than 1/8 African ancestry required him to use the segregated public amenities allotted to Blacks, and the loss of Susie Phipps's suit in 1982 against the state of Louisiana to legally change her race from Black to White on the grounds that she had at least 1/32 African ancestry (Omi and Winant 1994; Perez and Hirschman 2009). The fact that Census counts changed little and

were in fact statistically indistinguishable after respondents began self administering the questions through the mail in the 1960s and 70s, instead of relying on interviewer perception, as in the past, indicates that such treatment of mixed ancestry was not limited to the subjection of the State, but that it had been internalized by those whom it most affected (Perez and Hirschman 2009). Granted, though, by this time there was no longer any way to record mixed ancestry, confining respondents to monoracial categories. Even popular conceptions of the "tragic mulatto" which had arisen in fiction dropped out of common parlance for a time (Rives 2011).

The Census once again gave some attention to the issue of mixed heritage with the 1997 revision to the Office of Management and Budget Statistical Directive 15 directing the 2000 Census to allow the checking of more than one racial category. While less than 3 percent of the population elected to choose more than one race, this figure was approximately 20 percent higher in 2010 than 2000 (Jones and Bullock 2012), possibly indicating growing comfort with the choice. This increase was even more stark among those claiming multiracial Black-White status. In ten years this self-reported population grew by over a million people with an increase of 134 percent, while Asian-White multiracial reporting grew by 87 percent (Jones and Bullock 2012). It is difficult to tell to what extent these increases reflect natural increase and immigration or the growing self perception of multiracial persons as such and increasing comfort in publicly claiming such an identity.

Stuckert (1976) estimated that 80 percent of those characterized as Black have some European ancestry and African or Native American ancestry can be found in twenty percent of Whites in the United States. Even so, only 5 percent of those who check the

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Black category also check another category and only 3 percent of those checking White check more than one race (Perez and Hirschman 2009). Overlap between Blacks and Whites in the 2000 Census was limited to 2 percent of Blacks and 0.4 percent of Whites (Perez and Hirschman 2009). Though Whites followed by Blacks report the lowest proportions of multiraciality, the largest shares of multiracial individuals claim some White and Black heritage at 83 percent and 34 percent respectively. Overlap accounts for this summing to more than 100 percent (Jones and Bullock 2012). Approximately fifteen percent of Asians in 2000 claimed multiracial status, and the bulk of these were Asian-White. Japanese Americans, many of whose families have been in the United States for several generations and who report higher levels of nativity than other Asian groups, report 25 percent multiraciality (Perez and Hirschman 2009). The two racial groups with the lowest proportions of monoraciality are also the two smallest racial groups.

Much research has gone into illuminating the factors that come into play as respondents consider how to identify racially. Comparisons between the 2000 Census and a follow-up survey revealed that "97-98 percent of Whites, Blacks, and Asians reported the same race (or had the same race reported by the household respondent)" (Perez and Hirschman 2009 p. 8). At the same time, however, only 40 percent of those reported as multiracial in that census were reported thusly in the survey. On top of this unexplained variation in self reporting, researchers have found that geographic context at multiple scales plays a significant role in how parents report the identity of their children with multiple racial identity options (Holloway et al. 2009). Although nearly twice the number of children as adults are reported to be multiracial, evidence suggests that part of this discrepancy may be explained by a tendency on the part of adults to simplify their

reported identity from that reported by their interracial parents on their behalf (Perez and Hirschman 2009). The children of interracial Asian-White unions are equally likely to be reported as Asian as White when asked to identify monoracially, though proximity to high concentrations of Asians increases reporting as Asian. Interestingly, while first generation Asian-White children are most likely to be reported as Asian, third-generation Asian-White children are more likely to be reported Asian than second-generation. These findings may hint that at least within this multiracial population, racial distinction between Asian and White is less intrinsic to identity and more a matter of choice (Lee and Bean 2004). Doyle and Kao (2007) report that while multiracial individuals are more likely than monoracial individuals to change the way in which they racially identify throughout their lives, especially between adolescence and adulthood, Black-Whites tend to possess less racial fluidity than Native American-White and Asian-White multiracial individuals, and that they are "especially compelled to identify as monoracial Blacks" (Doyle and Kao 2007 p. 405).

While the *Loving v. Virginia* Supreme Court case effectively legalized interracial unions and by implicit extension multiraciality, it is apparent that multiracial individuals have existed in what would become the United States throughout and since its settling by groups from the Old World. While their existence has sometimes been obfuscated by legal and social trends, viewing this landmark case as their beginning elides a long history of racial admixture. However, it, along with previous state-by-state changes in law, certainly enabled increased racial mixing, especially between Blacks and Whites, who were the most common targets of anti-miscegenation laws. Some predict that those

identifying as multiracial may constitute 1/5 of the total population by mid-century (Lee and Bean 2004).

The primary driver of the diversification of the United States, however, is immigration. While in the past this was primarily restricted to Europeans, modern immigration waves include large numbers of Asians and Hispanics. When W.E.B. DuBois famously asserted that "the problem of the twentieth century is the problem of the color line," he was referring to the vast social separation between Blacks and Whites (DuBois 1999 (1903)). Researchers are eager to understand how these new groups affect this stark binary divide in society. Though at times those neither Black nor White have occupied an in-between ground, their low proportions have helped to facilitate their at least superficial subsumption into one extreme or the other on this divide. The question surfaces of whether substantial increases in colors other than Black or White help to soften this traditional societal division or rather simply take places on one side of it. Some have even postulated that societal divisions may shift such that there will be a "triracial stratification of whites, honorary whites, and nonwhites" (Rives 2011 p. 1316). Past waves of European immigrants were regarded as non-White but also as non-Black, rather than as Black, though for a time this distinction had little material effect, until these groups "achieved" Whiteness. Later waves of Chinese immigrants "made conscious efforts to change their lowly racial status by achieving economic mobility, emulating the cultural practices of Whites, intentionally distancing themselves from blacks, and rejecting fellow ethnics who married blacks, as well as their Chinese-Black multiracial children" (Lee and Bean 2004 p. 225). Part of achieving Whiteness for those not from Eastern and Northern Europe often involved deliberately avoiding Blackness.

While there is a long history of scientific investigations of race focusing on justifying disparate treatment of members of different groups, social scientists have more recently widely accepted that race is socially constructed, holding no basis in biological difference (Omi and Winant 1994). While some have embraced the view then that race is not a valid category for analysis in its own right, supposing it may be reduced to other issues such as class, others are increasingly aware that race is a category which stands in its own right as a structural force shaping society, irreducible to concepts of class, nationality, or ethnicity, and based upon linking cultural representation and social structure (Omi and Winant 1994). In other words, differences perceived as racial distinctions matter precisely in that they link certain people to a different place in a social hierarchy than those without those racial distinctions, and these social distinctions reinforce the importance placed upon the more explicitly racial distinctions. While in many cases these distinctions are loosely linked to phenotypic variation in skin color or facial features, they may also be linked to religion, language, ancestry, or even social position itself. It is increasingly recognized that racialization changes over time, with a certain level of fluidity across racial categories. Indeed, the racial category of "White" has changed drastically since the early twentieth century, generally becoming more inclusive as southern and eastern European ethnic groups have achieved economic parity and cultural assimilation with earlier waves of European arrivals (Roediger 2005).

While some may argue that discussions of the possibility of racial mixing presuppose essential and stable categories of race, I instead take Morning's lead in defining "multiracial individuals as descendants of two or more groups currently believed to constitute distinct races" (Morning 2012 p. 17). This acknowledges the social

constructedness of race and allows examination of mixedness. At the same time, though, determining who is racially mixed then is predicated upon who is considered racially distinct. Different states and popular conceptions define different sets of "primary" races which can then be seen to be mixed (Morning 2012). Indeed, as shown above, in the United States alone, these officially recognized racial categories have changed over time, responding to and in turn shaping changing demographics, perceptions of racial belonging, and the structure of racial hierarchies (Omi and Winant 1994; Ellis 2009).

Many scholars question the need or rationale for attempting to construct a political movement around mixedness (Ali 2012). Some argue that since no racial group is truly "pure," then discussing some individuals as mixed is falsely setting them apart. However, the more practical question lies in to what extent multiracial populations identify as multiracial. Miville et al. report from their analysis of multiracial identity development that "a multiracial label or identity was one that seemed to be more private, even unspoken, rather than an identity stemming from a clearly negotiated reference group orientation" (Miville et al. 2005 p. 514). Possession of a multiracial reference group is understandably challenged by "the lack of a visible or accessible multiracial community" among parents and peers (Miville et al. 2005 p. 511). However, years of lobbying by the Multiracial Category Movement to somehow recognize those of mixed ancestry on the Census demonstrates that a multiracial consciousness may be gaining momentum, though some have observed that much of the impetus behind this Movement was "the discomfort many White-Black interracial couples felt when choosing racial classifications for their mixed-race children on educational data collection forms" (Hernández 1998 p. 107). Though the U.S. Census for now recognizes multiraciality implicitly if not explicitly (it is

not a separate category but rather the selection of multiple categories) as the Movement hoped, other components of State power do not, as evidenced by uneven treatment of multiraciality in the judicial system.

One of the modern justifications for maintaining racial categorizing is to enable the enforcement of Title VII of the Civil Rights Act which aims to protect employees against discrimination in the workplace. Though Directive 15 and its 1997 revision directs all Federal agencies and programs to follow the minimum standards for racial data categorization as represented in the Census, including the option of identifying with more than one racial group, courts have not set any clear precedent for doing so, and in fact the multiracial status of plaintiffs in Title VII suits is often used to dismiss claims even before discovery (Office of Management and Budget 1997; Rives 2011). In cases where an employer replaces an employee with another, if there is any overlap of racial identification, judges frequently dismiss cases, regardless of a plaintiff's other racial identities which may have been the basis for discrimination. This sort of monoracial assignation was apparent when one judge even barred a legally sanctioned race conscious admissions program which specifically sought to create diverse classrooms for testing teaching methods from including multiracial children among their target populations, arguing that they "could not contribute to the benefits granted by diversity" (Rives 2011 p. 1329).

Because multiracial individuals are more likely to be perceived by others as members of races to which they do not belong, they can face disparate harm based on the very ambiguity of their race. Plaintiffs in anti-discrimination suits must demonstrate that they were discriminated against on the basis of being perceived to be in a *correct* and

particular monoracial category. If, for example, they are discriminated against for being perceived to be Middle Eastern, whether in appearance or behavior, and yet they are not themselves in any way Middle Eastern, they have no legal recourse even if they may prove the former point. Ambiguity becomes mutability in the eyes of the law. Courts have also generally failed to view multiraciality itself as a basis for discrimination, despite a long history of interracial unions being viewed as creating inferior "mongrel races" and multiracial populations being one of the primary targets of White supremacist organizations (Rives 2011).

In addition to there being no laws protecting multiracial populations per se and much ambiguity in how to treat them across various aspects of law and between branches of government, multiracial persons are open to unique forms of discrimination in their day-to-day lives. In a summary of attitudes toward multiracial populations, Campbell and Herman (2010) report that White-Black adolescents and college students face more discrimination than their monoracial Black counterparts and that "extended interracial families often express negative attitudes toward multiracial children (Campbell and Herman 2010 p. 1513). Nadal and colleagues build on a literature highlighting the unique microaggressions, or "subtle forms of discrimination," faced by multiracial individuals throughout their daily lives and through contact with monoracial people, by showing how, while they do not face more microaggression overall than other minorities face, they do face more from their own families, both nuclear and extended (Nadal et al. 2013 p. 190). Masuoka's (2008) study of political attitudes of multiracial populations finds that multiracial Whites are significantly more likely than monoracial Whites to both view multiracial individuals as a target for discrimination and to believe that multiracial

children face more problems than monoracial children. In a broader review of political attitudes, she finds that "if multiracials were placed on the conceptual political attitudes scale, multiracials (regardless of racial background) fall somewhere between Whites and Blacks" excepting that "multiracial Blacks have similar perspectives on race-based policy solutions as monoracial Blacks, and multiracial Asians have similar perspectives on racial discrimination as monoracial Whites" (Masuoka 2008 p. 261).

