RACIAL RESIDENTIAL SEGREGATION, STEREOTYPES, AND NEIGHBORHOODS: THEIR INFLUENCE ON WHITES’ RACIAL ATTITUDES AND BLACKS’ SELF ESTEEM

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by

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ABSTRACT OF DISSERTATION

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ABSTRACT

I use the Social Structure and Personality (SSP) perspective to examine empirically relationships between social and cultural structures and individuals’ psychologies. The Social Structure and Personality (SSP) perspective seeks to understand the role of social and cultural structures in creating systems of social stratification that effect on individuals’ personalities and psychologies. It is hypothesized that these interactions happened through smaller social contexts or proximate principles where social interactions and other social processes occur. I focus on social and cultural structures sustaining and reinforcing individuals’ conceptualizations of race that normalize and sustain social and economic inequities among different groups in society.

There are three related studies in this dissertation. The first study employs a multi-level analysis design (Chapter 1) to empirically examine how two distinct ecological racial contexts influence whites’ racial attitudes. The next two chapters, focus on blacks’ self-esteem and develop a theoretical model to examine how county-level cultural structures (i.e. racial attitudes) in Chapter 2, and county-level social structure (i.e. residential segregation) in Chapter 3, influence black’s self-esteem through the mediating effect of smaller and more proximate socio demographic spaces (i.e. neighborhoods).

Consistent with Houses’ methodological principles, I used appropriate multi-level methods that capture the effects of social structures on individuals’ personalities, and allows for the examination of the mediating role of proximate neighborhood elements. Statistical analyses presented in each of the three chapters of this dissertation were completed using data from two sources at three levels: individual-level data from the Multi-City Study on Urban Inequality (MCSUI) and contextual data from the 1990 U.S. census including census tracts and counties. The individual level of the MCSUI data was linked to tract level administrative data (derived
from Census data) and to county-level residential segregation measures (using population numbers derived from Census data). Analyses in each chapter include individuals (level-1) nested within census tracts (level-2), and these in turn nested within counties (level-3).

Findings from this dissertation explicitly inform the sociological sub-field of inter-racial group relations and the social psychology of self-esteem. By applying Houses’ social structure and personality perspective, the chapters in this dissertation empirically illustrated the connections between social and cultural macro structures and personality, and examined various pathways through which the connections between micro and macro phenomena occur. A key finding of this dissertation is that racial contexts, including racial residential segregation and county-level measures of whites’ positive stereotypes toward blacks, are significant predictors of whites’ racial attitudes and blacks’ self-esteem, above and beyond individual-level predictors. A second major finding is that neighborhoods’ context play a significant mediating role in the associations between racial residential segregation and county-level measures of whites’ stereotypes, and blacks’ self-esteem. These findings underscore the need to conceptually clarify the links between social and cultural structures and individuals’ personalities and psychologies.
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INTRODUCTION

The Social Structure and Personality (SSP) perspective seeks to understand the role of social and cultural structures in creating systems of social stratification that affect individuals’ personalities and psychologies by identifying mediating smaller social contexts where social interactions and other social processes occur (Mansyur, Amick et al. 2009). The SSP perspective is useful for this dissertation because it provides theoretical and methodological direction to empirically examine relationships between social and cultural structures and individuals’ psychologies. In this dissertation I focus on social and cultural structures sustaining and reinforcing individuals’ conceptualizations of race that normalize and sustain social and economic inequities among different groups in society. First, I empirically examine how two distinct racial contexts influence whites’ racial attitudes employing a multi-level analysis design (Chapter 1). In the next two chapters, I focus on blacks’ self-esteem and develop a theoretical model to examine how county-level cultural structures (i.e. racial attitudes) in Chapter 2, and county-level social structure (i.e. residential segregation) in Chapter 3, influence black’s self-esteem through the mediating effect of smaller and more proximate socio demographic places (i.e. neighborhoods).

Definition of Race

The focus of this dissertation is on social and cultural structures that sustain and reinforce individuals’ conceptualizations of race that normalize and sustain social and economic inequities among different groups in society. Thus, a definition of race useful in understanding persisting social and economic racial inequities present in the United States is of importance.
Race, as a social construct, has become a powerful and useful tool to normalize and sustain social and economic inequities among different groups in society. Geronimus’ two interrelated definitions of race provide an insight on how this social construct contributes to the perpetuation of inequities among social groups: Geronimus defines race first, “as a set of social relationships between majority and minority populations that have been institutionalized over time, that privilege the majority population, and that are prior to the poverty that is associated with race.” And second, as “a set of autonomous institutions within the minority population that are developed and maintained—even in the face of burdensome obligations or costs to individuals—because, on balance, they mitigate, resist, or undo the adverse effects imposed by institutionalized discrimination” (Geronimus 2000:868). Geronimus’ definition of race is useful for this dissertation because it acknowledges the power of current and historic social and cultural structures in: (a) creating hierarchies that benefit and facilitate access to resources to selected groups in society, and (b) maintaining contemporary conditions of social and economic racial inequity. Some of these contemporary conditions include African slavery that facilitated wealth accumulation among whites, ethnocentric practices that created the notion of inferior races, social policies that excluded black families from the opportunity to acquire housing in the suburbs, and practices of discrimination that continue relegating blacks to lower quality in education, employment, social services, and housing (Du-Bois 1956; Williams and Collins 1995; Bobo 1999; Du-Bois 1999; Williams 1999; Bobo 2000; Williams and Williams-Morris 2000).

**Application of SSP Theoretical and Methodological Principles**

The Social Structure and Personality perspective seeks to understand the role of social and cultural structures in creating systems of social stratification that affect individuals by identifying
mediating smaller social contexts where social interactions and other social processes occur (Mansyur, Amick et al. 2009). The SSP perspective proposes the use of specific methodological and theoretical principles essential for a more comprehensive understanding of the dynamic processes through which social structures interact and affect individuals (House 1981). The theoretical principles are: (1) *The components principle* through which larger structural contexts affect personalities (i.e. the how and why); (2) *the proximity principle* which identifies smaller contexts where social interactions and other social processes occur and through which *the components principle* affects personalities; and (3) *the psychological principle* which involves knowledge of individuals’ personality and/or psychological processes eliciting individuals’ responses to social stimuli (House 1981) (See Figure 1). The methodological principles require the use of proper analytic methods for assessing mediating mechanisms through which social structures affect personality; and individual level moderating factors that may modify the way in which social structures affect personalities (House 1981). Following, a more detailed description of the theoretical and methodological principles of SSP used in this dissertation is described.
Theoretical Principles

The Component Principle (See Figure 1)

Racial Context is the proportion of the minority group at the county level.

Racial Residential segregation disproportionately and adversely affects minority groups by concentrating poverty, affecting the quality of neighborhood social and physical environments, and limiting individual socio-economic attainment and upward mobility (Collins and Williams 1999). Residential segregation organizes racial and ethnic groups into different neighborhoods generating a spatial distribution that correlates highly with a distribution of divested social and economic institutions (e.g. underfunded schools, equitable access to health care, lack of economic investments that create and support jobs) (Massey, Condran et al. 1987; Massey 2004). This distribution, in turn, places minority groups at a disadvantaged position compared to white groups (Williams and Collins 2001; Schulz, Williams et al. 2002; Acevedo-Garcia and Lochner 2003). Involuntary residential segregation that has resulted from, mostly, racial discriminatory
acts (i.e. redlining, housing covenants, racially targeted federal housing policies, and other forms of discrimination in housing and lending markets) imposes an additional psychological burden to individuals, which a growing body of evidence indicates can have adverse consequences for physical and mental health (Jackson, Brown et al. 1996; Williams and Collins 2001). Residential segregation not only excludes poor minorities from access to social and economic resources, but also reduces opportunities for inter-ethnic/racial interactions, the potential development of social ties, and more personal, intimate relationships (Amir 1969; Semyonov and Glikman 2009).

Distance among groups not only limits opportunities for economic and social collaboration and cultural enrichment, but it is also associated with a decrease in support for social policies aimed at reducing ethnic/racial inequities (Bobo and Kluegel 1993; Bobo and Zubrinsky 1996).

**Contextual racial stereotypes** can be defined as a set of social cognitions that are part of sociocultural systems. According to House, a sociocultural system is “a set of persons and social positions or roles that possess both a culture and a social structure” (House 1981:543). A culture is a set of cognitive and evaluative beliefs about how social orders should function, shared by members of social systems that are transmitted through generations. Individuals embedded in a social system create and organize social structures through their continuing patterns of social interactions and individual behaviors (House 1981). Individual beliefs such as racial stereotypes, in turn, to some extent guide and sustain patterns of social and behavioral interactions between majority and minority (Krysan, Couper et al. 2009). Racial stereotypes originate from powerful groups in society aimed at protecting their social and economic interests, are culturally shared, and serve to assign lower value to members of minority groups. Negative stereotypes, in particular, emerge as part of social ideologies to justify unequal treatment and restrict access to resources and opportunities to certain groups (Phelan, Link et al. 2008). Negative stereotypes
offer cognitive justifications for individual behaviors, and for institutional policies to give differential treatment to members of certain groups. This differential treatment place selected groups in society in disadvantaged positions limiting their access to social and economic resources (Crocker and Quinn 2000).

*The Proximate Principles* (See Figure 1)

**Neighborhoods’ Context**

The papers in this dissertation explore the effects of social structures on individuals through their capacity to shape neighborhoods—smaller social contexts or proximate elements where individuals reside. Social structures create unequal distribution of material resources concentrating wealth and power among certain groups. This concentration of power and resources generally clusters geographically, creating deprived and privileged neighborhoods (Collins and Williams 1999; Schulz, Williams et al. 2002). The type of neighborhood an individual resides in becomes a determinant of access to resources, such as quality education, good jobs, health care, and the power to influence political decisions (Williams and Collins 2001; Williams and Sternthal 2010). In general, whites and minority groups in the United States live in separate neighborhoods (Farley 1977; Farley and Frey 1994; Iceland, Weinberg et al. 2002). The majority of the neighborhoods where members of minority groups reside have a number of disadvantages such as lower quality in education, housing, health care, and other social and cultural services (Massey, Condran et al. 1987; Osypuk and Acevedo-Garcia 2008; Osypuk and Acevedo-Garcia 2010). These geographic inequalities combined with the fact that neighborhoods are influential contexts in human development, including psychological traits (Jason and Robert 2000), limit the opportunities for a high quality of life and self-enhancement.
for members of minority groups compared to whites in the United States (LaVeist 1989; Zubrinsky and L 1996; Collins and Williams 1999). In addition, this racial geographic separation produces and sustains antagonism among different racial groups and limits the opportunity for more harmonious inter-racial group relations (Bobo and Zubrinsky 1996; Charles 2000).

THE PSYCHOLOGICAL COMPONENTS (See Figure 1)

Whites’ racial stereotypes toward blacks are viewed as a process of social construction that involves clusters of cognitive images about out-groups that, similar to other cognitive processes, continually reinforce each other and are resistant to change (Kinder 1986; Fiske and Taylor 1991). Groups’ hierarchical social positioning is greatly influenced by their social construction. The social construction process is culturally driven and frequently used by elite groups to protect their own interests and privileged positions (Schneider and Ingram 1993). Dominant groups’ cultural values (e.g., history, literature, the media), elites’ interests, socialization processes, political beliefs, age, and education influence this process (Sniderman and Tetlock 1986; Sidanius, Pratto et al. 1996; Sears, Laar et al. 1997).

Self-esteem is an overall positive or negative attitude toward the self (Gecas 1982; Rosenberg, et al. 1995). Individual levels of self-esteem are connected with a number of social problems (Owens and Styker 2001). High self-esteem is proposed to moderate the effects of lifetime stressors (McDonald and Gynther 1965; Linville 1987; Thoits 1992; Thoits 1994). Conversely, individuals with low self-esteem are said to be more vulnerable to life stressors and, thus, more at risk of developing certain mental health conditions, such as depression and anxiety. Individuals with low self-esteem may also become more likely to engage in risky and deviant social behaviors in search of status and recognition (Owens and Styker 2001). Studies of blacks’
self-esteem, specifically, have shown significant associations between self-esteem and various behavioral and health measures. Negative associations have been reported between blacks’ self-esteem and the frequency of smoking (Botvin, Baker et al. 1993) and drinking (Rodney and Rodney 1996), as well as symptoms of depression (Caldwell, Antonucci et al. 1997) and anger management (Johnson and Greene 1991).

**Methodological Principles**

I followed Houses’ methodological principles by using appropriate multi-level methods to adequately capture the effects of social structures on individuals’ personalities, and properly examined the mediating role of proximate neighborhood elements (House 1981). Statistical analyses, for each of the three chapters of this dissertation, were completed using data from two sources at three levels: individual-level data from the Multi-City Study on Urban Inequality (MCSUI) (Bobo 2001) and contextual data from the 1990 U.S. census including census tracts and counties. The individual level of the MCSUI data was linked to tract level administrative data (derived from Census data) and to county-level residential segregation measures (using population numbers derived from Census data). Analyses in each chapter include individuals (level-1) nested within census tracts (level-2), and these in turn nested within counties (level-3). Model fit was conducted using multi-level modeling techniques. A multilevel model takes account of between-group and within-group variance, estimating error terms at both the lower and the higher levels; therefore, data at all three levels are treated more efficiently and standard errors are more accurately estimated. The MCSUI data collection was designed to examine the ways in which shifting labor markets, racial attitudes, stereotypes, and racial residential segregation patterns act separately and in combination to maintain urban inequality. It is
therefore a rich dataset particularly helpful for examining the dynamics of inequality, segregation and racial attitudes (Bobo 2001).