Many see opportunities in racial mixing to challenge dominant racial ideology, while others caution that mixedness is not necessarily a direct challenge to racial essentialism per se (Morning 2012). However, mixedness certainly poses challenges to a national mythology of racial purity which serves to conceal a long history of interracial partnering (Ellis 2000). Acknowledging multiracial individuals certainly draws attention to flawed logic in projects underpinned by ideas of racial absolutism, such as racial demographic projections which often fail to take into account the possibility and reality of racial mixing. These sorts of projections are often uncritically put to use in propaganda warning of "race suicide" in the absence of tightening limits on immigration (Ellis 2000).

Even once legalized in the 1960s, thinking about racial mixing was not always high in the minds of racial activists and scholars, who saw identifying with minority monoracial categories as the optimal method for advancing anti-racist goals, and who saw discussion or acknowledgement of mixedness as distracting from a collective political solidarity based on shared identity as Black, for example. "Talking about mixedness was seen to... enable a racial privilege that pushed those who could 'pass' as White up the social ladder, which meant simultaneously pushing those who were Black and brown back down it" (Ali

2012 p. 171). Clearly, the experiences and struggles of those of mixed heritage is intimately tied to the experiences and struggles of those identifying as monoracial.

These sorts of tensions centering around identity were clearly visible in the debates that lead to the Office of Management and Budget changing the rules to allow individuals to mark more than one racial category in the U.S. Census. Many civil rights groups were concerned that allowing people to claim mixed heritage would undermine the counts of their constituent minority communities, thus undermining the enforcement of civil rights protections, which has been the major legal justification for the government's collection of racial data. While the Census has long allowed individuals to mark more than one ancestral heritage, this component of the Census has had fewer policy or legal implications and their concomitant political controversy than race has had (Ellis 2000). These tensions form part of a larger debate concerning the collection of racial data in the first place, which some see as reifying racial categories we otherwise know to be social constructs, and which others see as essential tools to be used in the pursuit of racial equality. Indeed, some politicians have attempted to take away these tools and obscure racial inequality by stopping the collection of racial data (Ellis 2009).

These issues and a concern for social justice more broadly should frame any investigation into racial mixedness, quantitative methods no less than qualitative. Critical quantitative geographers call for quantitative geographical research into racial issues such as segregation and diversity which "is reflexive and aware of its political context, is informed by social theory, and keeps issues of social injustice in the spotlight" (Ellis 2009 p. 303). Ellis calls for particular attention to the ways government agencies collect or do

not collect data in order to manipulate what we as researchers and activists are able to see.

Racialized Space

At least since the development of the Chicago School of Sociology, urban social scientists have investigated location and movement of populations within cities and neighborhoods (Park 1915). Scholars have often used the Dissimilarity Index to study residential racial segregation. This index is based on the share of residents of a particular racial group in a given neighborhood who would have to move to be evenly distributed across a given area of larger scale such as a metropolitan region, and has been widely employed since the 1950s (Holloway et al. 2012). Other methods have subsequently been developed to add nuance to our understandings of spatial segregation, such as the exposure index, which examines the average level of exposure of members of a particular racial group to members of another particular racial group. This can also be used to measure a group's isolation from groups other than itself.

The Dissimilarity Index was largely developed in connection with assimilation theory, which posits that as immigrants and ethnic minorities assimilate to the dominant culture and achieve socio-economic gains, they translate these gains into geographic propinquity with Whites. Assimilation theory thus "positions mixed marriage as the ultimate indicator of cultural assimilation for a minority group, resulting, at an extreme, in the loss of minority identity" (Wright et al. 2011 p. 6). This framework has largely been invalidated in regard to Blacks, who have not been able to incorporate in the same ways as White ethnic groups and to some extent even Asians and Hispanics. If spatial assimilation accurately predicts that social and cultural assimilation occurs concomitantly

with spatial propinquity to Whites, then neither multiraciality nor by extension its predecessor mixed marriage are the ultimate achievements of assimilation, at least in the first generation. Indeed, Wright et al. (2011) have raised doubts to what extent this theory is validated in the case of Black-White household residential location. Households headed by both a White and a Black partner are exposed to fewer Whites than their White-White counterparts are. Combining these findings with Qian and Lichter's (2011) research which shows not only that both Native American-White and Asian-White multiracial individuals are more likely to identify as White than Black-White individuals are, but that they are also much more likely to marry Whites than Black-White individuals are, indicates that the journey toward Whiteness for these groups may be much faster than for those with any Blackness, showcasing the enduring legacy of hypodescent despite its removal from law. However, they do find that higher levels of education now increase the odds of Black-White interracial marriages, which was not the case in 1980, when rates were very low regardless of educational attainment. Bonam and Shih (2009) confirm that multiracial individuals are generally more comfortable with interracial relationships than monoracial individuals, who are about equally resistant to such whether White or minority. Further, they find that multiracial individuals are more likely to see race as a social construction, and that this partially explains their greater comfort with all levels of interracial intimacy.

Residential location reflects for any given household both a set of constraints and a set of choices. On one hand, a place of residence offers families and individuals a place for "creating and enacting their identities" and which are thus influenced by their various identity positions such as class, educational level, or race (Wright et al. 2011 p. 6).

Legacies of legalized redlining still remain, however, and racial hierarchies find expression in residential geographies, so households and individuals still experience constraints in where they may live even outside the issue of finances and affordability. Sometimes this is through blatant discriminatory actions on the part of other residents designed to make them feel unwelcome, or it may be through the calculated silences of real estate agents (Wright et al. 2003; The Urban Institute et al. 2013).

Other researchers focus on the role and possibility of group preference for sustaining segregation. Clark (2006) finds through an examination of modeling methods that preference for neighbors of the same race could mathematically explain the levels of segregation observed in the United States even in the absence of any structural housing discrimination. Even if this is true, however, it does little to explain the origins of racial and ethnic homophilly. Some researchers link racial preference to group understandings of a social hierarchy in which some racial groups tend to be lower on a socioeconomic scale, and where, "what matters [with respect to racial stereotypes and neighborhood racial-composition preferences] is the magnitude of difference that in-group members perceive between their own group and particular out-groups" (Charles 2000 p. 384). This model could explain why Blacks are the least-favored neighbors of all other racial groups, as they have the lowest socioeconomic status as a group. Although previous studies, which have tended to focus on preferences toward particular out-groups, have found that all racial groups prefer living in neighborhoods dominated by their racial in-group, Charles's (2000) study incorporating multiple out-groups at once has found the opposite. Though preference still tends to be for in-group plurality, in-group majority is not preferred, though Whites come closest, with the highest preference for in-group neighbors.

They are also the most-preferred out-group neighbor of all other racial groups, while Blacks are always the least. Preference was found to be unrelated to perceptions of racial class difference and beliefs in shared racial fate (Charles 2000).

Clark and Maas (2009) examine the geographies of multiracial individuals across many California metropolitan areas. They find that the growing multiracial population tends to be more highly integrated with Whites than their monoracial counterparts are and view this as hinting at the beginning of a 'monochrome society' where race no longer matters. Part of this view undoubtedly comes from primarily viewing residential segregation as a matter of choice and preference versus constraint, though they admit that increased buying power does not fully explain the increased levels of integration.

Bennett highlights that the social treatment of multiracial groups has not moved consistently in one direction or the other through history, with distinct moments in history where they have been treated as "lower, higher, or the same as their parent groups" (Bennett 2011 p. 708). She employs the Dissimilarity Index to help determine the contemporary position of multiracial groups within the social structure by comparing their segregation to that of their monoracial counterparts. Her findings reject a strictly binary conceptualization of the color line in favor of a stratified ternary model of segregation. In this framework, non-Whites and non-Blacks, as well as multiracial Whites, occupy a middle ground socially, and this is reflected in their less intense segregation from Whites than Blacks face. However, within this middle ground, different groups face differing levels of segregation from Whites. She finds in her analysis of major metropolitan areas with significant populations of multiracial individuals, that those who identify as Black-White are more segregated from Whites than either Native American-White or Asian-

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White multiracial groups. This indicates that multiracial social position is influenced by the relative social position of constituent minority races, and reflects the unique and consistent position of Blacks at the very bottom of the United States's racial hierarchies (Bennett 2011). She further shows that the differences in levels of segregation from Whites between Black-Whites and the other two multiracial groups cannot be explained by differences in educational achievement, income, or professional occupational status. This framework acknowledges both that Blacks have not reaped the same benefits of assimilation theory's parity predictions as other ethnic and racial groups and that their levels of parity do not translate into spatial integration in the same way as other groups', and so they remain the most segregated racial group. This allows consideration of the legacy of discriminatory housing markets and group preferences in addition to spatial assimilation theory's concern for economic parity as an explanation of persistent racial segregation.

Holloway et al. (2012) have developed a method which incorporates a more nuanced understanding of diversity and segregation as overlapping and interrelated concepts rather than as necessary opposites. This method assigns neighborhoods into categories based upon a measure of diversity employing scaled entropy as well as upon which racial group dominates in the case of neighborhoods with low or moderate diversity. This approach clarifies that neighborhoods other than the most diverse will still be numerically dominated by one group or another, and this helps enable examination of segregation across multiple scales as well as examining subtle neighborhood change through time (Holloway et al. 2012). A moderately diverse White-dominated neighborhood and a moderately diverse Black-dominated neighborhood may be expected

to have quite different characteristics. This framework's subtlety should be especially useful in light of findings that neighborhood diversity is often perceived as a transitional state between one group's overwhelming domination and another's, usually either towards decline or towards gentrification (Peterman and Nyden 2001).

These authors employed this framework in their various explorations focusing on the unique geographies of mixed-race households. They found that households with both a White and a Black adult tend to avoid propinquity to both low diversity Black and low diversity White spaces, suggesting that either or both their choices and constraints lead them to more diverse spaces. Ethnographies of these households have suggested that they may be less exposed to racial "border patrolling" in these areas (Dalmage 2000 p. 79), or be attracted to neighborhoods who show a "willingness to traverse racial boundaries" (Wright et al. 2011 p. 2). They examined how racial mixing at the level of the household affects trends in segregation using a variety of standard measures (Ellis et al. 2007). Their analysis there and elsewhere draws attention to the ways counts of individuals may obscure important aspects of segregation and diversity across scales, as obviously two neighborhoods with the same counts of Blacks and Whites could look very different if one possessed all mixed-race households and the other half monoracial White and half monoracial Black households. Studying mixed-race households in neighborhood context is made difficult through privacy protections the Census Bureau has placed on this data at meaningfully small scales, and few researchers have followed their tack.

Others have explored how mixed racial identity is performed and alternately claimed in the context of racialized spaces (Mahtani 2002; Katz 2012). Mahtani (2001) challenges a long history of psychological studies which purport that those of mixed race

have difficulty adjusting to a society in which they have no racial group. In the context of

racialized space, these claims hint that these individuals have no place. She upsets this

claim by drawing attention to the way "any distress related to being multiracial is likely to

be a response to an environment that has internalized racist beliefs" (Mahtani 2001 p.

176). This study builds off of her and others' interest in where multiracial people feel "*in

place*" (Mahtani 2001 p. 176, original emphasis), keeping in mind that race is classed and

gendered and vice versa, and the "possibility that the individual may have concurrent

affiliations and multiple, fluid identities with different social groups" (Mahtani 2001 p.

176). This is not to deny the fact that individuals are racialized by those around them (of

all races) and that this limits in some ways the bounds of possibility of self-identification in

a society marked by a possessive investment in Whiteness (Lipsitz 2006).