In sum, the approach taken in this dissertation seeks to understand the social determinants of racial social and economic inequities by elucidating pathways through which larger social and cultural structures, and individuals’ social positions in these structures, affect personalities by altering socioeconomic conditions and social interactions in more proximate social contexts. Chapters 1 and 3 separately test the effects of residential segregation – component principle – on whites’ racial stereotypes (psychological principle - Chapter 1) and on blacks’ self-esteem (psychological principle- Chapter 3). In Chapter 2, I aggregate whites’ racial stereotypes at the county-level – component principle – to test its effects on blacks’ self-esteem – psychological principle. A selection of neighborhoods’ social and economic contextual characteristics taken from the census are used to develop a set of neighborhoods’ indices which are used as proximate principles, and potential mediators of the effects of social and cultural structures on blacks’ self-esteem, in Chapters 2 and 3. The three empirical studies in this dissertation were designed using an inter-disciplinary approach that integrate knowledge and methods from sociology (i.e. residential segregation, neighborhood effects, inter-groups relations), social psychology (i.e. racial stereotypes and self-esteem), and recent socio-epidemiological work examining the effects of place on individuals’ health and well-being.
REFERENCES


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CHAPTER 1: WHITES' RACIAL ATTITUDES: THE EFFECTS OF RACIAL
RESIDENTIAL SEGREGATION AND RACIAL CONTEXT AT TWO DIFFERENT
GEOGRAPHIC LEVELS
INTRODUCTION

Historically embedded in the housing policies of federal, state and local governments, racial residential segregation imposed by legislation, reinforced by social and economic institutions, and legitimized by the racist attitudes and ideologies of white dominance remains a prominent feature in the cultural fabric of US society, most notably since the 1960s (Massey and Denton 1989; Massey and Denton 1993; Alba, Logan et al. 1994; Massey, Gross et al. 1994; Logan and Stults 1999; Alba, Logan et al. 2000; Logan, Stults et al. 2004). Racial residential segregation is the physical separation of two or more racial groups into different places of residence (Massey and Denton 1988). Scholars of urban and racial residential segregation agree that racial residential segregation is a macro-level source of racial inequity by limiting the access of minority groups to equal opportunities (Massey and Denton 1988; Farley and Frey 1994; Massey, Gross et al. 1994). Whites and minority groups in the United States (U.S.) live, for the most part, in separate neighborhoods, and a great proportion of minority groups reside in neighborhoods with lower quality of life, resulting in lack of access to quality education, housing, health care, and other social and cultural services for minority groups (Schneider and Logan 1982; Iceland 2000; Logan and Stults 2011). Furthermore, despite the passage of the Fair Housing Act in 1968, high levels of racial segregation are still a defining feature of large urban settings in the U.S., and a key factor in the production and maintenance of urban inequality and concentrated poverty for non-white groups, particularly blacks (Iceland 2000; Logan and Stults 2011).

Racial residential segregation not only secludes poor racial minorities from access to social and economic resources, but also reduces opportunities for inter-racial interactions and the potential development of social ties and more personal relationships. For whites, limited
opportunities for contact with minority groups may amplify perceptions of differences across groups and, in turn, increase and reinforce negative attitudes and threat perceptions toward segregated populations (Parker, Stults et al. 2005). Lack of inter-group contact decreases opportunities for inter-group relationships and the reciprocal knowledge exchange that it may foster. Distance among groups not only limits opportunities for economic and social collaboration and cultural enrichment; it is also associated with decreased support for social policies aimed at reducing ethnic/racial inequities (Bobo and Kluegel 1993; Bobo and Zubrinsky 1996). Despite the prominence of high levels of racial residential segregation in the United States, it has rarely being examined as a factor shaping inter-ethnic/racial relations.

In this chapter, I examine how patterns of racial residential segregation may influence whites’ attitudes toward blacks. I provide a brief review of most recent findings on inter-group relations framed under the threat and contact theories, the most common theories used in this field of inquiry. Next, I identify the main gaps to be addressed by this study, and delineate the hypotheses to be tested.

THEORETICAL FRAMEWORK

The study of whites’ racial attitudes is commonly framed using premises from the social constructionist perspective (Schneider and Ingram 1993; Link and Oldendick 1996). Whites’ attitudes toward other racialized groups are viewed as a process of social construction that involves clusters of cognitive images about out-groups that, similar to other cognitive processes, continually reinforce each other and are resistant to change (Kinder 1986; Fiske and Taylor 1991). The hierarchical social positioning of racial groups is greatly influenced by their social construction. The social construction process is culturally driven and frequently used by elite groups to protect their own interests and privileged positions (Schneider and Ingram 1993). The
process is, thus, influenced by the cultural values of dominant groups (e.g., history, literature, and the media), the interests of elites, socialization processes, political beliefs, age, and education (Sniderman and Tetlock 1986; Sidanius, Pratto et al. 1996; Sears, Laar et al. 1997). Likewise, local contexts, such as place of residence, also influence how a group’s social construction of other groups (House and Mortimer 1990). How individuals form their opinions and give meaning to their social worlds and social objects reflects the social contexts that surround them (House and Mortimer 1990; Ridgeway and Balkwell 1997). Local contexts are, in particular, “potent arenas in which status beliefs can be created, spread, interrupted or refreshed” (Ridgeway and Cornell 2006:432). In line with the social constructionist perspective, the geographic areas where people reside become relevant factors in the study of whites’ attitudes about race.

Understanding the social construction of out-groups and the formation of stereotypes and other negative attitudes has important implications for the successful passing and implementation of social policies that support a more equal distribution of resources and the reduction of existing racial inequities (Schneider and Ingram 1993). Two major theories have guided work on whites’ racial attitudes, and more generally on inter-group relations: group threat theory and contact theory. For both theories, racial context is an important determinant of whites’ attitudes about race; however, they depart from each other in the way each theory interprets the nature of the association between racial context and attitudes. In threat theory, a large proportion of out-group members in areas where whites reside is likely to create inter-group conflict, elicited and sustained principally by threat perceptions from the majority group toward members of the minority group (Blumer 1966; Blalock 1967). Prejudicial views, therefore, tend to increase with structural sources of competitive threat that result when larger out-groups concentrate in areas of declining or limited economic assets (Quillian 1996; Scheeper, Gijsberts et al. 2002; Semyonov
and Glikman 2009). In contrast, for contact theory (Allport 1954), expansions in the relative size of minority population is likely to increase the odds that two random individuals from different ethnic/racial groups will establish social contact. Inter-group contact is hypothesized to reduce prejudice and ethnic conflict by the nature of the inter-group connections and the establishment of close social ties (Quillian 1996).

**Threat Theory**

Blumer’s and Blalock’s work on inter-group relations serves as the theoretical foundation for group threat theory. According to these authors, as the relative size of minority groups increases, members of the majority group perceive a threat to their social standing. To reduce this perceived threat and to preserve their advantageous position in society, powerful and influential members of the majority group engage in actions that seek to restrict access to economic, political, and cultural development opportunities to minority-group members (Blumer 1966; Blalock 1967; Lieberson 1980; Ryan, Hunt et al. 2007). Blalock distinguishes two forms of perceived threat: competition over economic resources and power threats (Blalock 1967). In the former, out-groups’ larger presence represents a threat when economic resources are scarce (e.g., access to jobs, housing, education, health care); in the latter, they represent a threat to the power provided by political institutions (Brown and Warner, 1992; Jacobs and Carmichael, 2002; Myers, 1990). In addition to economic and political status, social groups develop specific customs and cultural norms that provide a sense of in-group identification. This in-group identification may feel threatened when out-groups’ cultural norms are noticeably different and resist assimilation to the majority group’s customs and norms (Tajfel 1982). A culturally dissimilar group is perceived by the dominant group as a threat to their social and cultural values,
thus, to their own group identity (Parker, Stults et al. 2005; Taylor and Mateyka 2011). This kind of threat is known as a cultural or psychological threat. Opposition to the inclusion of non-English languages in education and other public arenas is an example of cultural/psychological threat (Taylor and Mateyka 2011).

Early in this line of theorizing, racial contexts became the principal interest for threat theory researchers. The “percentage black” of the (local) population where whites reside has been the most frequent predictor used when testing the threat theory hypothesis to examine whites’ racial attitudes (Quillian 1996; Taylor 1998). An increase in negative racial attitudes among whites residing in areas with a greater “percentage black” is the most common finding; it is so strong that historical North/South differences in racial attitudes become non-significant after controlling for percent black (Taylor 1998). However, a number of studies have shown conflicting results between the racial composition of local populations and whites’ attitudes (Riek, Mania et al. 2006).

Contact Theory

Under the contact hypothesis, antagonistic relations between two different groups may improve through increased inter-group social contact. Social contact provides members of different groups the opportunity to get to know each other and establish relationships that will contest false beliefs held about each other. Social contact may also serve as a catalyst to elicit and promote tolerance for diversity and improve all kinds of inter-racial relations (Pettigrew 1998; Pettigrew and Tropp 2006). A growing body of research supports the contact hypothesis, showing that higher levels of racial and ethnic integration correspond with lower levels of antagonism and intergroup conflict (Sigelman and Welch 1993; Ellison and Powers 1994;
A common concern among contact theory followers, however, is the strict conditions—delineated by Allport—necessary for inter-group social contact to lead to positive and long-term behavioral changes. According to Allport’s original hypothesis, spontaneous and/or sporadic contact opportunities between groups are not enough for the reduction of negative attitudes and subsequent cognitive and behavioral changes. Contact is most effective when happening between individuals of equal status, sharing common goals, under conditions that require mutual co-operation; and when it is supported and promoted by society’s overall values and customs (Bowyer 2009). To the relief of many researchers, studies have shown that not all of these conditions are requisite for intergroup-contact encounters to achieve positive outcomes. Casual interactions have proven to reduce feelings of anxiety provoked by a sense of threat and uncertainty toward members of the out-group that are the base of negative attitudes. A general sense of likeability that may result from a casual interaction has the potential to reduce negative attitudes by reducing anxiety in each party. Findings from a recent meta-analysis confirm this assumption, the authors concluded that inter-group contact can significantly reduce inter-group prejudice even if the conditions defined by Allport are not fully met (Pettigrew and Tropp 2006). As with threat theory, research exploring the tenets of contact theory arrives at conflicting results.

**Threat and Contact Theories: Conflicting Results**

Studies testing both the threat and contact hypotheses have used a wide variety of geographic units, such as countries (Quillian 1995), states (Arp, Simmons et al. 1999; Jacobs and Carmichael 2001), cities, metropolitan areas and counties (Fossett and Kiecolt 1989; Taylor 1998; Stein, Post et al. 2000; Dixon 2006); (Blalock 1967; Reed 1972; Wright 1976; Corzine,
Creech et al. 1983; Giles and Evans 1986; Glaser 1994; Morris 2000; Eitle, D’Alessio et al. 2002; Dixon 2006); zip codes (Oliver and Mendelberg 2000; Emerson, Chai et al. 2001; Gilliam, Valentino et al. 2002), census tracts, block groups, and municipalities (Wilson 1979; Oliver and Wong 2003; Baybeck 2006) to test the effects of racial contexts on people’s attitudes. Despite numerous studies on the associations between racial context and racial attitudes, debate still exists on the proper conceptualization of the contextual unit. Given the lack of consensus and great variability in the geographic predictor, the variety and even conflicting findings from research in both theories is not unexpected. As geographers and other social scientists have pointed out, when testing geographical aggregations, the spatial units of analysis chosen will most likely affect the results (Roux 2001; Soobader, Cubbin et al. 2006). This phenomenon is what geographers called the modifiable aera unit problem (MAUP) (Cho and Baer 2011).

To address conflicting findings from both threat and contact theories, and in an effort to reconcile the contradicting premises from both theories, recent studies suggest that the two theories operate at different geographic levels, and essentially complement, rather than contradict, each other (Bowyer 2009). Greater opportunity for contact between groups, for instance, is more likely to happen within small geographical areas (e.g., neighborhoods). Neighborhood and community contexts provide opportunities for individuals with similar backgrounds and interests to interact more frequently and form close relationships (Bowyer 2009). Similarly, the effects of social contexts, such as social networks, residential patterns, and class composition on racial attitudes are best captured at the neighborhood level (McDermott 2011). Alternatively, in larger geographic units (e.g., counties, metropolitan areas, cities), the opportunity for contact between members of distinct racial groups diminishes, as stronger in-group alliances are necessary to preserve in-group’s identities and power, and to warrant
privileged access to economic and political macro-level factors, such as housing and labor markets and political power (Bowyer 2009). It is undeniable that context matters for whites’ racial attitudes and some recommend assessing multiple context simultaneously to capture the effects of context more effectively (Baybeck 2006). Therefore, rather than examining just one geographic context at a time or, testing contact and threat theories in isolation, research would be enhanced by concurrently testing both theories, each at an appropriate level (Baybeck 2006; Sharp and Joslyn 2008).

**Socioeconomic Context**

Some authors contend that, more than just by racial composition, whites’ racial attitudes are shaped by the contextual socioeconomic conditions where they reside (Oliver and Mendelberg 2000; Gay 2004). Similar to individual-level socioeconomic status, economic contexts are believed to influence racial attitudes as a structural source of competitive threat (Oliver and Wong 2003; Semyonov and Glikman 2009). Low socioeconomic contextual conditions are assumed to promulgate economic competition and feelings of distrust among diverse racial groups. When testing socioeconomic effects on racial attitudes, education has been the preferred measure of SES context (e.g., proportion with college education).

Studies examining the effects of education are mixed. On one side, some studies show a positive association, where higher levels of education are associated with more positive racial attitudes (Hyman and Sheatsley 1964; Wodtke 2012); others do not find this positive association (Jackman 1978; Jackman and Muha 1984; Wodtke 2012). Two perspectives address the effects of education on racial attitudes: enlightenment and ideological refinement. The former states that education provides knowledge and awareness of the world that counteract narrow-minded
and poorly informed ideas associated with prejudicial behaviors (Hyman and Sheatsley 1956; Kluegel James and Smith Eliot 1983; Wodtke 2012). Knowledge, associated with higher levels of education, provides historical accounts on the socioeconomic factors that create inequalities, reduces anxiety provoked by perceptions of threat based on faulty out-group assumptions, and promotes egalitarian social norms (Schaefer 1996; McClelland and Linnander 2006). However, when examining support for affirmative action policies, studies show inconsistent findings. This inconsistency is, according to the ideological refinement perspective, influenced by a greater value being given to individuals’ own group interests. Despite subjective tendencies toward egalitarian values, the preservation of the privileged position of one’s own group induces individuals with higher education levels to perceive out-group members as a social, cultural, and an economic threat (Wodtke 2012). According to the ideological refinement perspective, after the Civil Rights Movement, when overt segregation and discriminatory practices became ineffective tools to preserve power and privilege, education and its accompanying intellectual refinement was used to appropriately articulate and legitimize the restricted access to resources experienced by minority groups. Values of “individualism and meritocracy” rhetorically aggrandized by education, have created effective ‘Race-neutral’ discourses that continue to sustain systems of racial inequity and institutional discrimination (Wodtke 2012) p.83.

However, education captures only one dimension of contextual socioeconomic status (SES) effects. It is not yet clear how other factors, such as family income, occupation, and percent of house ownership may influence ethnic/racial attitudes.

Individual-Level Factors
Individual-level factors, the main focus in personality and psychosocial research on racial attitudes, are also associated with whites’ attitudes. Prejudice and discriminatory attitudes are more prevalent among authoritarian individuals, persons with low self-esteem, those who tend to blame their failures on external factors, and persons of low socioeconomic status, of older age, and those who hold conservative ideologies such as religious and right-wing political orientation (Case, Greeley et al. 1989; Scheepers, Gijberts et al. 2002; Kunovich 2004; Semyonov, Rajman et al. 2004; Quillian 2006). It is hypothesized that persons from lower socioeconomic status feel more threatened when competing for scarce economic resources; while the more conservative tend to fear and resist changes that out-group members’ values and culture may introduce. Education is also a significant predictor of racial attitudes, with the more highly educated showing higher levels of racial tolerance. On the other hand, weak associations between racial attitudes and income and gender have been reported (Sidanius and Pratto 1999). Interestingly, religiosity has received less attention; religious attendance may have a role in shaping the social value of solidarity with others.

RESEARCH GAPS AND CONTRIBUTIONS

This study attempts theoretically and empirically to address identified gaps in the racial attitudes literature and to advance the current literature in important ways. First, despite high levels of racial residential segregation in the United States (Iceland, Mateos et al. 2011), few studies have examined the role of racial residential segregation in shaping and maintaining whites’ racial attitudes. The literature on racial residential segregation shows how the racial attitudes and ideologies of whites were one of the key factors in creating racial residential segregation patterns, it is less clear, however, how patterns of racial residential segregation may continue to perpetuate or potentially diminish inter-racial and inter-group conflict by influencing
whites’ racial attitudes. In line with the social constructionist framework, I argue that the
environment and/or context where people reside shapes and influences their opinions and the
meanings they give to their social world and social objects, including members of other groups
and the nature of their relations (House and Mortimer 1990). I agree with Ridgeway and Correll
(2006) that “local contexts are potent arenas in which status beliefs can be created, spread,
interrupted or refreshed” (Ridgeway and Cornell 2006:432); therefore, I argue that racial
residential segregation, an intrinsic part of racial relations in the United States, should be
accounted for when examining whites’ racial attitudes.

This paper advances the examination of racial contexts by using a measure of racial
residential segregation, in addition to racial minority group size— the latter being the most
common used in previous research. I use two indices of racial residential segregation (i.e. the
Theil Index and the Exposure Index) that capture two different dimensions of racial residential
segregation (i.e. evenness and exposure) to test the effect of racial context on whites’ racial
attitudes at the county-level—a relatively large geographic area. Racial residential segregation
provides a more accurate and realistic environmental contextual variable. Racial residential
segregation takes account of the size and distribution of various racialized groups in a larger
geographic area—the county—and then compares this distribution to the pan-ethnic distribution
within the smaller areas—tracts—that comprise the larger one. This level of detail provides a
better contextual description of the racial context of a determined geographic area than just the
size of a racial group.

Second, I will test the effects of racial context at a smaller geographic area—neighborhoods
defined as the tracks—on whites’ racial attitudes before and after adjusting for SES context at the
track-level. Research examining contextual SES effects on whites’ attitudes has relied, for the
most part, on aggregate levels of education as a contextual measure that ignores other aspects of contextual SES (i.e. family income, employment, home ownership). Acknowledging that SES is a more complex factor than education alone, this paper addresses this gap by developing four indices of socioeconomic context, based on previous neighborhood research and using Census variables (Messer, Kaufman et al. 2006), to more fully capture the effect of SES on whites’ racial attitudes. We expand current literature on racial attitudes by using our indices of neighborhood socioeconomic status to test whether racial context influences racial attitudes over and above contextual socioeconomic factors.

Finally, to address the contradicting findings from both contact and threat theories, following recent suggestions (Bowyer 2009), I will test the effects of racial contexts at two different geographic levels (i.e. tracts and counties) simultaneously employing appropriate multi-level methods to test whether the two theories operate concurrently but at different geographic levels.

In sum, this study builds on previous research and advances current knowledge on racial attitudes and inter-group relations by (1) examining the influence of racial residential segregation on racial attitudes; (2) examining the influence of neighborhood’s racial contexts on racial attitudes after controlling for neighborhood’s socioeconomic context; and (3) applying the threat and contact theories to whites’ attitudes toward blacks looking at both larger (i.e. county) and smaller areas (i.e. census tracts). Two factors set this study apart from previous ones testing threat and contact theories: (1) attention to how racial groups are geographically distributed by modeling effects of racial residential segregation (compared to examining simple percentages of the minority group); and (2) the use of neighborhood socioeconomic indices borrowed from the increasingly rich literature on neighborhoods and human behavior. These factors, along with the
concurrent examination of contextual variables within a larger and smaller geographic area, provide a better understanding of contextual effects on whites’ racial attitudes.

HYPOTHESES

The following hypotheses are specifically tested in this study:

Whites’ racial attitudes

I. Whites’ Racial Attitudes and Racial Context at the County-Level

Under the theoretical framework of the threat and contact theories, the first aim of this study is to examine the associations between racial contexts and whites’ racial attitudes at the county-level. I expand work in this field by measuring racial context using minority groups’ size and two indices of racial residential segregation (Theil and Exposure).

Racial residential segregation: Under the premise that larger minority populations elicit whites’ threat perceptions and responses to minimize that threat, including racial residential segregation, and limited by the cross-sectional nature of the data that does not allow to examine causality and the timing of events between racial residential segregation and racial attitudes, I hypothesized that the threat theory would be supported if higher Theil indices were significantly and negatively associated with whites’ higher levels of negative stereotypes, opposition to affirmative action policies and perceived threat. Similarly, under the premise that greater visibility of racial minority groups would elicit whites’ perceptions of threat, the threat theory would be supported if higher Exposure indices were significantly and positively associated with whites’ higher levels of negative stereotypes, opposition to affirmative action policies and perceived threat. It is worth noting that under these two hypotheses, I assumed that levels of whites’ residential segregation at time of data collection were, to a great extent, the result of past social and structural factors set in motion to minimize blacks’ opportunity to access social and
economic resources, and to minimize to some extent the threat blacks might have represented to whites. Higher levels of racial residential segregation at time of data collection, therefore, might provide whites with some sense of security for social and economic resources available at the county-level. The cross-sectional nature of this study’s data does not allow to empirically test this assumption.

In contrast, under the contact theory’s principle that greater exposure between minority and majority racial groups –facilitated by lower levels of racial residential segregation– has the possibility to increase inter-group interactions and potentially reduce false negative racial beliefs among members of both groups (i.e. whites and blacks), the contact theory would be supported if higher Theil indices (lower inter-group exposure) were significantly and positively associated with whites’ higher levels of negative stereotypes, opposition to affirmative action policies and perceived threat. Similarly, higher Exposure indices (higher inter-group exposure) significantly and negatively associated with whites’ higher levels of negative stereotypes, opposition to affirmative action policies and perceived threat will support expectations of the contact theory.

Minority groups’ size: The threat theory would be supported if larger proportion of minorities, at the county level, were significantly and positively associated with whites’ higher levels of negative stereotypes, opposition to affirmative action policies and perceived threat. In contrast, the contact theory would be supported if larger proportion of minorities, at the county level, were significantly and negatively associated with whites’ higher levels of negative stereotypes, opposition to affirmative action policies and perceived threat.

II. Whites’ Racial Attitudes and Racial Contexts at the Neighborhood-Level
The second aim of this dissertation is to examine the associations between neighborhoods’ racial contexts and whites’ attitudes toward blacks after controlling for neighborhood’s socioeconomic context. Recent work asserts that socioeconomic contexts, rather than racial contexts at the neighborhood level are a more accurate predictor of whites’ racial attitudes (Gay 2004; Oliver and Mendelberg 2000). I therefore control for socioeconomic context at the neighborhood level to test for the significance of the associations between neighborhood’s racial context and whites’ attitudes after adjusting for socioeconomic context. To capture contextual socioeconomic factors, I use a more comprehensive measure (details provided in the measurement section) than the educational context (i.e. average education level of the area) commonly utilized in previous studies (Gay 2004; Oliver and Mendelberg 2000). The threat theory would be supported if (a) neighborhoods with larger proportion of minorities were positively associated with whites’ anti-minority stereotyping, opposition to affirmative action, and higher perceived racial threat. In contrast, the contact theory would be supported if (b) neighborhoods with larger proportions of minorities were inversely associated with whites’ anti-black stereotyping, opposition to affirmative action, and higher perceived estimations of racial threat. Hypothesized associations (a) and (b) would remain statistically significant even after controlling for neighborhoods’ socioeconomic context.

III. The Contact and Threat Theories: Complementary?

The last models in this dissertation tested whether the contact and threat theories complement one another, i.e., each theory predict whites’ expressions of racism at a different geographic level. The premises of the threat theory would hold up at the larger geographic level (counties), while the premises of the contact theory would apply to the smaller geographic level (neighborhoods). Threat theory would be supported if larger proportion of blacks at the county-
level were positively and significantly associated with whites’ anti-black stereotyping, opposition to affirmative action, and greater estimations of being threatened by blacks. Contact theory would be supported if a larger proportion of blacks at the neighborhood-level were inversely and significantly associated with whites’ anti-black stereotyping, opposition to affirmative action, and higher perceived levels of racial threat.

THEORETICAL MODEL

This paper seeks to add to the field of race relations by using a design that combines concepts of threat theory and contact theory, in conjunction with the racial residential segregation and the neighborhood literatures, to create a comprehensive theoretical model. Based on empirical evidence on race relations from these literatures, the theoretical model tested the effects of three distinct measures of racial contexts on whites’ racial attitudes. Specifically the model tested the following associations: (1) the direct effects (path a) of racial residential segregation on whites’ negative attitudes toward blacks, (2) the direct effects (path b) a county’s percentage of blacks in its population has on whites’ levels of racism, and (3) the direct effects (path c) a neighborhood’s percentage of blacks has on the attitudes of whites about race, after controlling for neighborhoods’ socioeconomic indices, i.e., affluence, and stability (see Figure 1 below).
Figure 1. Model to Examine the Effects of Residential Segregation and Racial Context at two different Geographic Levels
METHODOLOGY

Sample and Measures

For the analysis, data were used from two sources at three levels: (1) individual-level data from the Multi-City Study on Urban Inequality (MCSUI) and contextual data from the 1990 U.S. census including (2) census tracts, and (3) counties. Since the MCSUI data include geographic identifiers at the tract level, individual-level data from the MCSUI were linked to tract level administrative data (derived from Census data) and to county-level racial residential segregation measures (using population numbers derived from Census data). Thus, the data for this study, include individuals (level-1) nested within census tracts (level-2), and these in turn nested within counties (level-3).