What is clear is that the proliferation of mixed-race households over the last few

decades has led to the birth of a new and larger generation of multiracial individuals, and

the changes to the U.S. Census have made them increasingly visible. This research focuses

on the residential location of multiracial individuals, keeping in mind that the home is

only one place, though a very important one, where people enact their identities. The

research proposed here builds on all of the above authors' work but is primarily an

extension of the geographical methodologies of Wright et al.'s (2011) examination of

households and the conceptual framework of Bennett's (2011) examination of racial

structure through understanding the residential geographies of multiracial groups. While

both of those studies examined a large number of metropolitan areas, here I focus on one

specific metropolitan area (Atlanta) in hopes of adding depth. This thesis focuses on

exploring the influence of neighborhood diversity and segregation on the residential

location of multiracial individuals. Although the research proposed here does not extend

to exploring why an individual may or may not claim multiraciality, hopefully this research

will help to clarify to what extent the geographical and racialized experience of

multiracial individuals is different from that of those identifying as monoracial, and help to

elucidate to what extent the racialization of multiracial individuals constitutes a shared

experience.

Expectations

Based on the above reported literature, I expect to find that both multiracial Black-

White and Asian-White populations display distinct residential patterns from their

monoracial counterparts, occupying neighborhoods where they are less exposed to Whites

than monoracial Whites but more integrated with them than their Black or Asian

counterparts are. This would support a triracial social structure over a binary one which

would predict that these groups would conform closely to the patterns of either Blacks or

Whites. While neighborhood socioeconomic status should help to explain some of these

differences, they will fail to explain all the differences, leaving these populations to prefer

more diverse spaces even controlling for likely mitigating factors. At the same time,

though, I do not expect both of these multiracial groups to be equally in between their

monoracial counterparts. Black-White individuals are the recipients of a long history of

social treatment according to the system of hypodescent, and so their patterns of

residential location should be more closely related to that of Black individuals than to that

of Whites. Asian-White patterns, on the other hand, are more likely to resemble that of

Whites than Black-White patterns are. This would be in keeping with the

conceptualization of the contemporary U.S. racial hierarchy as being a stratified ternary

system, rather than a simple triracial system (Bennett 2011). This system predicts that while the theory of spatial assimilation applies well to some racial and ethnic groups, it does not apply well at all to Blacks, and in the case of multiracial groups, to those with any Blackness.

Given these expected findings, hopes for a monochrome society or one in which race has become an obsolete concept are slim, at least in the foreseeable future. Multiraciality and interracial unions should represent for assimilation theory the ultimate metric of assimilation, but even these households and their progeny do not politically and residentially mirror the majority group, though in some cases they are between their minority and majority counterparts. Even if society is moving toward the dissolution of racial boundaries, those marked by Blackness are receiving fewer fruits of this process than all other groups, multiracial or otherwise. Their assimilation will be slower and not move in a straight path forward, as evidenced by the vastly decreased likelihood of Black-White multiracial individuals to identify as White or marry Whites compared to all other multiracial groups.

CHAPTER 3

METHODOLOGY

Data Sources

This research project utilized publicly available data from the U.S. Census Bureau's 2007-2011 American Community Survey (ASC) 5-year estimates and the 2010 decennial census Summary File 1 (SF1), accessed from the National Historical Geographic Information System (Minnesota Population Center 2011). The ACS has replaced the "long form," formerly given to one household in six as part of the decennial census, and contains similar data received from samples taken each year and compiled into estimates spanning several years. This project made use of the 2007-2011 estimates to most closely as possible match temporally the data taken from the 2010 decennial census. The 2008-2012 estimates had not yet been released when research was conducted.

The decennial census provided the racial data forming the heart of this study, while the ACS largely provided contextual data entering the study as control variables. The SF1 racial data was preferred due to its precise counts whereas the ACS provides estimates based on sampling, sometimes with large margins of error. The use of the 5-year estimates over 1-year and 3-year minimizes the margins or error and assures that all relevant data is available at the census tract level, the unit of observation used in this study. Census tracts generally mirror definable neighborhoods (Iceland and Steinmetz 2003).

SF1 provided counts of individuals within tracts who selected each possible combination of races and ethnicity (Hispanic or non-Hispanic). Following Holloway et

al.'s (2012) method of creating a segregation-and-diversity classification, I combined the Asian category and the Native Hawaiian and Other Pacific Islander category into an Asian and Pacific Islander category to best match classifications in the 1990 census. Hispanics were treated as a racial group. The way the Census records Hispanic status makes it difficult to determine who among Hispanics consider themselves multiracial, so anyone marking Hispanic ethnicity will be considered monoracially Hispanic. This provided for a total of six possible racial groups: White, Black or African American (Black), American Indian and Alaska Native (Native American), Asian and Pacific Islander (Asian), Some Other Race (Other), and Hispanic.

Exploratory Analysis

In order to identify those neighborhoods having the highest concentrations of adults identifying as Black-White and Asian-White, I developed location quotients to compare the proportion of adults identifying thusly within a given tract to the proportion of such adults in the entire metropolitan area. Equation 1 shows this calculation:

(1) $LQ_j = (P_{ij} / P_j) / (P_{it} / P_t)$

Where LQ_j is the location quotient for multiracial adults (Asian-White or Black-White) in census tract j; P_{ij} is the count of such individuals in tract j; P_{it} is the total count of all such individuals in the region; P_j is the total adult population of tract j; P_t is the total adult population of metropolitan Atlanta.

This facilitated the calculation of Z-scores for each tract based upon Atlanta's mean tract location quotient (for each multiracial group of interest). I then identified those tracts with

Z-scores above 1.96. Were these concentrations by tract normally distributed, these would represent approximately the 2.5 percent of tracts with the highest concentrations of the multiracial individuals of interest (Wright et al. 2011). As it is, they represent approximately the highest 4 percent of concentrations. I isolate adults in this step to avoid conflating groups with potentially different factors affecting their residential geographies. Multiracial adults comprise about 1/3 of the multiracial population. I mapped tracts with high location quotients over a basemap depicting tract diversity and plurality to get a sense of where higher than average concentrations of these individuals reside within the metropolitan area's unevenly segregated landscape and engaged in tabular analysis to compare characteristics of these tracts with those of others.

For these exploratory steps and for later statistical procedures described below, I quantified neighborhood diversity using a measure of scaled entropy (Holloway et al. 2012). While the Asian-White and Black-White counts were based on adults only, neighborhood entropy and racial character (plurality) are based on all ages, including those under eighteen, in order to capture a more complete neighborhood context. For each census tract I extracted the number of residents (of all ages) identifying as any combination of each of the census's six racial groups and Hispanic ethnicity. Combining Asian with Native Hawaiian and Other Pacific Islander and treating Hispanic ethnicity as a racial classification yielded six racial categories. Those individuals identifying as multiracial were assigned to racial categories using proportional weighting preferencing minority categories (Holloway et al. 2012). In this procedure, only those who identify as monoracially White were counted as White, while any individuals who describe themselves as having Hispanic ethnicity were treated as monoracially Hispanic. Though it

is difficult, as previously discussed, to directly explore experiences of multiraciality of those identifying as Hispanic, this procedure allows them to be incorporated into the analysis as a contributor to neighborhood diversity. This procedure yielded 32 possible racial combinations, ranging from single race to those who identified with five racial groups. Non-Hispanic multiracial individuals were proportioned out to each of their component racial categories with the exception, if applicable, of the White category. I used these proportions to calculate a scaled entropy value for each census tract j:

(2) $E_j = s * \sum_{k=1}^{K} (k_j / t_j * \ln(k_j / t_j))$

This equation uses k to index the six racial groups and a constant s to scale the range of E_j between zero and one. Higher values of E_j indicate tracts in which the population is more evenly distributed across the six racial categories. The weighting scheme should not greatly affect the entropy scores, as only about 2 percent of Atlanta's population is multiracial, but allows multiracial Whites to contribute to the entropy score to a greater degree in White-dominated neighborhoods.

For the basemap mentioned above, to better convey the racial character of neighborhoods by highlighting the interwovenness of segregation with diversity, tracts were assigned into categories based upon their level of diversity. Those with scaled entropy values under 0.37 were classified as low diversity, those with values from 0.37 to 0.74 as moderate diversity, and those with values above 0.74 as high diversity. For those tracts in the latter two categories, I also identified the racial group most dominant in the tract (Wright et al. 2011).

Multiple Regression

While visual cartographic inspection and systematic tabular analysis began to reveal important differences distinguishing tracts containing the highest concentrations of multiracial individuals, I employed multiple regression to control for other neighborhood factors which might have bearing on the residential location of multiracial individuals such as income and proportion of owner-occupied households to help isolate the main neighborhood characteristic of interest for this study: neighborhood diversity. This also allowed all tracts, not just those with high location quotients, to figure into the analysis and help to reveal more subtle patterns.

The great methodological challenge of this project consisted of constructing appropriate multiple regression models to better understand the sorts of neighborhoods in which Black-White and Asian-White individuals tend to locate residentially. These models attempt to assess the relationships between a set of independent variables with a dependent variable: the count of the individuals in a given tract who are members of the group of interest. The primary independent factor of interest in this study is the entropy score described above, reflecting a neighborhood's racial diversity.

To control for other elements defining neighborhoods and thereby better isolate the effect of racial segregation and diversity on the residential geographies of multiracial individuals, I selected from the census a set of candidate independent control variables to build into the model. I controlled for the age structure of the neighborhood by including the proportion of the population younger than eighteen. Bearing in mind the influence of immigration and the unique role gateway neighborhoods play in assimilation, I included the foreign-born proportion of the population. In order to control for the socioeconomic

status of the neighborhoods, I examined three variables often used in analyses of this sort (e.g., Wright et al. 2011): the proportion of the population that completed college, the proportion of households that are owner-occupied, and median household income. I included population density to help account for a neighborhood's position within the metropolitan landscape (i.e., low-density tracts are mostly located in the suburban or exurban portions of the metropolitan area, while high-density tracts are located in the core of the metropolitan area). Additionally, as the dependent variable is a count of individuals, some variable reflecting total population of each tract must be included in the model.

I carefully developed the final model focusing primarily on the Black-White population, and then used this model as the basis for all comparative models. Although the process and decisions outlined below are presented largely in a linear fashion, finding and fitting the best model often involved making multiple decisions concurrently or iteratively revisiting previous decisions after troubleshooting newer concerns. Models within the Poisson regression family are most appropriate for situations in which dependent variables consist of counts (Long and Freese 2006). In keeping with similar work conducted concerning the interracial household by Wright et al. (2011), I selected negative binomial regression (NBRM) from this family to model the data. The balance of AIC, BIC, and LRX2 tests confirmed that this model fit the data better than other models in the family, including Poisson with or without zero-inflation and negative binomial with zero-inflation. This is consistent with my conceptual understanding of the data and the processes linking them. The variance exceeds the mean, but there is no special process creating zero counts. Several important diagnostic tests had to be performed using

Ordinary Least Squares Models, due to limitations with the statistical software and the

greater study scholars have accorded these models.

Equation 3 below shows the final model. *Y* is whichever group of interest is under

discussion. The link function for negative binomial models is the natural logarithm of *Y*.

(3) $Y = \beta_0 + \beta_1 * LogPop + \beta_2 * D_{Asian} + \beta_3 * D_{Black} + \beta_4 * D_{Hispanic} + \beta_5 * E * D_{White} + \beta_6 * E$

$* D_{Asian} + \beta_7 * E * D_{Black} + \beta_8 * E * D_{Hispanic} + \beta_9 * D_{High} + \beta_{10} * ForBorn + \beta_{11} *$

$OwnOcc + \beta_{12} * Minor + \beta_{13} * College + \beta_{14} * PopDen$

Where, for each tract: *LogPop* is the natural logarithm of total population; categorical

variables D_{Asian}, D_{Black}, and $D_{Hispanic} = 1$ when Asians, Blacks, or Hispanics are dominant

(plurality), respectively, and White plurality is the reference group; E = scaled entropy;

categorical variable $D_{High} = 1$ when tract is highly diverse; *ForBorn* = proportion foreign-

born; *OwnOcc* = proportion of households owner-occupied; *Minor* = proportion under

eighteen; *College* = proportion with a college degree; *PopDen* = population density.