The MCSUI is a cross-sectional, stratified area probability household survey that included interviews with 8915 adults 21 years and older from 1992 to 1994, in four metropolitan areas—Atlanta, Boston, Detroit, and Los Angeles. Given the focus on urban inequality, MCSUI data were oversampled in census tracts with high proportions of poor and minority residents. The MCSUI was designed to examine the ways in which shifting labor markets, racial attitudes, stereotypes, and racial residential segregation patterns act separately and in combination to maintain urban inequality. It is a very unique, rich dataset for examining the dynamics of inequality, segregation and racial attitudes (Bobo 2001).

The sample for this analysis was restricted to MCSUI respondents who identified themselves as whites, and to those metro areas where the data collection included outcomes of interest. Given the variability of the data collection of the outcome measures by metro area, the sample size varies by outcome model as follows: N=1397 for negative stereotypes models (includes 728 participants from Detroit, 218 from Atlanta, 254 from Los Angeles, and 197 from...
Boston), N=2789 for opposition to affirmative action models (includes 728 participants from Detroit, 641 from Atlanta, 835 from Los Angeles, and 585 from Boston), and N=1108 for group perceptions of threat models (includes 641 from Atlanta, 279 from Los Angeles, and 188 from Boston). The proportion of respondents with missing data was low (<2%). HLM 6.08 provides two options for handling missing data when running 2- and 3-level hierarchical linear models: listwise deletion at either the MDM creation stage or when the analysis is run (Raudenbush, Bryk et al. 2004). Deletion at the analysis stage was chosen for these analyses and the deletion was performed based on the variables included in the actual models run.

OUTCOME VARIABLES

Whites’ Racial Attitudes

The outcomes represent three attitude domains: negative stereotypes, perceived threats, and attitudes toward policies focused on racial issues.

“Attitude” refers to positive or negative evaluations of an object, which may be concrete --- such as a person --- or abstract --- such as ideas, opinions, or policies. In this chapter I focused on three attitudes whites often articulate toward blacks. In the three attitudes, described in detail below, whites evaluate a series of statements that include: (1) four specific traits about blacks (stereotypes); (2) their view on special job training and education assistance, and special preferences in hiring and promotion for blacks (affirmative action policies); and (3) whether more jobs and political influence for blacks and immigrants (out-groups) translates into fewer jobs and less political influence for their own group (group threat).

Attitudes are the product of feelings, beliefs and behavioral experiences, all of which are key factors for the understanding of intergroup relations and prejudice (Dovidio, Glick et al.
In private situations, attitudes represent individuals’ personal opinions (agree/disagree; favor/disfavor) on certain topics and/or persons; in more public situations, such as in surveys, attitudes are more representative of an individual’s perceived social norms (Schuman, Steeh et al. 1997). Norms, in turn, can modify individuals’ attitudes, either via internalization processes that make those norms integral parts of their personalities, or by exerting influence on external behavior in social situations (Dovidio, Glick et al. 2010). Numerous studies have shown significant correlations between attitudes and behaviors (Schuman, Steeh et al. 1997; Dovidio 2002; Friese, Hofmann et al. 2008). Given the associations between attitudes and behaviors, a better understanding of the factors that influence attitudes, particularly racial attitudes, may enhance our understanding of behaviors that promote or prevent harmonious race relations. The study of attitudes and the social norms they reflect contributes to the “understanding of the meaning of race in the United States” (Schuman, Steeh et al. 1997:8). This is particularly the case for the meaning of race from the 1940s and on, when segregation, discrimination and other forms of overt prejudice toward minorities started to become less acceptable in the United States (Schuman, Steeh et al. 1997).

Below, I described how each of the four measures of attitudes is constructed.

*Whites’ stereotypes toward blacks* was assessed with four items from the Ethnic Images scale developed for the General Social Survey (GSS) to measure beliefs about race and ethnicity in the United States (Smith 1990). Similar items and indices have been used by Bobo and Kluegel (Bobo and Kluegel 1993), Farley et al (Farley, Steeh et al. 1994) and Bobo and Zubrinsky (Bobo and Zubrinsky 1996). I used the same items used by Farley et al (1994) and assumed to be important when families consider new neighborhoods or when employers select new employees to be hired: intelligence, work ethic, compatibility and whether minority groups
speak English well. Using a 7-point Likert scale, participants were asked to rate [specific racial group] on four traits: intelligence, prefer to be self-supporting, easy to get along with, and speak English well. The original items were coded from 1 to 7, where 1 represented absence of the trait (unintelligent, prefer to live on welfare, not easy to get along with, and does not speak English well), and 7 represents the strongest presence of the trait. The items were then recoded to -3; -2; -1; 0; 1; 2; 3, with negative scores representing absence and very low presence of the trait, zero being neutral, and positive values representing presence and high levels of the trait (Farley et al 1994). The scale’s total score ranged from -3 to 3, with positive and higher scores representing negative stereotypes; the Cronbach’s alpha for the scale was 0.90, suggesting high reliability (Floyd and Widaman 1995) (Refer to Table 1 for details).

Whites’ support for affirmative action policies for blacks: support for affirmative action policies was measured with two questions used by the General Social Survey (GSS). Respondents were asked to rate on a five point Likert-type scales, with responses ranging from ‘strongly favor’ (1) to ‘strongly oppose’ (5), the following statements: (i) ‘Due to past disadvantages certain groups should receive special job training and educational assistance’ and (ii) ‘due to past disadvantages certain groups should be given preference in hiring and promotion’. The scale ranged from 2-10, with higher scores representing stronger opposition to affirmative action policies that benefit blacks. The Cronbach’s alpha score for the scale was within an acceptable range (0.67) (Floyd and Widaman 1995) (Refer to Table 1 for details).

Whites’ perceptions of group threat from blacks. To measure perceived group threat from blacks, I used two items used by the General Social Survey (GSS) and other previous research (Scheepers, Gijsberts et al. 2002; Raijman, Semyonov et al. 2003). Respondents were asked to rate on a five point Likert-type scales ranging from “strongly disagree” (1) to “strongly agree”
(5) their level of agreement with the following statements: (i) “More good jobs for blacks means fewer good jobs for whites” and (ii) “the more influence blacks have in local politics, the less influence whites will have.” The scale ranged from 2-10, and higher scores represented stronger perceptions of threat; the Cronbach’s alpha was within an acceptable range (0.76) (Floyd and Widaman 1995) (Refer to Table 1 for details).
### Table 1. Whites' Racial Attitudes: Outcome Measures

<table>
<thead>
<tr>
<th>Scale/index</th>
<th>Higher values indicate</th>
<th>No. of items</th>
<th>Scale internal consistency reliability (Cronbach's alpha)</th>
<th>Items</th>
<th>Rating scale for each item</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whites' Stereotypes against Blacks</td>
<td>more negative stereotypes</td>
<td>4</td>
<td>0.91</td>
<td>I want to know whether you think Blacks tend to be (1) intelligent/unintelligent; (2) self-supportive/live on welfare; (3) get along/hard to get along with others; (4) speak English well/poorly</td>
<td>[-3]=Positive trait; [0]=Neutral; [3]=Negative trait</td>
<td>[-3, 3]</td>
</tr>
<tr>
<td>Whites' Opposition to Affirmative Action Policies for Blacks</td>
<td>stronger opposition to affirmative action policies</td>
<td>2</td>
<td>0.67</td>
<td>(1) Due to past disadvantages blacks should receive special job training and educational assistance; (2) due to past disadvantages blacks should be given preference in hiring and promotion</td>
<td>1=strongly favor; 2=favor; 3=neither favor nor oppose; 4=oppose; 5=strongly oppose</td>
<td>[2,10]</td>
</tr>
<tr>
<td>Whites' Threat Perceptions of Blacks</td>
<td>stronger perceptions of economic and political threat</td>
<td>2</td>
<td>0.76</td>
<td>(1) More good jobs for blacks means fewer good jobs for whites; (2) the more influence GROUP [blacks, latinos, asians] have in local politics the less influence whites will have</td>
<td>1=strongly disagree; 2=generally disagree; 3=neither; 4=generally agree; 5=strongly agree</td>
<td>[2,10]</td>
</tr>
</tbody>
</table>
Table 2 shows pair-wise Pearson correlations among the three attitude outcomes that ranged from 0.188 to 0.297. These low correlation coefficients suggest the existence of three different concepts or attitudes being captured by the “stereotypes,” “affirmative action” and “group threat toward blacks” variables.

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.190</td>
<td>1.000</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.297</td>
<td>0.188</td>
<td>1.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table 2. Pair-wise Pearson Correlations: Outcomes
PREDICTOR VARIABLES

Level-3 Racial Context

Two predictors of racial context were used in the analysis. Data from the 1990 census was linked to MCSUI data to build our level-3 racial context variables. Race composition, as established in previous studies, is the proportion of the minority group at the county level, and is used as a continuous variable. In addition, as mentioned earlier and described below, two indices of racial residential segregation, to tap evenness (i.e. Theil Index) and exposure (i.e. Exposure Index) are used to examine racial context effects on whites’ racial attitudes.

Racial residential segregation describes the distribution of various racial groups across units located within larger areas; therefore, a larger area and its constituting units need to be defined when measuring racial residential segregation. The units of analysis for this study are tracts within counties. In the United States, counties are politically and economically meaningful units. The power distribution between the state government and county governments is defined by each state’s constitution and, as a result, this dynamic varies widely from state to state. The average U.S. county population is about 100,000. Larger areas, such as counties, are typical geographic units where people compete for jobs, resources, and political power. Racial diversity among counties, thus, may translate into greater competition among groups for power and status. Counties also “provide a good consistent aerial unit for describing regional and local variations in segregation” (Allen and Turner 2012:7). In contrast, in smaller areas, such as census tracts, the nature of interactions is more likely to be social. Rather than seeing members of out-groups as rivals or competitors, people in their neighborhoods may view others nearby as acquaintances or neighbors. Thus, neighborhoods are defined by using the census tract as its delineating boundaries. Census tracts are small, relatively permanent statistical subdivisions of a county that
generally contain between 1,500 and 8,000 people, with an average size of 4,000 people (U.S. Census Bureau 2000)

Racial residential segregation has five dimensions that describe distinct geographic patterns: evenness, exposure, clustering, centralization and concentration (Massey and Denton 1988). Briefly, evenness reflects the distribution of populations; exposure measures potential contact between groups; concentration refers to the relative geographic space occupied; centralization shows the level of residential concentration around the center of an urban area; and clustering represents disproportionate levels of contiguous residential patterns among members of the same group. In this dissertation, the Theil and the Exposure indices are used to assess and contrast the effects of evenness and exposure, respectively, on whites’ attitudes toward racialized others.

The Theil Index measures the spatial distribution of ethnic groups among units (tracts) in a larger area (county); it shows the extent of racial diversity in an area. The measure varies between 0 (perfectly even: all tracts have same racial composition as the county area integration) and 1 (perfectly uneven/segregated: all tracts have only one population group). To capture 100% of the population in each county, the Theil index calculations were based on numbers of people in five exhaustive and non-overlapping racial groups as defined in the 2000 U.S. Census (U.S. Census Bureau): Hispanics or Latinos of any race, non-Hispanic whites, non-Hispanic blacks, non-Hispanic Asians and Pacific Islanders, and persons of “other” non-Hispanic race. In contrast to the Dissimilarity Index, one of the most common two-group approach measures of residential evenness used (Reardon and Firebaugh 2002), I use the Theil Index to better capture the geographic variation in the distribution of multiple population groups. This approach reflects more accurately the growing multi-ethnic/racial context that characterizes the United States.
Lower levels in the Theil index indicate less segregation (i.e. group populations are evenly distributed) (Weinberg, Iceland et al. 2002).

The Exposure Index measures the exposure dimension of segregation and indicates the potential contact between groups within tracts of a county. The degree of minority exposure to the majority is given by the probabilities of the two groups sharing a common tract (or neighborhood). In contrast to the Theil index, lower levels of exposure indicate higher segregation (i.e. lower probabilities of shared neighborhoods).

Syntax previously created for Stata 7 (StataCorp 2001) to calculate segregation indices was used to compute segregation indices in this study (Reardon 2002). For validity purposes, the Index of Dissimilarity was also calculated using Stata 10 (Reardon 2002) at the county/tract and results were compared with 1990 nationally available and validated indices from the Racial Residential Segregation Measurement Project created by the Population Studies Center at the University of Michigan (Farley Accessed 2010). Correlations between the two indices were high--0.98. For the analysis, the measures of racial residential segregation were treated as continuous variables.

To investigate nonlinearity in the effects of racial residential segregation on whites’ attitudes, I created and tested associations using a 4-category parameterization of the segregation variable. If associations with this 4-category variable were linear then I used the continuous form of the racial residential segregation. Otherwise, when associations were non-linear, I used the 4-category variable. Categories were created by dividing the range by four equally spaced intervals (Rothman, Greenland et al. 2008). For those models where nonlinearity was evident, I proceeded to fit models with the categorical parameter. A Chi-square group test in HLM was used to test for significant differences of all the categories when the null hypothesis states there exist no
significant differences between any category and the rest. Non-linearity was evident for the Exposure Index of racial residential segregation. As a consequence, analyses were run using the 4-category Exposure variable in subsequent analyses.