I removed eleven census tracts in which the majority of the population was in some

sort of group housing, such as prisons or dormitories, as these populations might skew the

results and are not among the populations of interest. I removed four additional tracts for

having no population present at all. These accounted for less than 2 percent of the total

tracts within the metropolitan area, and the final analysis contained 931 tracts. While I

initially attempted to include median income in the model to help control for the

socioeconomic status of neighborhoods, along with proportion having completed college

and proportion of households owner-occupied, these three variables displayed potentially

problematic multicollinearity. In determining which of these to keep in the model, removing income reduced Variance Inflation Factors (VIFs) more than did removal of the other two variables, and I judged the new VIFs to be reasonable (the highest VIF in the final model was 9.65 and the average was 3.83). Coefficient directions remain as with all three included, but the significance of the remaining coefficients increased and the Pseudo R^2 for the model as a whole increased very slightly.

There were several influential observations and many outliers, but examination of DFBetas and DFits indicated that they were not so problematic that they should be removed from the analysis. Transforming the total population to its natural logarithm greatly helped mitigate the effects of several substantial outliers on that front, as well as helped to reduce apparent heteroskedasticity. Although these tracts have populations greatly above the typical population range for census tracts, I preferred this method of mitigating the effects of population outliers over removing them entirely from the analysis.

The main variable of interest in this study, *E*, or entropy, does not stand alone in the model but rather comes into play as part of a set of interaction terms with each of four categorical variables indicating which racial group possesses the plurality in any given tract. In other words, this set indicates which group is numerically dominant, if not necessarily in the majority, and covers all tracts no matter how diverse. This allows an analysis of how the level of neighborhood diversity may affect the number of multiracial individuals living in a neighborhood differently depending on the racial character of the neighborhood. An additional categorical variable, in a set separate from those above, distinguishes tracts which are also highly diverse. All the model diagnostics described above are aimed at providing confidence in the information these components of the

model can provide. Analysis of the coefficients preceding these interaction terms and their level of statistical significance is critical to shedding light on the questions at hand.

Analysis of models based on Black-White adults and Asian-White adults represents the main methodological thrust and theoretical interest of this project, but several other models were constructed and juxtaposed with these models for purposes of comparison with and reference for these populations. These include separate models looking each at all monoracial White adults, all monoracial Asian adults, and all monoracial Black adults. Comparing White-Black and White-Asian models further develops our understanding of the unique ways Blacks are racialized in the United States, and the concomitant different challenges multiracial Blacks may face as they seek places in which to enact their identities. Comparisons with models of monoracial populations highlight similarities and differences between multiracial geographic patterning and that of those identifying singularly.

CHAPTER 4

DESCRIPTIVES AND RESULTS

Study Area Descriptives

While census tracts are generally designated to match neighborhoods and to minimize to some extent population heterogeneity, they cannot do so perfectly, as they also ideally remain within certain population and size thresholds. Even so, there is substantial variation in both the geographic size and the population of tracts within the Atlanta metropolitan area. Table 1 shows descriptive statistics for factors relevant to this study. Of course, the unit of observation is the census tract, so while means listed below indicate the mean tract value, that value may not be exactly the mean value for the entire metropolitan area, but is typically very close.

Table 1. Descriptive Statistics

	Mean	Std. Dev.	Min	Max
Scaled Entropy	0.4585	0.1784	0.0673	0.7995
Adult Black-White count	10.15	7.80	0	51
Adult Asian-White count	10.16	9.78	0	68
Black-White count (all ages)	32.10	23.50	0	131
Asian-White count (all ages)	20.49	19.59	0	154
Adult White count	2214.12	1636.38	6	11155
Adult Black count	1260.69	1341.20	3	10617
Adult Asian count	200.80	303.74	0	2672
% White	49.86	30.15	0.31	97.24
% Black	33.78	30.27	0.27	98.06
% Asian	5.10	6.26	0	47.31
% Hispanic	10.37	12.47	0.41	91.93
Total Population	5613.08	2676.79	914	20655
Area (mi.^{2})	9.09	19.18	0.15	237.77
% Foreign-born	13.31	12.03	0	72.26
% Households Owner-Occupied	66.08	23.95	0	99.77
% Minor	25.88	5.59	0.80	54.90
% College Degree	34.38	20.10	1.37	91.81
Population Density (per mi.^{2})	2325.73	2146.05	24.61	21189.83

Entropy varies widely between tracts, highlighting how segregation and diversity are spatially uneven. While the minimum tract entropy (0.0673) is close to zero, indicating that some tracts are nearly universally composed of a single racial group, entropy never gets close to one, which would indicate a tract with all racial groups equally represented. This is not surprising, as not all racial groups are evenly represented in the metropolitan area as a whole. The metropolitan area's overall entropy score, not shown in the table, is 0.6417. This indicates that while the average tract is moderately diverse with a mean entropy score of 0.4585 (between 0.37 and 0.74), it is actually less diverse than the region in its entirety.

As the table shows, most tracts have very few Black-White or Asian-White individuals, with means both approximately ten persons per tract, and fewer than 70 such in *any* given tract. Any given racial group's percentage in a given tract can be zero or nearly so. Whites', Blacks', and Hispanics' can reach nearly 100 percent, while the highest percentage Asian in a neighborhood is just under 50 percent.

There is considerable range also in the non-racial factors this study considers. Some tracts have no foreign-born residents, while a few are significant immigrant enclaves with nearly 75 percent of residents having been born outside of the United States. Despite the removal of tracts in which more than half of residents were in some kind of group quarters, tracts yet remain with no owner-occupied households (I verified that there *were* households in these tracts). Some tracts consist of over half minors, while some, again despite the removal of tracts with a majority in group quarters, possess virtually all adults. Level of education varies widely, ranging from nearly zero bachelor degree holders to over 90 percent. Size of tracts varies from as little as under a fifth of a square mile to over 200

square miles, and populations range from under 1,000 people to over 20,000. While area of tracts does not enter this study as a direct concern, the vast differences in size can make meaningful visual cartographic analysis of metropolitan-wide patterns of neighborhoods more difficult. Area indirectly enters the regression phase of the analysis insofar as it is a component of population density, which also varies considerably. The densest neighborhoods of Atlanta can reach over 20,000 people per square mile, while the most sparse parts of the region have fewer than twenty-five.

Mapping Multiracial Concentrations

The basemap in Figure 1 shows metropolitan Atlanta's census tracts categorized by both level of diversity and what can be called the "context of diversity" (Wright et al. 2011 p. 18), or which racial group has the highest proportion in a neighborhood. This map reveals certain interesting patterns which would not be discernible if these concepts were considered apart. While it is true that the farthest suburban or rural fringe of the region is overwhelmingly White, this is moderated as one moves towards the city, with an inner ring of moderately diverse White tracts. An exception is a corridor of very White tracts reaching south towards the city through Buckhead from the outer ring. Similarly, while the area south of downtown is overwhelmingly Black, this gradually transitions to White with moderately diverse Black and then moderately diverse White tracts reaching the outer ring. Asian-dominated tracts are extremely scarce and cling opposite one of two Hispanic clusters to a large highly diverse area, situated near the inner edge of Gwinnett County. White spaces within the map are tracts which were removed from the analyses due to zero population or a majority of residents residing in group quarters.

Fig. 1: Atlanta's Segregated Diversity

Basemap
- Low Div. White
- Low Div. Black
- Low Div. Hispanic
- Mod. Div. White
- Mod. Div. Black
- Mod. Div Asian
- Mod. Div. Hispanic
- High Diversity

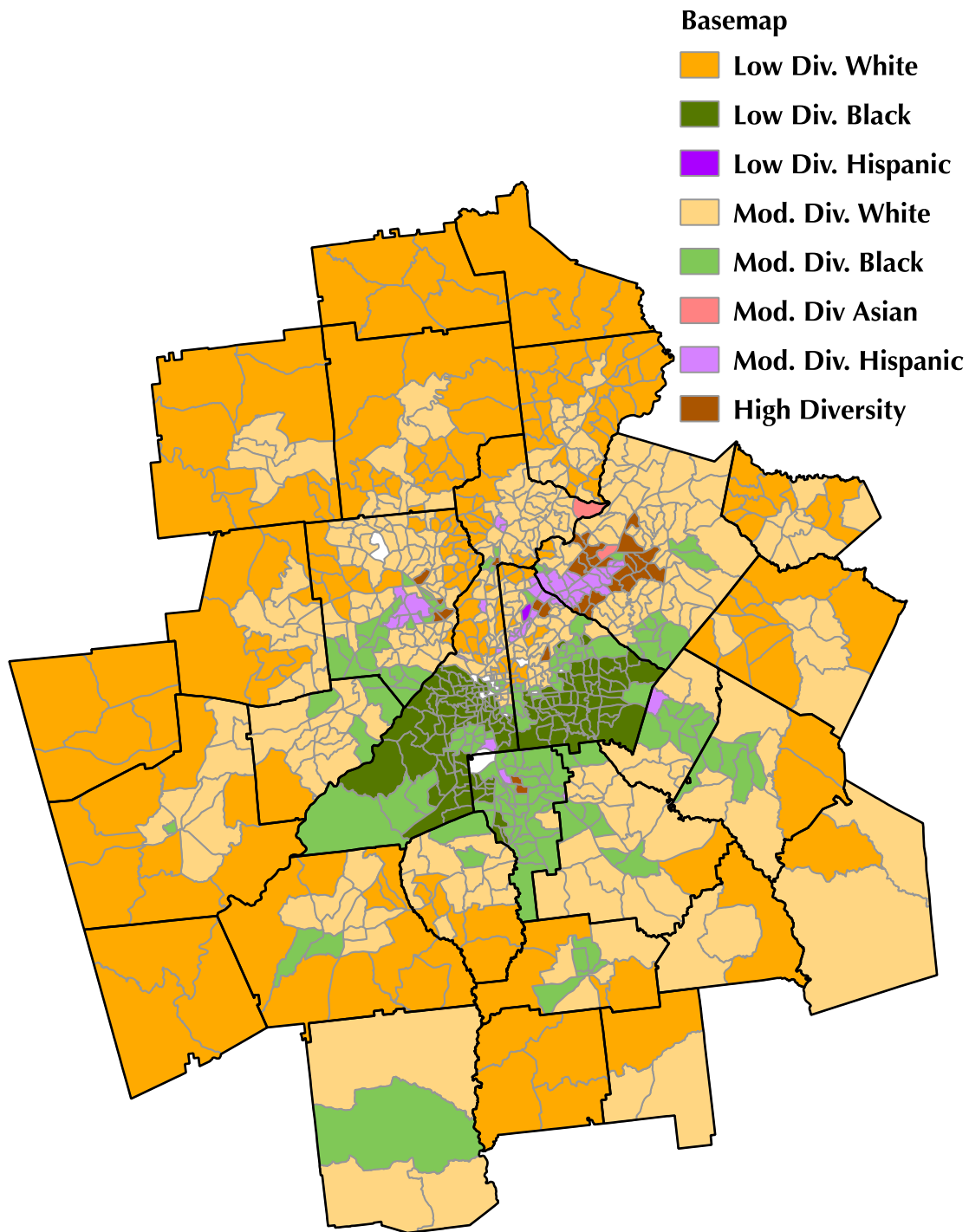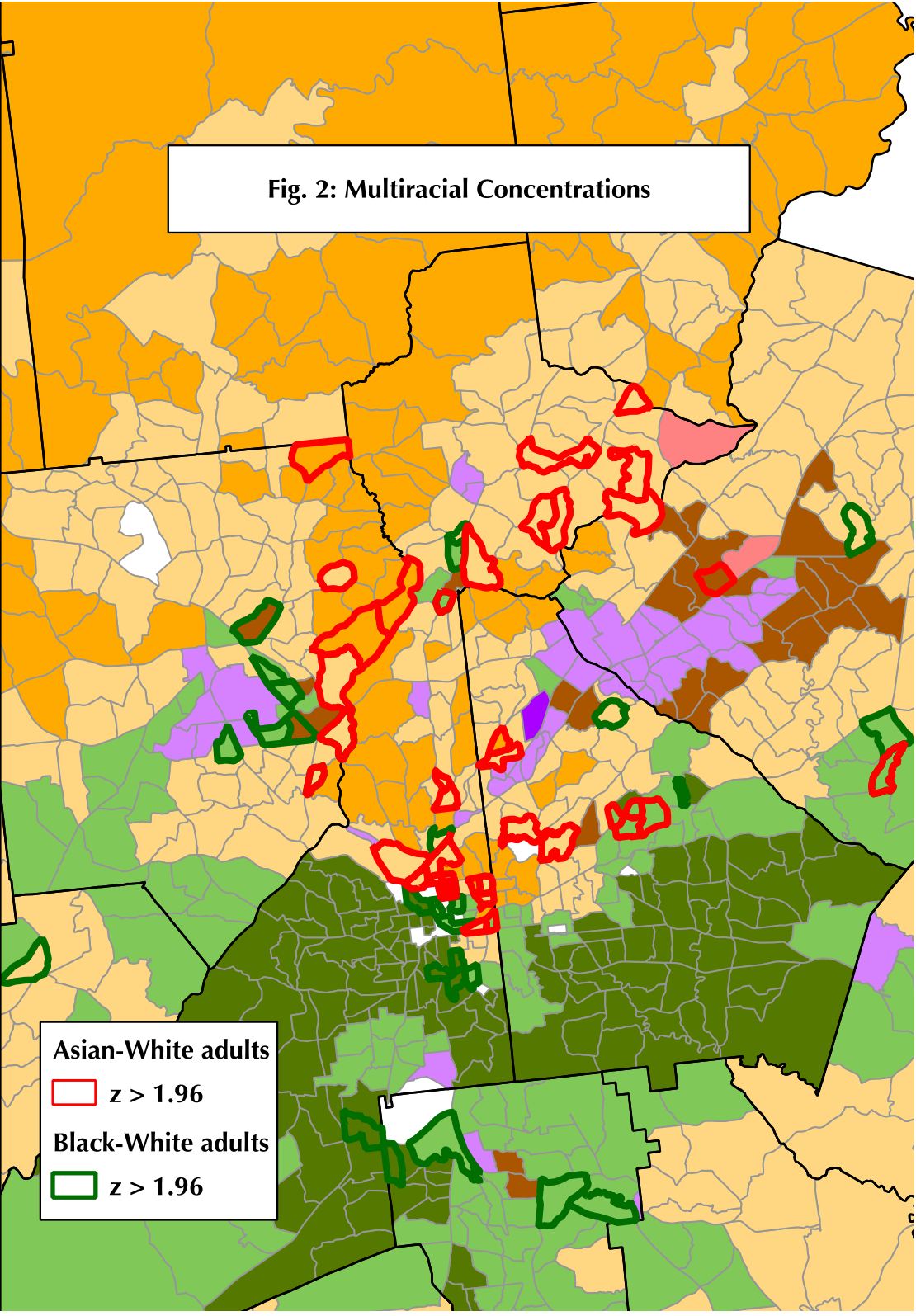Fig. 2: Multiracial Concentrations