**Level-2 Racial Context**

Racial context at the neighborhood-level was measured with the proportion of the minority group (total population as a denominator) used as a continuous variable.

**CONTROL VARIABLES**

**Level-2 Confounders**

Consistent with past macro-level research (Land, McCall et al. 1990; Silver, Mulvey et al. 2002; Messer, Kaufman et al. 2006), factor analysis with Varimax rotation was used to compute indices of neighborhood socioeconomic context. Previous studies have identified a number of census variables that when aggregated represent meaningful neighborhood/contextual characteristics of the environment where people live. Based on a review of most common and theoretically relevant census variables used to represent neighborhood effects (Messer, Kaufman et al. 2006), I performed a factor analysis with twenty-one census variables at the tract level using the ‘predict’ command in Stata 10 (Hamilton 2009). The twenty-one variables grouped together into three component factors that I labeled “neighborhood affluence”, “neighborhood stability” and “foreign populations”. Table 3 displays factor loadings, Eigen values and cumulative variance explained by the three factors. Three factor scores were then created (Hamilton 2009). The predict command in Stata 10 automatically creates factor scores using the most recent rotate results. Factor scores are standardized to a zero mean and one unit variance, and weighted with factor score coefficients (Hamilton 2009).
Level-1 Confounders

To control for selection bias and compositional effects, I controlled for the following demographics: age and education in years modeled linearly, sex (dichotomous variable defined as: male-Reference Category 0; and female equals 1), marital status (dichotomous variable defined as: married-Reference Category 0; and not married equals 1), and family income (a five category variable defined as: 0-$9,999: Reference Category; $10,000-$29,999; $30,000-$49,999; $50,000-over; and missing). In addition, two variables, previously identified in the literature (Quillian 1996; Dixon 2006; Krysan 2008) on racial attitudes as significant covariates, were used as potential confounders: political party (a five category variable defined as: Republican-Reference Category; Democrat; Independent; and No Preference) and attendance to religious services (a five category variable defined as: never-Reference Category; few times a year; once/twice a month; almost every week; and every week). In addition, given the historical and racial composition differences among the four cities from which the samples were drawn, I control for metro area of residence in the analyses (a four category variable defined as: Detroit-Reference Category 0; Atlanta 1; Los Angeles 2; and Boston 3).
ANALYTIC STRATEGY

First, I examined univariates descriptors of predictor and outcome variables, and bivariates associations between the outcome and each of the predictors and covariates. Three-level multilevel linear regression analyses investigate associations between each outcome and the contextual predictors of interest (i.e. county-level size of black population, county-level racial residential segregation, and neighborhood-level size of black population) controlling for level-1 confounders (i.e. gender, age, marital status, political party, religious attendance, and city of

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Table 3. Items and Factor Loadings for Neighborhood factors at the Tract Level

<table>
<thead>
<tr>
<th>Item</th>
<th>Loadings</th>
<th>Eigen Value</th>
<th>Cumulative variance explained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1: Neighborhood Affluence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% 18yrs/older with less than high school</td>
<td>-0.89</td>
<td>9.26</td>
<td>0.53</td>
</tr>
<tr>
<td>% female headed households</td>
<td>-0.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% males 16yrs/older not in the work force</td>
<td>-0.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% females 16yrs/older not in the work force</td>
<td>-0.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% households receiving public assistance</td>
<td>-0.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% persons under poverty level</td>
<td>-0.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% 25yrs/older with bachelor's degree</td>
<td>0.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% 25yrs/older with graduate or higher education</td>
<td>0.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% professionals/managerial positions</td>
<td>0.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% households received interest/dividends</td>
<td>0.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% household receiving wages</td>
<td>0.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>natural log of median household income</td>
<td>0.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 2: Neighborhood Stability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% family households</td>
<td>0.91</td>
<td>2.82</td>
<td>0.73</td>
</tr>
<tr>
<td>% households of married couples with children</td>
<td>0.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% in same household in the last five years</td>
<td>0.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% non-vacant houses</td>
<td>0.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% owner occupied households</td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>natural log of median house value</td>
<td>0.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 3: Foreign Populations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% households speak Spanish (linguistically isolated)</td>
<td>0.75</td>
<td>2.20</td>
<td>0.88</td>
</tr>
<tr>
<td>% households speak Asians (linguistically isolated)</td>
<td>0.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% foreign born persons</td>
<td>0.92</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
residence) and level-2 confounders (i.e. neighborhood’s level of affluence and level of stability). Model fit was conducted using multi-level modeling techniques. Cross-sectional, three-level linear regressions for the attitudes models were estimated to test the effects of racial context at the county- and neighborhood-level on whites’ racial attitudes (measured at the level-1), with individuals at level 1 nested within neighborhoods at level 2, and these nested, in turn, within counties at level 3. An alpha value of .05 was used on the two-tailed tests. The multilevel model takes account of between-group and within-group variance, estimating error terms at both the lower and the higher levels; therefore, data dependence is properly modeled and standard errors are more accurately estimated (Raudenbush and Bryk 2002).

Three-level multilevel linear regression models were specified to model whites’ racial attitudes using Hierarchical Linear and Nonlinear Modeling (HLM) 6.08, a specialized statistical software designed to analyze hierarchically structured data (Snijders and Bosker 1999; Raudenbush and Bryk 2002; Rabe-Hesketh and Skrondal 2005). Models were estimated using Empirical Bayes estimates as implemented with HLM 6.08 (Raudenbush, Bryk et al. 2004). To test for random effects, HLM produces a chi-square statistic that tests the significance of the between-group variance. A significant chi-square for the dependent variable’s intercept and variance indicates that between-group variance is significantly different from zero and that the intercept term varies across groups (Raudenbush, Bryk et al. 2004). All of the independent variables measured linearly at level 2 and at level 1 were centered around the sample’s grand mean, categorical variables were not centered.

The first model (Null Model) tested for significant contextual variation of whites’ racial attitudes at both the neighborhood- and county-level. The second model, Confounders Model, controlled for the level-1 confounders (i.e. gender, age, marital status, political party, religious
attendance, and city of residence). Model 1a tested the effects of racial residential segregation after controlling for level-1 confounders. For parsimony, Models 1a included only the racial residential segregation index that was significantly associated with the outcome at the p<0.05 level in the bivariate analyses. Models 1b tested for the effects of county-level proportion of blacks after controlling for level-1 confounders. Model 2 tested for the effects of neighborhood-level proportion of blacks after controlling for level-1 and level-2 confounders (i.e. neighborhood’s indices of affluence and stability). And Models 3a and Models 3b tested for the effects of racial residential segregation and the county’s proportion of blacks, respectively, simultaneously with the neighborhoods’ proportion of blacks, after controlling for level-1 and level-2 confounders.

Below, I provide a mathematical representation of the Models run in this chapter:

**Null Model:** will test for whites’ racial attitudes as a linear function of the area in which participants live represented by the area level random intercept:

\[ Y_{ijk} = \beta_0 X_{0ijk} + \mu_{0k} + \nu_{0jk} + \epsilon_{0ijk} \]

**Confounders Model:** will test for whites’ racial attitudes as a linear function of the area in which participants live, represented by the area level random intercept adjusting for Individual-Level Confounders

\[ Y_{ijk} = \beta_0 X_{0ijk} + \beta_1 (gender)_{ijk} + \beta_2 (age)_{ijk} + \beta_3 (MST)_{ijk} + \beta_4 (EDU)_{ijk} + \beta_5 (FINC)_{ijk} + \beta_6 (POL)_{ijk} + \beta_7 (REL)_{ijk} + \beta_8 (city)_{ijk} + \mu_{0k} + \nu_{0jk} + \epsilon_{0ijk} \]

**Model 1a:** County-Level Racial residential segregation and Whites’ Racial Attitudes

Random Intercepts Model Adjusted for Individual-Level Confounders

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\[ Y_{ijk} = \beta_0 X_{0ijk} + \beta_1 \text{(gender)}_{ijk} + \beta_2 \text{(age)}_{ijk} + \beta_3 \text{(MST)}_{ijk} + \beta_4 \text{(EDU)}_{ijk} + \beta_5 \text{(FINC)}_{ijk} + \beta_6 \text{(POL)}_{ijk} + \beta_7 \text{(REL)}_{ijk} + \beta_8 \text{(city)}_{ijk} + \alpha_2 (RSI)_k + \mu_{0k} + \nu_{0jk} + \epsilon_{0ijk} \]

**Model 1b:** County-Level Racial Context and Whites’ Racial Attitudes Random Intercepts Model Adjusted for Individual-Level Confounders

\[ Y_{ijk} = \beta_0 X_{0ijk} + \beta_1 \text{(gender)}_{ijk} + \beta_2 \text{(age)}_{ijk} + \beta_3 \text{(MST)}_{ijk} + \beta_4 \text{(EDU)}_{ijk} + \beta_5 \text{(FINC)}_{ijk} + \beta_6 \text{(POL)}_{ijk} + \beta_7 \text{(REL)}_{ijk} + \beta_8 \text{(city)}_{ijk} + \alpha_1 (CRC)_k + \mu_{0k} + \nu_{0jk} + \epsilon_{0ijk} \]

**Model 2:** Neighborhood-Level Racial Context and Whites’ Racial Attitudes Random Intercepts Model Adjusted for Neighborhood-Level Socioeconomic confounders and Individual-Level confounders

\[ Y_{ijk} = \beta_0 X_{0ijk} + \beta_1 \text{(gender)}_{ijk} + \beta_2 \text{(age)}_{ijk} + \beta_3 \text{(MST)}_{ijk} + \beta_4 \text{(EDU)}_{ijk} + \beta_5 \text{(FINC)}_{ijk} + \beta_6 \text{(POL)}_{ijk} + \beta_7 \text{(REL)}_{ijk} + \beta_8 \text{(city)}_{ijk} + \tau_1 (NRC)_{jk} + \tau_2 (NAI)_{jk} + \tau_3 (NSI)_{jk} + \mu_{0k} + \nu_{0jk} + \epsilon_{0ijk} \]

**Model 3a:** County-Level Racial Residential Segregation and Neighborhood-Level Racial Context, and Whites’ Racial Attitudes Random Intercepts Model Adjusted for level-1 confounders and Neighborhood-Level Socioeconomic confounders

\[ Y_{ijk} = \beta_0 X_{0ijk} + \beta_1 \text{(gender)}_{ijk} + \beta_2 \text{(age)}_{ijk} + \beta_3 \text{(MST)}_{ijk} + \beta_4 \text{(EDU)}_{ijk} + \beta_5 \text{(FINC)}_{ijk} + \beta_6 \text{(POL)}_{ijk} + \beta_7 \text{(REL)}_{ijk} + \beta_8 \text{(city)}_{ijk} + \tau_1 (NRC)_{jk} + \tau_2 (NAI)_{jk} + \tau_3 (NSI)_{jk} + \alpha_1 (RSI)_k + \mu_{0k} + \nu_{0jk} + \epsilon_{0ijk} \]
**Model 3b:** County-Level Racial Context and Neighborhood-Level Racial Context, and Whites’ Racial Attitudes Random Intercepts Model Adjusted for level-1 confounders and Neighborhood-Level Socioeconomic confounders

\[ Y_{ijk} = \beta_0 X_{0ijk} + \beta_1 (\text{gender})_{ijk} + \beta_2 (\text{age})_{ijk} + \beta_3 (\text{MST})_{ijk} + \beta_4 (\text{EDU})_{ijk} + \beta_5 (\text{FINC})_{ijk} + \beta_4 (\text{POL})_{ijk} + \beta_5 (\text{REL})_{ijk} + \beta_6 (\text{city})_{ijk} + \tau_1 (\text{NRC})_{jk} + \tau_2 (\text{NAI})_{jk} + \tau_3 (\text{NSI})_{jk} + \alpha_1 (\text{CRC})_k + \mu_{0k} + \nu_{0jk} + e_{0ijk} \]

Where: The individual-level, neighborhood-level, and county-level covariate parameters are represented by \( \beta, \tau, \) and \( \alpha, \) and:

- \( i = \) individual participant
- \( j = \) neighborhood cluster
- \( k = \) county cluster
- \( Y_{ijk} = \) Whites’ racial attitudes for the \( i^{th} \) participant in neighborhood \( j \) located in county \( k \)
- \( \beta_0 = \) intercept, it is the overall mean of Whites’ attitudes

**Model Predictor Variables**

**Level-3 Predictors**
- \( \text{CRC} = \) county racial context-percentage of minority population at the County-Level
- \( \text{RSI} = \) racial residential segregation index

**Level-2 Predictor**
- \( \text{NRC} = \) neighborhood racial context-percentage of minority population at the Neighborhood-Level

**Level-2 confounders:**
- \( \text{NAI} = \) neighborhood affluence index
- \( \text{NSI} = \) neighborhood stability index

**Level-1 confounders:**
- \( \text{Gender} = \) participant’s gender
- \( \text{Age} = \) participant’s age
- \( \text{MST} = \) participant’s marital status
- \( \text{EDU} = \) years of education
- \( \text{FINC} = \) Family education
- \( \text{POL} = \) Political party
- \( \text{REL} = \) Religious attendance
- \( \text{City} = \) City of participants’ residence
* Categorical variables will be expanded in models to include all values except a reference category