Asian-White adults
☐ z > 1.96

Black-White adults
☐ z > 1.96

In Figure 2, this basemap has been overlaid with outlines of tracts which are the highest concentrations of each multiracial group of interest. This map has been zoomed in toward the heart of the region, where the vast majority of these tracts lie. The generally small size of these tracts near the heart of the city may make the underlying basemap categories hard to discern, but it generally looks like these Black-White concentrations tend to be in, or in some cases, very near to moderately diverse Black tracts. On the other hand, Asian-White concentrations tend to be in or near moderately diverse White tracts. The vast majority of the highly diverse tracts and all of the Hispanic-dominated tracts lack these highest concentrations of multiracial people. Tracts with concentrations tend to lie next to at least one other tract possessing a concentration.

Tabular Analysis

To better quantify some of the patterns hinted at above, Table 2's middle row depicts the most common tract types in the Atlanta metropolitan region by percentage of total tracts. This can then be compared with the top and bottom rows, which depict the percentage of tracts with a high concentration (LQZ > 1.96) of Black-White and Asian-White individuals, respectively, which fall within each of these tract categories. Figure 3 graphically displays these proportions for ease of comparison. As the metropolitan area has very few or no Asian-dominated tracts or low diversity Hispanic tracts, and none of them contain multiracial concentrations of interest, they are excluded from the table.

Table 2. Distributions of Concentrations of Black-White and Asian-White Individuals by Tract Type (in percent)

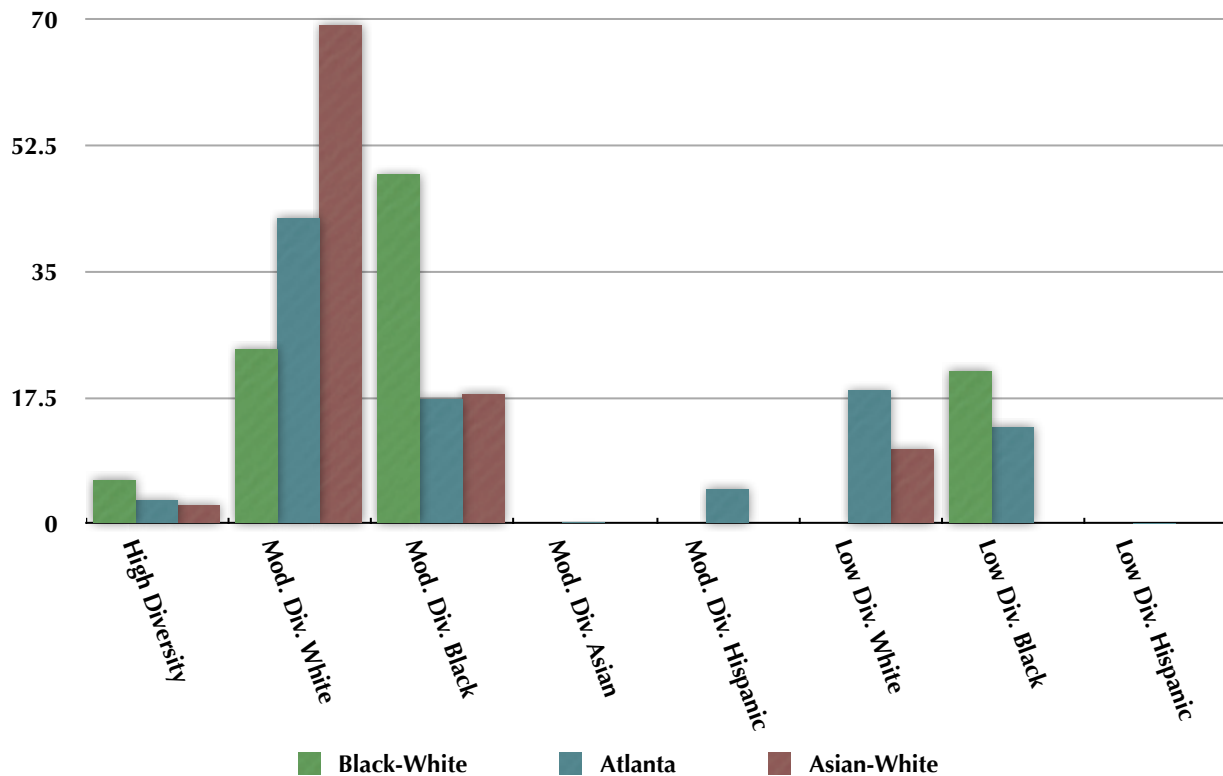|	Highly Diverse	Mod. Div. White	Mod. Div. Black	Mod. Div. Hispanic	Low Div. White	Low Div. Black	Total tracts
Black-White LQZ > 1.96	6.1	24.2	48.5			21.2	33
All tracts	3.2	42.4	17.3	4.9	18.5	13.4	931
Asian-White LQZ > 1.96	2.6	69.2	18.0		10.3		39

Fig. 3: Tract Type Distribution

Approximately 42 percent of Atlanta's tracts are moderately diverse White, the most common tract type. The next most common is non-diverse White tracts at 19 percent

50

followed closely by moderately diverse Black tracts at 17 percent. The rankings by percentage of tracts with high concentrations of Black-White individuals falling in each category are quite different, however. The largest share of these tracts falls within moderately diverse Black tracts followed far behind by moderately diverse White tracts and then non-diverse Black tracts. In fact, the proportion of tracts with high concentrations of Black-White individuals falling within moderately diverse Black neighborhoods is almost three times the proportion of such tracts in the region. On the other hand, the proportion of tracts with high concentrations of Black-White individuals falling within low diversity neighborhoods is almost about two-thirds the proportion of such tracts in the region. The proportion of tracts with high concentrations of Black-White individuals which are also highly diverse is almost twice that of such tracts in the region, though it may be improper to place too much importance on this, due to the low number of tracts which are highly diverse.

For Asian-White concentrations, the results are quite different. Tracts with these concentrations are overwhelmingly moderately diverse White neighborhoods. 70 percent of them are, while only 42 percent of Atlanta's tracts are such. The proportion of tracts with these concentrations in moderately diverse Black tracts about matches the proportion in the region overall. The region has almost twice the proportion of non-diverse White tracts as tracts having high concentrations of Asian-Whites have. Around 90 percent of tracts with such concentrations are in some sort of moderately diverse neighborhoods.

In the cases of both multiracial groups, the proportions of concentrations residing in moderately diverse tracts is far greater than such tracts represent in the region overall, though this is more extreme in the case of Asian-Whites. The other side of this tendency is

that the proportion of these concentrations in low diversity tracts is far lower, for both groups, than are present in the region overall. So both groups seem to disproportionately reside in neighborhoods which are more racially diverse. However, while all the concentrations of Asian-Whites in low diversity tracts are in White-dominated tracts (bearing in mind that there are very few Asian-dominated tracts), none of the concentrations of Black-Whites in low diversity tracts are in areas dominated by Whites. This seems to clearly indicate that the forces shaping the residential geographies of these two multiracial populations are quite different, despite both tending to locate in more diverse areas. Again, while the dearth of Asian-dominated tracts makes it difficult to draw conclusions regarding the likelihood of Asian-White concentrations in such areas, there certainly seem to be enough non-diverse White tracts in Atlanta to make very striking indeed that there are no concentrations of Black-Whites within these tracts. That is not to say that the Asian character of these moderate diversity tracts in which Asian-Whites concentrate is not relevant, despite never reaching plurality. The mean proportion of Asians in such tracts is 12.12 percent, virtually twice the mean proportion of Asians in all moderate diversity tracts, 6.15 percent. Less striking, but still worth mentioning, is the fact that neither of these populations concentrate in moderately diverse Hispanic tracts.

Regression Modeling

While visual cartographic inspection began to reveal elements of the residential geographic patterning of Black-White and Asian-White individuals, analysis was hampered by the sheer number of tracts and the great differences in their sizes, as well as by the limited contextual information which can be effectively conveyed and absorbed through one map or digested together through a series of maps. Certain trends became

apparent, though, and these were clarified somewhat through tabular analysis examining what sorts of tracts in terms of racial diversity and its context tend to possess the greatest concentrations of each group. While these techniques were certainly revealing, they also obscure a great deal of information. As stated above, there are many factors which might exert influence on the residential locations of any type of individual, as we are situated across multiple axes of identity. That being said, though, racial categories reflect an imbeddedness in social hierarchies often across a multitude of these axes. It can be difficult to untangle the multiple axes across which we are racialized, but multiple regression modeling can help to strip away the intertwined correlations marking race and reveal tendencies unattributable directly to easily measured markers of difference.

The final models I developed were carefully calibrated using the Black-White population and then employed with the Asian-White and monoracial groups to allow a comparison of the unique forces linked to the residential geographies of multiracial populations. The negative binomial regression model was the ideal model suited to the nature of the data and theory linking the processes behind them. As discussed in Chapter 3, tests confirmed that this model was most statistically appropriate. I examined the data and the model to search for problematically influential outliers and to verify homoskedasticity, functional form, and reasonable levels of multicollinearity. While I detected a statistically significant level of spatial autocorrelation in the residuals, the Moran's I was very close to zero at under 0.1 for the Black-White model and under 0.2 for the Asian-White model, regardless of which common spatial weights matrix I used. This means that locations where the model is poor at predicting counts tend to be near other areas where it is similarly challenged. While this could indicate that the model is

somewhat misspecified in its independent variables, and that there are other important

spatial variables unidentified here, this would not be surprising given the model

parameters discussed below. On the other hand, it may indicate a slight tendency for

counts in one tract to be dictated somewhat by variables across tract lines. With no clear

theory of which variables are most likely to affect adjacent tracts or indeed what in each

case would constitute adjacency, I have decided to let the models rest as is. Whatever the

cause of the autocorrelation, it does not affect the coefficients produced by the models,

though it may deflate somewhat the standard errors.

While the final models only had Pseudo R^2s hovering between 0.15 and 0.18,

indicating that there is a considerable amount of variation in the counts of each group that

these models cannot explain, the vast majority of parameters were statistically significant,

as was the model as a whole, as shown by Chi-square tests. Table 3 shows the model's

coefficients, and bold numbers indicate statistically significant parameter estimates ($p <$

0.05). Most of these coefficients were significant at the $p < 0.001$ level.

Table 3. Negative Binomial Regression Results (parameter estimates)

	Black adults	Black-White adults	White adults	Asian-White adults	Asian adults
LogPop	**1.1329**	**1.0788**	**1.0078**	**0.9661**	**0.7716**
Asian-Dominated	-0.9757	-2.1369	0.2818	-0.2270	0.3402
Black-Dominated	**1.7042**	**0.5788**	**-1.3765**	**-0.7841**	0.0053
Hispanic-Dominated	**0.8337**	-0.0031	**-0.6425**	**-1.4679**	**-0.8550**
TE * WD	**5.5142**	**2.8330**	**-0.3658**	**0.6069**	**3.3467**
TE * AD	**11.6045**	**11.7241**	-3.2893	1.8705	2.9468
TE * BD	**-0.3115**	**0.8327**	**5.4380**	**3.7897**	**3.7264**
TE * HD	**2.8669**	**2.4548**	**1.5053**	**5.3265**	**4.3656**
Highly Diverse	**-0.2400**	-0.1207	**-0.2389**	-0.1530	0.2185
Prop. Foreign-Born	**-3.1563**	**-1.4456**	**-1.5209**	**1.5282**	**4.3879**
Prop. Owner-Occupied	**-0.2882**	**-0.7362**	**0.4306**	**0.2608**	**0.6666**
Prop. Minor	**-2.1316**	**-1.4255**	**-2.6246**	**-1.9336**	**1.0824**
Prop. w/ College Degree	**-0.8364**	**0.3157**	**0.2648**	**1.3501**	**2.3712**
Population Density	**0.0000**	**0.0000**	**-0.00002**	**0.0001**	0.0000
Constant	**-3.6868**	**-7.2853**	**-0.7895**	**-5.9788**	**-1.9296**

Because this model is not linear, interpreting the coefficients is not exactly as straightforward is if this were an Ordinary Least Squares model. The right-hand side of the model equals the natural logarithm of the left-hand side (the dependent variable), rather than equalling it directly. As the table indicates, the coefficient for the college variable is

0.32 in the Black-White model, which indicates that a one unit increase (100 percent or from zero to one) in the proportion of residents who have earned a bachelor's degree can be expected to lead to an increase of 0.32 in the mean of the natural logarithm of the expected count of Black-White individuals in a given tract, holding all other variables constant.

While this table is helpful for understanding how the model works, the tables below are more helpful for understanding how the independent and dependent variables are linked. This table reports the coefficients' exponentiated values, which are based on multiplying the coefficients by the relevant independent variable's standard deviation and then exponentiating with base *e*. The result shows the factor change in the mean expected count of the dependent variable with a one standard deviation increase in the variable. Table 4 displays these values for the non-racial control variables, and bold numbers indicate exponentiated values based on statistically significant parameter estimates ($p < 0.05$).

Table 4. Negative Binomial Regression Results (effects of control variables: e^bStdX)					
	Black adults	Black-White adults	White adults	Asian-White adults	Asian adults
% Foreign-born	**0.6841**	**0.8404**	**0.8328**	**1.2018**	**1.6953**
% Households Owner-Occupied	**0.9333**	**0.8383**	**1.1087**	**1.0645**	**1.1731**
% Minor	**0.8876**	**0.9234**	**0.8635**	**0.8975**	**1.0624**
% College Degree	**0.8453**	**1.0655**	**1.0547**	**1.3117**	**1.6106**
Population Density	**1.0584**	**1.0882**	**0.9578**	**1.2061**	1.0420

So for example, as the proportion of a tract's residents who are foreign-born increases by one standard deviation (referring back to Table 1 we can see that this is 12.03 percent), we can expect the mean expected count of the number of Black-White adults to be reduced by a factor of 0.84, holding other variables steady. In other words, we can predict a 16 percent decrease (1 - 0.84). Thus values less than one lead to a decrease in the count, and values over one generally lead to an increase in the count, as just the variable of interest increases. Interestingly, none of the values for Black-White counts are between the values for Black counts and White counts, while the values linking Asian-White counts to proportion foreign-born, proportion minor, and proportion with college degree are all between the values for Whites and for Asians. Asian-White counts are much more sensitive to population density than are the counts of their monoracial counterparts. Black-White counts are less sensitive than either White counts or Black counts to proportion foreign-born and proportion minor, decrease more severely than Black counts in response to increases in proportion owner-occupied housing, and increase more than White counts based on higher proportions of college education. Table 5 shows which of their monoracial counterparts have values most similar to each multiracial group. As can be seen, Asian-Whites' values are closer to that of Whites than to that of Asians for four out of five of the variables, whereas Black-Whites' values are closer to that of Blacks than to Whites for three out of five variables.

Table 5: Most Similar Monoracial Counterpart Coefficients		
	Black-White	Asian-White
% Foreign-born	W	W
% Households Owner-Occupied	B	W
% Minor	B	W
% College Degree	W	W
Population Density	B	A

While comparison of the parameters of these seemingly non-racial data hints at how the residential geographic patterning of these two multiracial groups is quite different and highlights the ways racialization crosses and incorporates multiple axes of difference, their inclusion in the regression modeling serves another vital role. They act to control for the differentiation they represent, and allow the isolation of the key variable of interest for this study: racial diversity. Wright et al. (2011) showed both that Black-White interracial households tend to be disproportionately located in more diverse neighborhoods and to be less sensitive to what racial group predominates, and this study aims to evaluate how these tendencies may hold for multiracial individuals. This model includes categorical variables representing the prevalent racial group of a given tract. Table 6 summarizes the factor changes expected in the average count of individuals in each group based on which group predominates in a tract versus when Whites predominate, and bold numbers indicate exponentiated values based on statistically significant parameter estimates ($p <$ 0.05). Figure 4 graphically displays these changes as percentage increase or decrease for ease of comparison, leaving out Asian-dominated tracts due to their paucity and lack of

statistical significance. The categorical variable additionally distinguishing highly diverse

tracts was only significant for Black and White adults, whose counts each can be expected

to fall by 21 percent in such tracts.

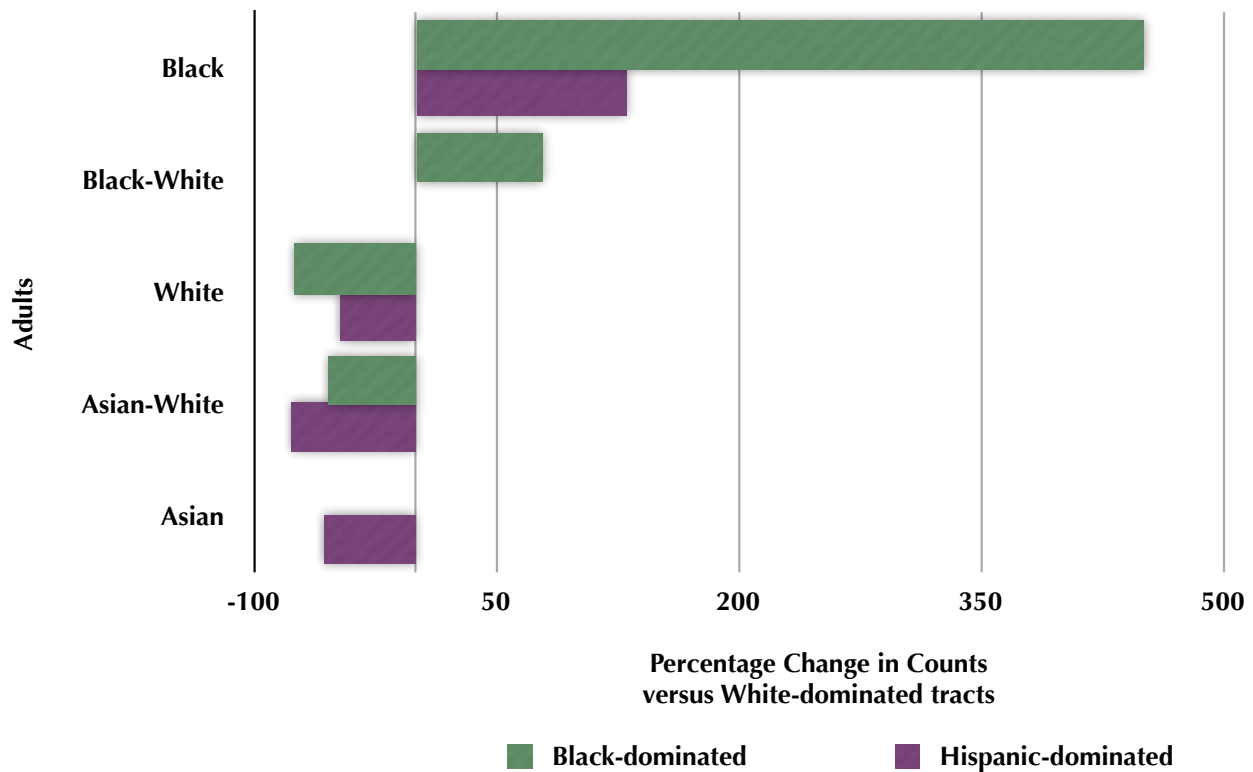| Table 6. Negative Binomial Regression Results (effects of racial predominance versus White predominance: e^bX)					
	Black adults	Black-White adults	White adults	Asian-White adults	Asian adults
Asian-Dominated	0.3769	0.1180	1.3255	0.7969	1.4052
Black-Dominated	**5.4971**	**1.7839**	**0.2525**	**0.4565**	1.0054
Hispanic-Dominated	**2.3018**	0.9969	**0.5260**	**0.2304**	**0.4253**

Fig. 4: Effect of Racial Context

White predominance serves as the reference group for these categorical variables, as predominantly White tracts are the most common in this region. Holding all other variables constant, the mean of Black-White counts can be expected to be 78 percent higher in predominantly Black tracts versus in White tracts. White counts show a 75 percent decrease on average from Black to White tracts. While this difference in sensitivity is likely not statistically significant, it is clear that Black-White counts are less sensitive to Hispanic predominance than either Black or White counts. Black counts show a 130 percent increase on average and White counts a 47 percent decrease, while Black-White counts show no statistically significant change. Interestingly, while Asian-White counts

are less sensitive than White counts to Black predominance but more sensitive than Asian counts, they are more sensitive than either to Hispanic predominance.