**Level 3 Var:** $\mu_{0k} | \pi_{ijk} \sim N(0, \sigma^2_{\mu0k})$
- Independent across counties $\sigma^2_{\mu0k}$ is residual between-counties variance

**Level 2 Var:** $\nu_{0jk} | \pi_{ijk} \sim N(0, \sigma^2_{\nu0jk})$
- Independent across neighborhoods, independent of $\mu_{0k}$
- $\sigma^2_{\nu0jk}$ is residual between-neighborhoods, within counties variance

In addition, it is assumed that:

- $\mu_{0k} = \text{county level residuals which are normally distributed with a mean 0 and variance } \sigma^2_{\mu0k}$
- $\nu_{0jk} = \text{neighborhood level residuals which are normally distributed with a mean 0 and variance } \sigma^2_{\nu0jk}$
- $e_{0ijk} = \text{individual level residuals which are normally distributed with a mean 0 and variance } \sigma^2_{e0ijk}$

The random-intercept models can be written mathematically as Equations 1, 2 and 3:

1. $Y_{ijk} = \beta_{0jk} + \beta_p X_{pijk} + e_{ijk}$
2. $\beta_{0jk} = \gamma_{00k} + \gamma_{0q} Z_{qjk} + u_{0jk}$
3. $\gamma_{00k} = \pi_{000} + \pi_{00s} W_{sk} + r_{00k}$

Equation 1 states that, for respondent $i$ who lives in neighborhood $j$ further nested within county $k$, the value of the outcome variable ($Y_{ijk}$) equals the sum of the intercept for neighborhood nested within county ($\beta_{0jk}$), the product of the vector Level 1 coefficients ($\beta_p$) and the values of the set of Level 1 independent variables ($X_{pijk}$), and an error term ($e_{ijk}$) unique to the participant. Equation 2 states that the intercept for neighborhood $j$ nested within county $k$ ($\beta_{0jk}$) is equal to the sum of the average intercept for all neighborhoods $j$ nested within county $k$ holding the independent variables constant ($\gamma_{00k}$), the product of the $q$ Level 2 coefficients ($\gamma_{0q}$) and the set of Level 2 predictors ($Z_{qjk}$), and the random deviation ($u_{0jk}$) unique to the neighborhood nested within level-3. Equation 3 states that the intercept for the county ($\gamma_{00k}$) is equal to the sum
of the average intercept for all counties, holding the independent variables constant ($\pi_{000}$), the product of the Level 3 coefficients ($\pi_{00s}$) and the set of Level 3 predictors ($W_{sk}$), and the random deviation ($r_{00k}$) unique to the level-3 (Raudenbush and Bryk 2002).

All the coefficients except for the intercept were modeled so that positive coefficients indicated greater prejudice. Grand mean centering was used for continuous variables and binary variables were uncentered.

Next, I present and interpret results from analyses consistent with my hypotheses and conceptual models; tables 5, 6 and 7 present results for each of the three outcomes: (1) whites’ negative stereotypes toward blacks, (2) opposition to affirmative action policies supporting blacks, and (3) perception of threat toward blacks. There are seven columns within each table presented: a Null Model, Level-1 Confounders Model, Model 1a that test for the effects of racial residential segregation adjusting for level-1 confounders, Model 1b that test for the effects of county-level racial context adjusting for level-1 confounders, Model 2 that test for neighborhood-level racial context adjusting for adjusting for level-1 and neighborhood-level confounders, and Models 3a and 3b that test for the effects of racial residential segregation and county-racial context, respectively, adjusting for level-1 and neighborhood-level confounders.

**Sample Profile**

The sample is representative of the Detroit, Atlanta, Los Angeles, and Boston metro areas, four very different metropolitan areas that allow the examination of racial residential segregation and neighborhood dynamics simultaneously. The sample also provides the opportunity to examine the association of racial residential segregation with whites’ racial attitudes. In terms of racial context, Atlanta shows a bi-racial context (blacks & whites); Los Angeles is largely
composed of similar proportions of white and Latino groups, and much smaller proportions of blacks; and the Greater Boston area is the least diverse area, with a large proportion of white residents and a smaller percentage of blacks and Latinos largely concentrated in Suffolk County. The MCSUI oversampled low-income persons, and members of minority groups residing in cities of Los Angeles, Detroit, Atlanta, and Boston (Bobo 2001). We followed Rubin’s recommendations (1976) and did not use post-stratification weights provided by MCSUI, given that the sources of unequal probabilities (i.e. race and socioeconomic factors) were fully controlled for in our models’ covariates (Rubin 1976).

The sample for this analysis was restricted to include respondents who identified themselves as whites. The sample size varies depending on the availability of specific outcomes within a given metro area as follows: N=1397 for negative stereotypes model (includes 728 participants from Detroit, 218 from Atlanta, 254 from Los Angeles, and 197 from Boston), N=2789 for opposition to affirmative action model (includes 728 participants from Detroit, 641 from Atlanta, 835 from Los Angeles, and 585 from Boston), and N=1108 for group perceptions of threat model (includes 641 from Atlanta, 279 from Los Angeles, and 188 from Boston). The overall white sample includes a higher percentage of women (55%); the sample’s mean age was 46.6 (SD=17.1). A little more than half were married and they had an average level of education of 14 years (SD=2.6). A little over half of the sample held occupations at the managerial/professional level, and almost one-third were not in the labor force. In terms of political and religious participation, more than one-third identified themselves as democrats, and two-fifths identified as moderate in their liberal-conservative beliefs. More than one-third attended religious events a few times a year and one quarter attended religious events once a week or more.
RESULTS

Table 4 shows bivariate associations between whites’ negative stereotypes against blacks, opposition to affirmative action policies, and perceptions of a threat from blacks; and the predictors at level-3 (Theil and Exposure Indices of racial residential segregation, and county’s percent of blacks) and at level-2 (neighborhoods’ percent of blacks). Table 4 also shows bivariate associations between the three outcomes and the confounders at level-2 (neighborhoods’ socioeconomic context measured with the indices of affluence and stability) and confounders at level-1 (participant’s gender, age, marital status, years of education, family income, political party, attendance to religious services, and city of residence).

Bivariate associations between outcomes and level-1 confounders (refer to Table 4, Level-1: Confounders) showed that women reported higher opposition to affirmative action policies; older participants reported higher stereotypes against blacks and a higher perceived threat from blacks; while younger respondents reported lower opposition to affirmative action policies. An increase in education above the mean reduced negative stereotypes against blacks and the perception of a threat from blacks. Compared to whites in the lowest category of family income [$0-9,999], whites in higher income categories reported higher negative stereotypes against blacks, higher opposition to affirmative action policies, and a lower perception of threat from blacks. Identification with a left-wing political party decreased opposition to affirmative action policies. Compared to whites that resided in Detroit and Atlanta, whites in Los Angeles and Boston had, overall, more positive attitudes toward blacks (for details refer to Table 4, Level 1: Confounders).
### Table 4. Whites' Racial Attitudes toward Blacks: Descriptives and Bivariates

<table>
<thead>
<tr>
<th>Level-1</th>
<th>Negative Stereotypes</th>
<th>Opposition to Affirmative Action</th>
<th>Perceived Group Threat</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>1341</td>
<td>2707</td>
<td>1097</td>
</tr>
<tr>
<td>Level-2</td>
<td>N=338</td>
<td>N=410</td>
<td>N=259</td>
</tr>
<tr>
<td>Level-3</td>
<td>N=20</td>
<td>N=20</td>
<td>N=17</td>
</tr>
</tbody>
</table>

### Level-3: Predictors: Racial Context

#### Descriptives

<table>
<thead>
<tr>
<th>Outcome</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theil Index</td>
<td>31.46</td>
<td>14.83</td>
<td>3.92</td>
<td>61.16</td>
<td>-0.015</td>
<td>0.007</td>
<td>0.048</td>
<td>*</td>
<td>-0.005</td>
<td>0.013</td>
<td>0.672</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposure of Whites to Blacks Index</td>
<td>7.72</td>
<td>5.17</td>
<td>1.15</td>
<td>26.61</td>
<td>-0.036</td>
<td>0.010</td>
<td>0.003</td>
<td>**</td>
<td>0.015</td>
<td>0.018</td>
<td>0.401</td>
<td>0.014</td>
<td>0.017</td>
<td>0.419</td>
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</tr>
</tbody>
</table>

#### Bivariates

<table>
<thead>
<tr>
<th>Outcome</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theil Index</td>
<td>31.46</td>
<td>14.83</td>
<td>3.92</td>
<td>61.16</td>
<td>-0.015</td>
<td>0.007</td>
<td>0.048</td>
<td>*</td>
<td>-0.005</td>
</tr>
<tr>
<td>Exposure of Whites to Blacks Index</td>
<td>7.72</td>
<td>5.17</td>
<td>1.15</td>
<td>26.61</td>
<td>-0.036</td>
<td>0.010</td>
<td>0.003</td>
<td>**</td>
<td>0.015</td>
</tr>
</tbody>
</table>

### Level-2 Predictor: Racial Context

#### Descriptives

<table>
<thead>
<tr>
<th>Outcome</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Blacks in County</td>
<td>12.71</td>
<td>14.85</td>
<td>1.38</td>
<td>49.74</td>
<td>-0.008</td>
<td>0.006</td>
<td>0.254</td>
<td>-0.003</td>
<td>0.005</td>
<td>0.563</td>
<td>0.005</td>
<td>0.007</td>
<td>0.501</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Level-2 Confounders

#### Neighborhoods' Socioeconomic Context

<table>
<thead>
<tr>
<th>Outcome</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood Affluence Index</td>
<td>0.11</td>
<td>0.67</td>
<td>-2.25</td>
<td>1.43</td>
<td>0.134</td>
<td>0.044</td>
<td>0.003</td>
<td>0.287</td>
</tr>
<tr>
<td>Neighborhood Stability Index</td>
<td>-0.09</td>
<td>0.70</td>
<td>-2.08</td>
<td>1.17</td>
<td>0.018</td>
<td>0.047</td>
<td>&lt;0.001</td>
<td>0.381</td>
</tr>
</tbody>
</table>

### Level-1: Confounders

#### Sex

<table>
<thead>
<tr>
<th>Outcome</th>
<th>M or SD of Freq</th>
<th>%</th>
<th>Min</th>
<th>Max</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male-Ref</td>
<td>1259</td>
<td>48.1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1530</td>
<td>51.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

#### Age in Years

<table>
<thead>
<tr>
<th>Outcome</th>
<th>M or SD of Age</th>
<th>%</th>
<th>Min</th>
<th>Max</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
</tr>
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<tbody>
<tr>
<td>18-24</td>
<td>3460</td>
<td>32.6</td>
<td>21.0</td>
<td>96.0</td>
<td>-0.008</td>
<td>0.002</td>
<td>&lt;0.001</td>
<td>-0.016</td>
<td>0.004</td>
<td>0.001</td>
<td>**</td>
<td>-0.004</td>
<td>0.003</td>
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</table>

#### Marital Status

<table>
<thead>
<tr>
<th>Outcome</th>
<th>M or SD of Marital Status</th>
<th>%</th>
<th>Min</th>
<th>Max</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>Married-Ref</td>
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<td>52.5</td>
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<tr>
<td>Non-married</td>
<td>1325</td>
<td>47.5</td>
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</table>

#### Education in Years

<table>
<thead>
<tr>
<th>Outcome</th>
<th>M or SD of Education</th>
<th>%</th>
<th>Min</th>
<th>Max</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>1-12</td>
<td>13.6</td>
<td>26.0</td>
<td>0.0</td>
<td>17.0</td>
<td>-0.033</td>
<td>0.007</td>
<td>&lt;0.001</td>
<td>0.030</td>
<td>0.020</td>
<td>0.130</td>
<td>-0.196</td>
<td>0.018</td>
<td>&lt;0.001</td>
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</table>

#### Family Income

<table>
<thead>
<tr>
<th>Outcome</th>
<th>M or SD of Family Income</th>
<th>%</th>
<th>Min</th>
<th>Max</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
<th>β</th>
<th>SE</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>$0-$9,999</td>
<td>319</td>
<td>11.4</td>
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<tr>
<td>$10,000-$29,999</td>
<td>686</td>
<td>24.6</td>
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<tr>
<td>$30,000-$49,999</td>
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<td>23.2</td>
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#### Political party

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#### Religious attendance

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P<0.10 ; P<0.05 *; P<0.01 **; P<0.001 ***
Whites’ Racial Attitudes and Racial Context at the County-Level

The Null Model in Tables 5, 6, and 7 show the variance components under the random part of the model. Significant contextual variation at the county-level was evident for each of the three outcomes measuring whites’ attitudes toward blacks. Factors at the county-level significantly explained nine percent, six percent and seven percent of the variance in whites’ stereotypes against blacks (Chi-Square=105.2; df=19; p-value=<0.0001), opposition to affirmative action policies (Chi-Square=103.4; df=19; p-value=<0.0001), and perceived threat from blacks (Chi-Square=60.6; df=16; p-value=<0.0001), respectively.