One key finding by Wright et al. (2011) was that Black-White interracial households responded differently to a neighborhood's level of diversity depending on which racial group was most prevalent there. While tract entropy (my quantification of diversity) does not enter the model by itself, it enters within interaction terms with each of these racial dominance categorical variables. This allows the model to differentiate how entropy affects racial group counts depending on the racial character of a neighborhood. Table 7 summarizes the factor changes in the racial counts predicted in each of the four neighborhood pluralities in Atlanta based on increases in entropy of one standard deviation (referring back to Table 1 we can see that this is 0.1784 with a mean of 0.4585), and bold numbers indicate exponentiated values based on statistically significant parameter estimates ($p < 0.05$). To be clear, here the standard deviation is that for entropy across all tracts rather than within each plurality. Figure 5 graphically displays these changes as percentage increase or decrease for ease of comparison. I leave out Asian-dominated tracts in Figure 5 and all further discussion below, due to their paucity (only two in the metropolitan area).

| Table 7. Negative Binomial Regression Results (effects of entropy by racial dominance: e^bStdX)					
	Black adults	Black-White adults	White adults	Asian-White adults	Asian adults
White-Dominated	**2.6739**	**1.6575**	**0.9368**	**1.1143**	**1.8165**
Asian-Dominated	**7.9234**	**8.0942**	0.5562	1.3960	1.6915
Black-Dominated	**0.9460**	**1.1601**	**2.6378**	**1.9659**	**1.9438**
Hispanic-Dominated	**1.6675**	**1.5494**	**1.3080**	**2.5858**	**2.1786**
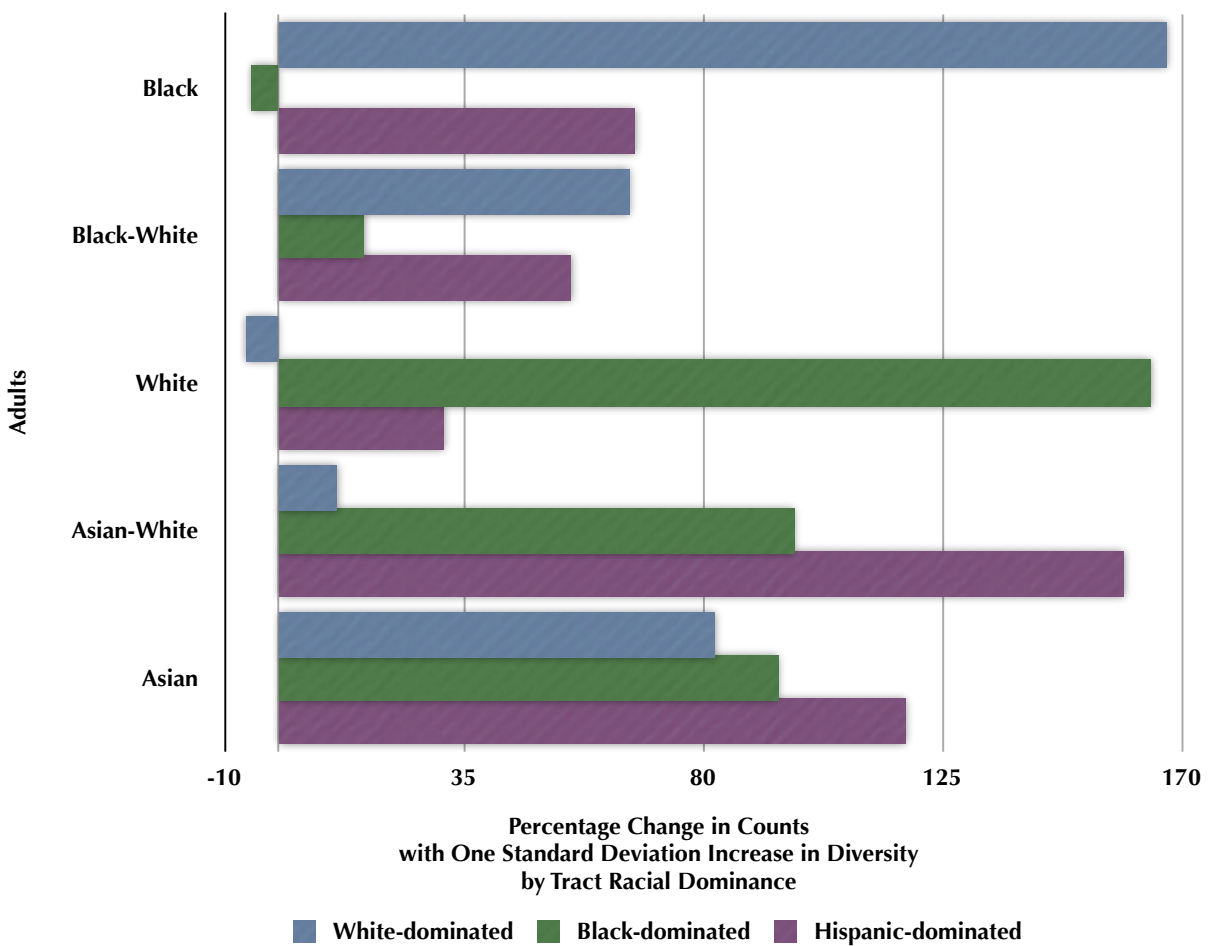
Fig. 5: Effect of Diversity by Racial Context

These results indicate that there are only two combinations of racial group with tract dominance where increasing diversity leads to lower counts: Whites in predominantly White tracts and Blacks in predominantly Black tracts. Although the entropy score can vary widely even while holding the proportion of the prevalent group constant, based on a movement toward equalization of the other racial groups, often an increase in entropy will signify a decrease in the proportion of the most prevalent group as it too moves toward equalization. So these findings may to some extent simply be an artifact of the math behind the calculation of entropy based on individuals, which are also the basis for the count on the left hand side of the model.

The group most sensitive to increases in diversity in White-dominated tracts are Black adults. White adult counts receive a similar boost in Black-dominated tracts with increases in diversity. Again, as these two racial groups are easily the two most prevalent groups in the region, this could be somewhat the result of the way entropy is calculated, as increased diversity in an area, to the extent that it may reflect a decrease in the proportion of the most prevalent group in a tract, might tend to lead to the bulk of the freed-up proportion going to the other group most prevalent in the region overall. For Black-dominated tracts, rankings of sensitivity to these tracts versus White tracts are exactly opposite rankings of effect of entropy in these tracts. The correlation coefficient between sensitivity to Black tracts versus White tracts and the effect of entropy in these tracts is -0.80, indicating that inhibition towards Black tracts is highly correlated with reduction in inhibition due to diversity, increasing the likelihood that diversity in these tracts may really be standing in for lack of Blackness. This ranking flip is not present in Hispanic tracts and the correlation coefficient there is only -0.22.

Of primary interest, of course, are the sensitivities to entropy of the two multiracial groups, which should be virtually unaffected by the calculation concerns raised above. Black-White counts are most sensitive to entropy in White-dominated areas and least sensitive in primarily Black areas. The count of such individuals can be expected to increase on average by 66 percent in White tracts with a one standard deviation increase in neighborhood diversity, holding other variables constant, and by only 16 percent in mainly Black areas. Asian-White counts, on the other hand, are most sensitive in Hispanic-dominated areas and least sensitive in primarily White areas. These counts rise on average by 59 percent and just 11 percent respectively. The ratios of sensitivity to entropy in White areas is much larger for Black-Whites over Blacks than Asian-Whites over Asians, indicating that diversity is disproportionately important for Black-Whites.

Results Distillation

These three main methods of analysis have each revealed key clues to better understand the residential geographies of Black-White and Asian-White populations. Simple visual examination of where the most dense clusters of these groups lie upon the Atlanta metropolitan landscape revealed that they tend to be closer to the city center rather than on the metropolitan fringes and that they tend to cluster in small groups of neighborhoods. Overlaying these clusters onto a basemap that uniquely shows the region as an overlapping patchwork of both segregation and diversity revealed that these clusters tend to be located in moderately diverse neighborhoods and often nestle at the edges of areas proportionally dominated by different racial groups.

Tabular analysis quantified some of these visual patterns by showing that these patterns are not random, but rather that there are significant differences between the types

of tracts where these concentrations lie and the overall regional balance of tract types. Results here verified that both multiracial groups were more likely to be in moderately diverse tracts than would be the case were they distributed randomly. These results are consistent with those found for interracial Black-White households both in Atlanta and across each of the other eleven metropolitan areas Wright et al. (2011) considered. For concentrations of Black-White individuals in Atlanta, the balance of moderately diverse neighborhoods was with moderately diverse Black tracts rather than White tracts, and as in their study of households, the multiplicative mismatch (ratio) between proportion of concentrations in moderately diverse Black tracts and of these tracts in each region were always greatest of any tract-type mismatches, indicating strongest disproportional preference. Those Black-White concentrations which were in non-diverse neighborhoods were solely in majority Black areas. The balance of Asian-White concentrations, on the other hand, were primarily in prevalently White areas.

Regression modeling furthered the analysis in several key ways. It began to partially unravel and make clearer the multiple axes of difference upon which racialization rests, and to show where these two multiracial groups fit within a landscape rife with differentiation across educational, economic, and generational context. The sensitivity to these contexts of Asian-White counts were often between the sensitivities of their White and Asian counterparts, while this was never the case with Black-White counts and its counterparts, and Black-White sensitivities were more often more similar to their minority counterparts though Asian-Whites' were generally more similar to their majority counterparts.

Regression also allowed for closer examination of patterns more easily understood to be racial, by controlling for this other differentiation. This confirmed that Black-White individuals are more likely to be in primarily Black areas than White areas, even controlling for other factors. Black-Whites were least sensitive to Hispanic context while Asian-Whites were least likely of all groups to locate there. This is in line with Wright et al.'s (2011) findings that interracial Black-White households were less sensitive to Hispanic context than White or Black same-race households. In fact, the directions and relative sensitivities which they found for interracial Black-White, White, and Black households to Black and Hispanic versus White prevalence were comparable to this study's findings for Black-White, White, and Black *individuals*.

Analysis of interaction terms between racial predominance and entropy confirmed that entropy is positively associated with Black-White individual counts regardless of the racial context of that diversity, as Wright et al. (2011) found for Black-White households. However, while Black-White individuals' sensitivity to entropy was very similar to that found for Black-White households in White and Hispanic spaces, such households were much more sensitive than these individuals to entropy in Black-dominated spaces. This may be the combined result of the extreme sensitivity of White individuals (who make up half of these households) to White spaces (downwards) and diversity within those spaces (upwards). Black-White individuals are less sensitive to diversity in White or Black spaces than either of their monoracial counterparts are in their opposing counterpart's space, perhaps because they are more open to being in those spaces at all.

CHAPTER 5

CONCLUSION

Bennett (2011) finds support for understanding the contemporary racial structure of the United States in terms of a stratified ternary racial order. W.E.B. DuBois accurately identified the Black-White color line as a primary concern in the twentieth century, but increasing immigration from Asia and Latin America as well as increasing interracial partnering have raised doubts as to the continuing relevance of a binary conception of race. Scholars both of these new immigrants and of the increasing multiracial population have placed these groups in a middle ground between that of Whites and Blacks, who very much still seem to be at opposite ends of the social hierarchy. This has sometimes been referred to as the "browning" of America, and those neither Black nor White have sometimes been referred to as "honorary Whites," though it remains unclear to what extent these groups are poised to "become White" in the future (Bennett 2011). This middle position is somewhat reminiscent of past treatment of multiracial Black-Whites as occupying a middle ground as mulattos, though such distinctions were never stable as a system of hypodescent dominated in some places and times, and further subdivision by blood quantum came and went.