Next, results of the analyses examining whether racial residential segregation and the percent of minority groups explained the significant variance found at the county-level are presented.

Racial residential segregation: Table 4 shows significant and negative associations between whites’ negative stereotypes against blacks and the Exposure Index of racial residential segregation (β =-0.036, SE=0.010, p<0.01). Further tests of linearity (refer to Methodology section for details) showed a non-linear association between whites’ negative stereotypes against blacks and the Exposure Index. Table 4 shows an inverted U-shape association. Compared to whites residing in areas of extremely low exposure [Exposure Index Range: 1.2-7.5], whites in areas of very low exposure [Exposure Index Range: 7.6-13.9] held higher levels of negative stereotypes; however, compared to whites residing in areas of extremely low exposure, whites residing in either areas of low exposure [Exposure Index Range: 14.0-20.3], and moderately low exposure [Exposure Index Range: 20.4-26.7] held lower levels of negative stereotypes respectively. Chi square test of independence showed an overall significant difference in the effect of each category and the outcome compare to the reference group (Chi-Square=523.3;
df=3; p-value=<0.0001). Significant differences in negative stereotypes were evident between whites residing in areas of extremely low exposure compared to those residing in areas of moderately low exposure (β =-0.936, SE=0.092, p<0.0001). The next four columns in Table 4 show a significant bivariate association between whites’ opposition to affirmative action policies and the Theil Index (β =-0.015, SE=0.007, p<0.05). Non-linearity was also evident in bivariate associations between whites’ perception of threats from blacks and the Exposure Index; therefore, a 4-category variable was created and used in subsequent analyses. Bivariate associations between perceived group threat and the 4-category variable of exposure in Table 4 shows that, compared to whites residing in areas of extremely low exposure, whites residing in areas of very low, low, and moderately low exposure reported higher levels of perceived group threat. This association was non-linear as indicated by the lower coefficient value of the extremely low with moderately low association compared to both the extremely low with very low, and the extremely low with low associations. Chi square test of independence showed an overall significant difference in the effect of each category and the outcome compare to the reference group (Chi-Square=35.8; df=3; p-value=<0.0001). Significant differences in perceived group threat were evident between whites residing in areas of extremely low exposure compared to those residing in areas of moderately low exposure (β =0.725, SE=0.180, p<0.01).

In sum, bivariate results in Table 4 shows statistically significant associations of (1) Exposure Index (both linear and categorical) with whites’ negative stereotypes against blacks, (2) Theil Index (linear form) with opposition to affirmative action policies, and (3) Exposure Index (categorical form) with perceived group threat. Therefore, only these associations are further tested in Tables 5, 6 and 7.
Minority groups’ size: Table 4 shows no significant associations between county’s percent of blacks and whites’ negative stereotypes against blacks, opposition to affirmative action policies, and perceived threat. Despite the no significance of these bivariate associations, I will further examine associations between county’s percent of blacks and the three outcomes in Tables 5, 6 and 7 due to the importance of these associations as part of testing Hypothesis 1.

Next, results of analysis between outcomes and level-3 predictors (i.e. racial residential segregation and county’s percent of blacks) after controlling for potential confounders at level-1 (i.e. gender, age, marital status, years of education, family income, political party, attendance to religious services, and city of residence) are presented. Results of the three outcomes are shown separately in Tables 5, 6, and 7; Models 1a and 1b respectively.

Racial residential segregation: Model 1a, in Tables 5, 6, and 7 shows that after controlling for level-1 confounders, only associations between whites’ stereotypes against blacks and the 4-category variable of blacks exposure to whites remains statistically significant (Chi-Square=25.0; df=3; p-value<.0001), explaining an additional 44.9 percent of the county-level variance over that explained by the level-1 confounders alone. Together, level-1 confounders and 4-category exposure explained 100 percent of the variance of whites’ stereotypes against blacks at the county-level.

The same inverted U-shape association between whites’ stereotypes against blacks and the 4-categorical exposure variable observed in bivariate analyses remained after controlling for level-1 confounders. Table 5, Model 1a, shows an inverted U-shape association where, compared to whites residing in areas of extremely low exposure, whites in areas of very low exposure held
higher levels of negative stereotypes; however, compared to whites residing in areas of extremely low exposure, whites residing in either areas of low exposure, and moderately low exposure held lower levels of negative stereotypes respectively. Chi square test of independence showed that the overall significant difference in the effect of each category and the outcome compared to the reference group (Chi-Square=25.04; df=4; p-value=<0.0001) remained after controlling for level-1 confounders. Similarly, significant differences in negative stereotypes between whites residing in areas of extremely low exposure, compared to those residing in areas of moderately low exposure, (β = -0.798, SE=0.206, p<0.01) remained. Significant associations observed in bivariate analysis between the Theil Index and opposition to affirmative action policies; and between the 4-category variable of Exposure and perceived threat of blacks became not significant after adjusting for level-1 confounders.

**Minority groups’ size:** Model 1b, in Tables 5, 6, and 7 continues to show no significant associations between county’s percent of blacks and whites’ negative stereotypes against blacks, opposition to affirmative action policies, and perceived threat.

**Whites’ Racial Attitudes and Racial Contexts at the Neighborhood-Level**

Null Model in Tables 5, 6, and 7 showed significant contextual variations for each of the three outcomes measuring whites’ attitudes toward blacks. Factors at the neighborhood-level significantly explained two percent, seven percent, and seven percent of the variance in whites’ stereotypes against blacks (Chi-Square=397.3; df=318; p-value=<0.01), opposition to affirmative action policies (Chi-Square=641.0; df=390; p-value=<0.0001), and perceived threat from blacks (Chi-Square=302.3; df=242; p-value=<0.01, respectively.
Next, results of the analyses examining whether neighborhood’ racial context explained the significant variance found at the neighborhood-level, before and after adjusting for neighborhood’s socioeconomic context are presented.

Bivariate associations presented on Table 4 show significant and negative associations between neighborhoods’ percent of blacks and whites’ negative stereotypes against blacks ($\beta = -0.007$, SE=0.002, $p<0.0001$), and between neighborhoods’ percent of blacks and whites’ opposition to affirmative action policies ($\beta = -0.016$, SE=0.004, $p<0.01$); associations of neighborhoods’ percent of blacks with whites’ perceived threat were not significant. Model 2, in Tables 5, 6, 7 showed that after controlling for level-1 and level-2 confounders (i.e. neighborhood indices of affluence and stability), the significant and negative association of neighborhoods’ percent of blacks with whites’ negative stereotypes against blacks ($\beta = -0.006$, SE=0.002, $p<0.01$), and the significant and negative association of neighborhoods’ percent of blacks with whites’ opposition to affirmative action policies ($\beta = -0.012$, SE=0.002, $p<0.0001$) remained. The statistically non-significant association of neighborhoods’ percent of blacks with perceived group threat from blacks observed in the bivariate analysis became significant ($\beta = -0.013$, SE=0.004, $p<0.01$) after controlling for level-1 and level-2 confounders (i.e. neighborhood’s socioeconomic context). Level-2 factors significantly explained an additional (over that explained by level-1 confounders alone) eight percent, 21 percent, and eight percent of the neighborhood variance in whites’ negative stereotypes, opposition to affirmative action policies and perceived threat, respectively.

For parsimony, results of Models 2, in tables 5, 6 and 7 show only associations between predictors (racial residential segregation, county’s proportion of blacks, and neighborhoods’
proportion of blacks) and the three racial attitudes outcomes, respectively. Associations of level-1 and level-2 confounders with outcomes can be provided upon request.

*The Contact and Threat Theories: Complementary?*

Models 3a and 3b in Tables 5, 6, and 7 included each level-3 predictor (i.e. racial residential segregation in Model 3a and percentage of minority group at the county-level in Model 3b) separately due to high correlations between main predictors (pair-wise Pearson correlation coefficient of Theil Index with percentage of minority group at the county-level=0.745; and pair-wise Pearson correlation coefficient of Exposure Index with percentage of minority group at the county-level =0.738). Models 3a and 3b also included level-2 predictor, percentage of minority group at neighborhood-level, and level-1 and level-2 confounders.

**Racial residential segregation:** Table 5, Model 3a, shows that the inverted-U association between whites’ negative stereotypes against blacks and the 4-category exposure measure remained after neighborhood’s racial context and neighborhood’s socioeconomic contextual indices were added to the model. Compared to whites residing in areas of extremely low exposure, whites in areas of very low exposure held higher levels of negative stereotypes; however, compared to whites residing in areas of extremely low exposure, whites residing in either areas of low exposure, and moderately low exposure held lower levels of negative stereotypes, respectively. Chi square test of independence showed that the overall significant difference in the effect of each category and the outcome compare to the reference group (Chi-Square=25.5; df=3; p-value=<0.0001) remained after controlling for level-1 confounders, level-2 confounders and neighborhood’s racial context. The significant differences in negative stereotypes between whites residing in areas of extremely low exposure compared to those
residing in areas of *moderately low exposure* ($\beta = -0.562$, SE=0.208, p<0.05) remained. In addition, differences in negative stereotypes between whites residing in areas of *extremely low exposure* compared to those residing in areas of *very low exposure* ($\beta = 0.213$, SE=0.065, p<0.01) became significant. The significant effects of a neighborhood’s racial context on whites’ negative stereotypes against blacks at level-2 continued ($\beta = -0.005$, SE=0.002, p<0.01) in the presence of the level-3 racial residential segregation contextual variable. Table 5, Model 3b, continued to show no significant effects of percent blacks at the county-level after adding neighborhood’s racial context and neighborhood’s socioeconomic contextual indices.

Tables 6 and 7, Model 3a, continued to show no significant associations between the Theil Index and affirmative action policies, and between the 4-category of Exposure and perceived group threat after controlling for level-1 and level-2 confounders, and neighborhoods’ racial context. Model 2, in Tables 6 and 7, continued to show a statistically and significant effect of neighborhood’s racial context on whites’ affirmative action ($\beta = -0.001$, SE=0.002, p<0.0001), and perceived group threat ($\beta = -0.012$, SE=0.004, p<0.01) after adding the index of racial residential segregation in Tables 6 and 7 respectively.

**Minority groups’ size:** Model 3b in Tables 5, 6, and 7 shows models that include percent blacks at both the county and neighborhood-level areas. These models show that the statistically non-significant associations between county’s proportion of blacks and the three outcomes continued; and that the statistical significance of the association of neighborhoods’ proportion of blacks with the three outcomes also remained. Associations between neighborhoods’ proportion of blacks and whites’ negative stereotypes ($\beta = -0.006$, SE=0.002, p<0.0001), opposition to affirmative action policies ($\beta = -0.020$, SE=0.002, p<0.0001) and perceived group threat ($\beta =$-
0.014, SE=0.004, p<0.001) continued to be statistically significant after adding blacks’ size at
the county-level in Tables 5, 6 and 7, respectively.
Table 5. Whites' Negative Stereotypes against Blacks: Hierarchical Regressions

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<th>Confounders</th>
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<th>Model 1b†</th>
<th>Model 2‡†</th>
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† After controlling for potential confounders: gender, age, marital status, political party, religious attendance, and city of residence
‡‡ After controlling for potential Level-1 confounders (gender, age, marital status, political party, religious attendance, and city of residence) and Level-2 confounders (Neighborhood Affluence and Stability)
P<0.10 †; P<0.05 ‡; P<0.01 **; P<0.001 ***
Table 6. Whites’ Opposition to Affirmative Action Policies to Benefit Blacks: Hierarchical Regressions

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<tr>
<td>Level 2 Neighborhoods [N=410]</td>
<td>0.267</td>
<td>641.0</td>
<td>&lt;.0001***</td>
<td>0.177</td>
<td>583.4</td>
<td>&lt;.0001***</td>
<td>0.179</td>
</tr>
<tr>
<td>Level 3 Counties [N=20]</td>
<td>0.017</td>
<td>163.4</td>
<td>&lt;.0001***</td>
<td>0.090</td>
<td>53.8</td>
<td>&lt;.0001***</td>
<td>0.081</td>
</tr>
<tr>
<td>Neighborhoods Intraclass correlation (%) ICC</td>
<td>7.3%</td>
<td>5.5%</td>
<td>5.5%</td>
<td>5.5%</td>
<td>3.8%</td>
<td>3.8%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Variance Explained (PCV=proportional change in variance)</td>
<td>Ref</td>
<td>33.7%</td>
<td>33.0%</td>
<td>33.0%</td>
<td>54.3%</td>
<td>54.3%</td>
<td>54.3%</td>
</tr>
<tr>
<td>Variance To be Explained</td>
<td>Ref</td>
<td>66.3%</td>
<td>67.0%</td>
<td>67.0%</td>
<td>45.7%</td>
<td>45.7%</td>
<td>45.7%</td>
</tr>
<tr>
<td>Counties Intraclass correlation (%) ICC</td>
<td>5.9%</td>
<td>2.8%</td>
<td>2.5%</td>
<td>2.7%</td>
<td>3.3%</td>
<td>3.3%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Variance Explained (PCV=proportional change in variance)</td>
<td>Ref</td>
<td>58.6%</td>
<td>62.5%</td>
<td>60.3%</td>
<td>51.7%</td>
<td>51.7%</td>
<td>51.7%</td>
</tr>
<tr>
<td>Variance To be Explained</td>
<td>Ref</td>
<td>41.4%</td>
<td>37.5%</td>
<td>39.7%</td>
<td>48.3%</td>
<td>48.3%</td>
<td>48.3%</td>
</tr>
<tr>
<td>-2log Likelihood</td>
<td>10776.6</td>
<td>10777.7</td>
<td>10737.8</td>
<td>10737.8</td>
<td>10737.3</td>
<td>10737.3</td>
<td>10737.3</td>
</tr>
</tbody>
</table>