Bennett's (2011) study spanned a large number of metropolitan areas holding significant numbers of multiracial individuals and primarily utilized the Dissimilarity and Exposure indices to construct binary comparisons between three multiracial populations and White populations. Her findings that the three multiracial populations were more

segregated from Whites than their monoracial minority counterparts and were less

exposed to minority populations support a ternary or triracial conceptualization of racial

dynamics in the United States at the turn of the twenty-first century. Her further findings

that Black-White populations were less integrated with White populations and were more

exposed to minority populations than either of the other two multiracial groups (Asian-

Whites and Native American-Whites) further reveals the shape of the ternary racial

structure to be one which is stratified. The "browning" of the United States thus is not an

undifferentiated process, but one in which the legacy of the one drop rule yet affects

prospects for the "monochrome" society where race no longer matters and for which Clark

and Maas (2009) draw support in their examination of multiracial geographies.

Comparisons of the residential geographic patterning of these two multiracial

populations and their monoracial counterparts helps further understanding of the

persistence and shape of the American racial hierarchy in an era marked by increased

racial integration and mixing, yet still marked by a persistent legacy of segregation.

Finding where individuals who claim a multiracial identity find homes in this landscape

marked by difference reveals important clues to the uneven progress toward assimilation

theory's promises of the ultimate end of racialization and the formation of a "monochrome

society." The methods employed in this thesis have demonstrated that the experiences of

multiracial groups, at least these two specific groups, are different from that of either of

their monoracial counterparts, as demonstrated by their unique residential geographic

patterns in the Atlanta metropolitan area. As the home is a very important place

facilitating how people enact their identities, this unique geography reflects unique

identity, regardless of whether that geography is primarily the result of choice and

preference or structural forces forming constraints. Their unique geographies subsequently may reinforce unique identities. Clark and Maas (2009) maintain that the increased integration with Whites displayed by these multiracial groups means that they represent the harbingers of greater integration in the future. This thesis differs largely in two main aspects. Instead of solely emphasizing segregation or integration with Whites, I employ a framework developed by Holloway et al. (2012) which incorporates an understanding of segregation and diversity as overlapping concepts which draws multiple racial groups into the examination and avoids binary racial comparisons such as the Dissimilarity Index and the implicit favoring of Whiteness as the constant referent.

Results show that both multiracial groups of interest tend to avoid neighborhoods of low diversity, tending to disproportionately reside in moderately diverse neighborhoods. Cartographic representation suggested that they tend to cluster in moderately diverse areas at the edges between different racial groups' predominance. Regression modeling indicated that the racial character and diversity of neighborhoods is a significant factor in the location of multiracial individuals, even controlling for other determinants such as levels of college education and homeownership among neighborhood residents. This seems to support the findings of ethnographers that interracial family units and multiracial people tend to be more comfortable in more diverse spaces, where they may face less pressure to choose to conform racially with one group or another from which they are descended, and in which they may be free to claim their own multiple identity which crosses racial borders. These spaces may provide relief from what has been called "racial border patrolling" (Dalmage 2000).

Although primarily included as control variables, comparison of the coefficients for the non-racial neighborhood level variables reveals intriguing differentiation among the living conditions of racial groups that is less explicitly racial. The finding that none of Black-White sensitivities to neighborhood factors including level of college education, homeownership, proportion minor, proportion foreign-born, and population density were between the sensitivities of monoracial Blacks and Whites is a key indication that Black-White multiracial individuals are not navigating the landscape simply as "in-between" compromises between White and Black geographical behavior. Asian-Whites, on the other hand, display sensitivities for neighborhood level of college education, proportion foreign-born, and proportion minor between those of monoracial Asians and Whites, indicating that they may be behaving more "in-between" their separate constituent racial identities than Black-Whites do. While Asian-White sensitivities to non-racial factors are most often closer to that of Whites than Asians, Black-White sensitivities are most often more similar to Blacks than to Whites. This may indicate that Asian-Whites are afforded more of the privileges of their Whiteness than are Black-Whites.

The greater impact population density and lower levels of homeownership have on multiracial counts versus monoracial counts may reflect their proclivity to concentrate in more urban areas. Clark and Maas (2009) found in their study of California metropolitan areas that these multiracial groups were more dispersed into the suburbs than their minority counterparts, but their study included children, who at least in Atlanta make up 2/3 of the multiracial population. A cartographic examination of Asian-White and Black-White populations (of all ages, including children) in Atlanta (not shown) also showed more suburban dispersal, in patterns clearly different than the adult geographic

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distribution. Bennett's (2011) study also included all ages, but she cited Logan et al.'s

(2001) contention that children are more segregated than adults to support her claim that

their inclusion should make repudiating a binary model even more difficult. This

uncritical use of findings concerning monoracial children may indeed be problematic,

especially considering Clark and Maas's (2009) contention that multiracial individuals

tend to be more educated and have higher incomes monoracial minority individuals.

More study is needed to understand the different residential geographies of multiracial

adults and children. This also raises an important question of whether this large cohort of

upcoming multiracial adults will continue to reside in the suburbs, contributing to their

diversity, or move in to the more diverse urban areas as they depart the interracial

households of their parents. Of course, it remains unclear how their reported identities

may change upon reaching adulthood. The census does not track whether individuals are

first generation multiracial, but the assumption in much of the literature is that those

identifying as multiracial have parents from different racial groups, and the new census

classifications were not in place long enough ago to track where all of these adults lived as

children. Wright et al.'s (2011) study of interracial Black-White households examined the

urbanized areas of metropolitan areas and so their national study did not quite reach the

same limits as the current study area which includes Bowdon and Carrollton in Carroll

County. These areas show concentrations of Black-Whites (all ages, not shown). Dividing

multiracial populations into several age cohorts might begin to reveal how these groups

are likely to behave geographically as they increase in numbers and themselves begin

large numbers of families. As it has been found that the transition from adolescence to

adulthood is a common time for multiracial individuals to simplify their racial identity,

studying the different residential geographies of adults and children should prove

enlightening, as could understanding the link between changing identities and place. This

could prove difficult, though, using publicly available census data, as the act of simplifying

a multiracial identity to a monoracial one effectively obscures one from analysis. A

longitudinal survey might prove more efficacious in linking identity and geography.

Previous findings that women are more likely to claim a multiracial identity may warrant

future studies to further divide the multiracial population by sex in order to look for

patterns unique to this group. As the multiracial population increases, statistical

significance can be maintained with further subsets.

The finding that Black-Whites are about as equally likely (or at least not statistically

significantly differently likely) to be in Hispanic areas as White areas and respond similarly

to increased entropy in both spaces hints that to them White-dominated spaces may be

spaces of the other. Their high tendency to be located in Black-dominated spaces suggests

that they are insiders in these spaces. Even so, they tend to be in the more diverse of these

spaces, suggesting that even while being insiders they are not wholly or uniformly

responding to the same set of forces. The fact that Blacks are over twice as likely to be in

Hispanic areas than White areas and that Whites show a similar preference for Hispanic

areas over Black areas seems to confirm a picture of the racial hierarchy in which Blacks

are at the very far end from Whites. While the Index of Dissimilarity would likely similarly

point towards this pattern, the regression model's controlling for other contextual

neighborhood characteristics should render it added credence. Yet the far end of this

hierarchy can only be considered to be the bottom. Examination of the nominally non-

racial variables confirms the unsurprising finding that Blacks are in the most economically

and educationally disadvantaged neighborhoods, even controlling for the racial character of those neighborhoods. This implies that even when they are outside of Black neighborhoods, they tend to be in neighborhoods characterized by lower attainment of college degrees and levels of homeownership.

Assimilation theory gains some support here from the finding that both Asian-Whites and Black-Whites tend to have sensitivities to college attainment closer to that of Whites than to their monoracial minority counterparts, though in the case of Asian-Whites this actually means they are less positively sensitive to neighborhood education levels than Asians are (their monoracial minority counterpart). Black-White adults are actually slightly more positively sensitive to neighborhood education levels than Whites (again, even controlling for racial plurality), perhaps implicating education as a significant driver of assimilation. The finding that population density and lower levels of homeownership had a greater impact on multiracial counts than monoracial counts may implicate increased suburbia and homeownership as detriments to assimilation. Diversity itself may be a driver of further assimilation and integration, with diversity at the neighborhood scale correlated with diversity at the scale of the body. Asian-Whites are less inhibited toward lower diversity in White spaces than Black-Whites are. Black-Whites, on the other hand, are more inhibited toward White spaces than Black spaces and much more positively sensitive to diversity in White spaces than Asian-Whites are. It is clear that Asian-Whites are far more integrated with Whites than Black-Whites are.

These findings support the notions of assimilation theory, but just as the landscape is unevenly segregated, so too are the possibilities and opportunities for an increasingly racially, economically, and educationally homogenized society. Blacks are clearly at the

bottom of a racial hierarchy in America, and due to the distances across multiple axes from Whites and the ongoing influence of the one drop rule, even those who should represent the harbingers of this assimilation, Black-White individuals, continue to be excluded from majority spaces in ways Asian-Whites are not. This supports the notion of a stratified ternary racial structure in which those who are neither Black nor White, such as Asians and Hispanics, are in the middle of the racial social hierarchy along with those who claim multiraciality. This study was unable to draw multiracial Hispanics or monoracial Hispanics into the analysis, but their inclusion as a group might have helped to further map the contours of this hierarchy. Asian-Whites as a group appear to be poised to "pass" into or closer to Whiteness. This study could not differentiate between first generation immigrant Asians and later generations, so it is unclear to what extent their mixedness with Whites or their increased levels of nativity are the cause of this increased integration with Whites. Further study of this is warranted to determine whether Asians might as a racial group achieve what some have termed honorary Whiteness or whether they must achieve Whiteness through entering the "melting pot" with Whiteness.

Perhaps Asian is the next category to be included in an expanding concept of Whiteness, but Black, or partially Black, is clearly still Black to the balance of society, despite educational advantages. This group seems not at all poised to "achieve" Whiteness or the benefits attached to it through "melting" or any other method. The legacy of hypodescent seems to still have an effect on society, even if increasing numbers of multiracial Black-Whites are rejecting monoracial identities and claiming their mixedness publicly. Perhaps the broad array of skin tones amongst those who identify solely as Black challenges those attempting to assert a mixed identity to justify their

assertion. This study was understandably unable to use census data to break out and compare just the lightest skinned monoracial Blacks to those claiming multiraciality. It would certainly be enlightening to understand how much of Black-Whites' increased integration with Whites and their more positive sensitivity toward neighborhood levels of education was the result of explicit and recent claims to a degree of Whiteness versus simply having lighter skin. Blackness certainly encompasses a wide range of skin tone, though, and the fact that those identifying as Black-White are much more likely to marry Blacks than Whites (Qian and Lichter 2011) suggests that "melting" into Whiteness is not on the horizon, though the proportion of lighter skinned Blacks may increase.

As always, studies are only as good as the data they employ, and this study utilized estimates from the relatively new American Community Survey. Though only employing estimates from the longest 5-year survey, these estimates still have relatively large margins of error. Researchers are still sorting out how to incorporate these margins into studies, and this study omitted them from consideration. Racial data, which figured into the primary variables of interest, however, were based on 100 percent counts at a fixed point in time. As more 5-year estimates become available, researchers may be better able to determine trends through time as the multiracial population continues to grow. This may save us from having to wait until the next decennial census to tease out these patterns. Of course, as mentioned above, longitudinal surveys, though they carry considerable expense, might provide the best qualitative and quantitative insights into the emerging shape of the U.S. racial hierarchy in light of increasing claims to multiraciality and increasing numbers of those who are neither White nor Black through immigration and

those who are both White and Black through increasing integration at all scales, including the household and the body.

Increasing integration, whether the result of increasing assimilation or not, is not affecting all racial minorities evenly, and to repeat a quotation from Bennett included in Chapter 1, "racial inequalities that exist among single-race minorities are reflected in the residential experiences of multiracial groups" (Bennett 2011 p. 724). The distinct differences between these two multiracial groups reflect the enduring social distance between Whites and those marked by any visible Blackness. Just as segregation and integration are spatially uneven, so too are they racially uneven.

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