† After controlling for potential confounders: gender, age, marital status, political party, religious attendance, and city of residence
†† After controlling for potential Level-1 confounders (gender, age, marital status, political party, religious attendance, and city of residence) and Level-2 confounders (Neighborhood Affluence and Stability)

P<0.10 *; P<0.05 **; P<0.01 ***

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### Table 7. Whites' Perceived Group Threat of Blacks: Hierarchical Regressions

<table>
<thead>
<tr>
<th></th>
<th>Null Confounders</th>
<th>Model 1a†</th>
<th>Model 1b†</th>
<th>Model 2††</th>
<th>Model 3a††</th>
<th>Model 3b††</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \beta )</td>
<td>SE</td>
<td>p-value</td>
<td>( \beta )</td>
<td>SE</td>
<td>p-value</td>
</tr>
<tr>
<td><strong>Intercept</strong></td>
<td>5.580</td>
<td>0.168</td>
<td>&lt;.0001</td>
<td>6.003</td>
<td>0.291</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td><strong>County-Level Predictors of Racial Context</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposure to Blacks at County level 4 categories</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extremely Low [1.2-7.5]-Ref</td>
<td>0.347</td>
<td>0.227</td>
<td>0.145</td>
<td>-</td>
<td>-</td>
<td>0.410</td>
</tr>
<tr>
<td>Very Low [7.6-13.9]</td>
<td>0.077</td>
<td>0.277</td>
<td>0.785</td>
<td>-</td>
<td>-</td>
<td>0.304</td>
</tr>
<tr>
<td>Low [14.0-20.3]</td>
<td>-0.438</td>
<td>0.318</td>
<td>0.188</td>
<td>-</td>
<td>-</td>
<td>-0.051</td>
</tr>
<tr>
<td>Percent Black</td>
<td>-</td>
<td>-0.006</td>
<td>0.007</td>
<td>0.396</td>
<td>-</td>
<td>0.002</td>
</tr>
<tr>
<td><strong>Neighborhood-Level Predictor of Racial Context</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent Black</td>
<td>-</td>
<td>-</td>
<td>-0.013</td>
<td>0.004</td>
<td>0.001</td>
<td>-0.012</td>
</tr>
<tr>
<td><strong>Random Part-Variance Components</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 2 Neighborhoods [N=259]</td>
<td>0.279</td>
<td>302.3</td>
<td>0.057</td>
<td>0.214</td>
<td>277.4</td>
<td>0.055</td>
</tr>
<tr>
<td>Level 3 Counties [N=17]</td>
<td>0.288</td>
<td>66.6</td>
<td>&lt;0.001</td>
<td>0.050</td>
<td>26.1</td>
<td>0.055</td>
</tr>
<tr>
<td>Neighborhoods Intraclass correlation (ICC) (Proportion of variance explained)</td>
<td>6.5%</td>
<td>5.8%</td>
<td>5.8%</td>
<td>6.2%</td>
<td>5.4%</td>
<td>5.1%</td>
</tr>
<tr>
<td><strong>Variance To be Explained</strong></td>
<td>Ref.</td>
<td>21.4%</td>
<td>23.3%</td>
<td>16.1%</td>
<td>28.9%</td>
<td>33.6%</td>
</tr>
<tr>
<td>Counties Intraclass correlation (ICC) (Proportion of variance explained)</td>
<td>6.7%</td>
<td>1.3%</td>
<td>0.9%</td>
<td>0.6%</td>
<td>0.0%</td>
<td>0.7%</td>
</tr>
<tr>
<td><strong>Variance To be Explained</strong></td>
<td>Ref.</td>
<td>82.6%</td>
<td>99.9%</td>
<td>88.0%</td>
<td>92.5%</td>
<td>99.9%</td>
</tr>
</tbody>
</table>

-2log likelihood: 4528.2

† After controlling for potential confounders: gender, age, marital status, political party, religious attendance, and city of residence
†† After controlling for potential Level-1 confounders (gender, age, marital status, political party, religious attendance, and city of residence) and Level-2 confounders (Neighborhood Affluence and Stability)
P<0.10 †; P<0.05 *; P<0.01 **; P<0.001 ***
DISCUSSION AND CONCLUSIONS

The major goal of this study was to examine the complex relationships between racial contexts and whites’ racial attitudes toward blacks by testing assumptions of contact and threat theories, at both the county and neighborhood level. I explored this by testing the simultaneous effects of racial contexts at two distinct geographic levels using a multilevel approach to properly account for the effects of context; and by controlling for socioeconomic context when assessing for the effects of racial context on whites’ attitudes. Overall, this paper advances the literature by examining associations between racial residential segregation and whites’ negative attitudes against blacks; and by the simultaneous examination of associations between racial context – defined at two distinct geographic levels, and whites’ racial attitudes.

First, I want to point to the low pair-wise Pearson correlations (refer to Table 2) among the three attitude outcomes which suggest the existence of three different concepts or attitudes being captured by the “stereotypes,” “affirmative action” and “group threat toward blacks” variables. Attitudes are said to have a value-expressive function and an instrumental function (Maio and Olson 2000; Maio and Olson 2000). Stereotypes can be described as attitudes having a value-expressive function. Stereotypes are cognitive components of prejudice that refer to beliefs about attributes of another group, specifically beliefs about the personality traits of group members (Dovidio, Glick et al. 2010). By derogating the out-group, members of the in-group assert their groups’ value. On the other side, “group threat” attitudes may be defined as having an instrumental function. Zero-sum attitudes justify a sense of entitlement to resources and/or advantageous positions over other groups (Bobo 2004). Some authors also argue for the capacity of attitudes to express ideologies –clusters of related values and attitudes. For example, “liberal ideologies reflected in attitudes toward universal rights and ‘social justice,’ and conservative
ideologies reflected in self-enhancement and individualistic values” (Thomsen, Lavine et al. 1996). Attitudes toward affirmative action would fall into the latter classification. Moreover, the models presented in this chapter showed contrasting differences among whites’ racial attitudes varying not only by attitude itself (i.e. outcomes), but also by significance of predictors. In effect, few commonalities were found among the three attitude domains measured (i.e. negative stereotypes, perceived threat, and ethnic/racial policy). In terms of predictors, while an inverted-U association was observed in crude models between both the Exposure Index and whites’ negative stereotypes, and the Exposure Index and perceived group threat toward blacks, only the Theil Index was negatively and significantly associated with whites’ opposition to affirmative action policies. Next, these findings are discussed in line with the study’s hypotheses.

*Whites’ Racial Attitudes and Racial Context at the County-Level*

**Racial residential segregation**

At the county-level and in crude models, threat theory expectations were supported only in associations of the Theil Index with opposition to affirmative action policies. The contact theory expectations were supported only in associations of the Exposure Index with blacks’ negative stereotypes. However, after controlling for level-1 confounders and testing for non-linearity, (1) the association of the Theil Index with opposition to affirmative action policies became statistically not significant; therefore, not supporting the expectations regarding the threat theory. And (2), the association of the Exposure Index with blacks’ negative stereotypes became non-linear which added a level of complexity not easily explained by either the contact or threat theories.
Results of crude associations of racial residential segregation with whites’ attitudes toward blacks indicate that different dimensions of county racial residential segregation are differently associated with the three attitudes measured in this chapter in crude models. The significant and negative association of the Theil Index with opposition to affirmative action policies, and the significant and negative associations of the Exposure Index with negative stereotypes against blacks provide additional validation of the multi-dimensionality of the three racial attitudes measures used in the analysis. The significant and negative association of the Theil Index with whites’ opposition to affirmative action policies, which supports expectations of the threat theory, may be related to whites’ perceptions of work and educational resources as a zero-sum competition in which increased opportunity for blacks necessarily means decreased opportunity for whites (Thurow 1987; Arriola and Cole 2001). Studies have shown that whites support policies that benefit minorities as long as those policies do not reduce their opportunities to access the same benefits (Arriola and Cole 2001; Lowery, Unzueta et al. 2006). In line with expectations of the threat theory, higher levels of whites’ segregation from any minority group (i.e. higher Theil indices) may provide a sense of security for educational and work related resources available at the county-level; thus, the lower levels of opposition to affirmative action policies among whites residing in counties with higher Theil indices. Whereas the significant and negative association of the Exposure Index with whites’ negative stereotypes against blacks, which supports expectations of the contact theory, aligns with the social dynamic involved in the process of stereotype formation (Macrae, Stangor et al. 1996). The significant and negative associations of the Exposure Index with whites’ negative stereotypes against blacks, i.e., reduction of blacks’ negative stereotypes with greater inter-group exposure, suggest that information acquired through inter-group exposure is relevant to the process of inter-groups
relations. Greater inter-group exposure provides greater opportunity to establish direct contacts with members of an out-group which, in turn, may disconfirm false beliefs commonly held among members of various groups by increasing the knowledge and information about members of out-groups (Pettigrew 1998; Pettigrew and Tropp 2006).

Second, after controlling for level-1 confounders, only the association of the Exposure Index with negative stereotypes against blacks remained. This association was, however, non-linear. The inverted U-shape association between whites’ stereotypes against blacks and the 4-categorical exposure variable (please refer to Results Section for details of these association) might suggest a potential transition category. Some studies report a negative curvilinear relation in which prejudice is reduced until minorities reach a certain percentage and then it increases again (Fossett and Kiecolt 1989; Taylor 1998; Wagner, Christ et al. 2006). However, no studies were found reporting negative curvilinear associations of an index of racial residential segregation with a racial attitude outcome. The lower negative stereotypes held by whites residing in counties with extreme low exposure to blacks, compared to whites in areas of very low exposure, may be related to the extremely low visibility of blacks in these areas. However, this beneficial effect of whites greater segregation levels on their negative stereotypes held against blacks reverses, as evidence in the lower levels of negative stereotypes observed among whites residing in counties with low and moderately low levels of exposure to blacks compared to those in extremely low exposure areas. This reversal does not align with the threat theory expectations, and, on the contrary, it supports assumptions of the contact theory. However, it is not clear whether whites’ lower negative racial attitudes are the result of higher opportunity for exposure and interaction with blacks in the counties where they reside, as the contact theory states; or whether whites residing in counties with greater exposure to blacks chose to live there
because they value diversity and therefore express fewer negative stereotypes. The cross-sectional nature of this study’s data does not allow examining either possibility.

The inverted-U association between the 4-category variable of exposure and whites’ negative stereotypes may also be related to the uneven representation of the metro areas in the 4-category variable of Exposure (i.e. Detroit, Boston and Atlanta are present in the extremely low; Detroit, Los Angeles, Boston and Atlanta are present in the very low; and only Atlanta is present in both the low and moderately low Exposure categories). This uneven distribution of metro areas in the 4-category exposure variable could have led to poor estimates and instability in the computed associations. Hence, the inverted-U associations observed in all bivariate and multivariate associations might have been driven by contextual and cultural characteristics of the metro cities more than by processes related to the magnitude of racial residential segregation represented in the 4-category Exposure variable. For instance, despite the hypersegregation (i.e. high values on all five dimensions of racial residential segregation) of blacks and whites in Atlanta (Wilkes and Iceland 2004), metro Atlanta has also ranked high on residents living on integrated blocks (Quinn and Pawasarat 2003). In 2000, Metro Atlanta had one of the highest proportions of whites living on blocks that were at least 20% black and 20% white (Quinn and Pawasarat 2003). The higher levels of black-white integration in Atlanta, compared to national standards, despite the overall high levels of racial residential segregation suggest that particular inter-racial dynamics may be present in Atlanta’s metro area context which in turn may be associated with whites’ more positive racial stereotypes. Whites from Atlanta, in this analysis, held the most positive stereotypes toward blacks (M=-0.24; SD=1.13; p<0.0001) compared to Boston (M=-0.19; SD=1.00), LA (M=-0.02; SD=1.03), and Detroit (M=0.15; SD=0.91) [scores ranging from -3 to 3 with highest scores being the most negative stereotypes]. Future studies
should explore additional historico-political factors, in addition to geographic ones, that may influence inter-group dynamics and processes of racial residential segregation.

Minority groups’ size

Threat theory’s expectation that a larger proportion of blacks where whites reside is associated with whites’ negative attitudes against blacks was not supported—as evidenced by the lack of statistical significance in all bivariate and multivariate associations. Unlike previous studies that tested the threat theory on large geographic areas such as countries, Metropolitan Areas, and states (Quillian 1996; Taylor 1998; McLaren 2003; Oliver and Wong 2003), this study did not find significant associations between percent black and anti-black attitudes at the county-level. These studies, however, did not apply proper methods to control for the clustering of the data which might have led to under estimation of standard errors (Oakes 2004). Secondly, data included in the present analysis represent only four metropolitan areas, which limit the generalizability of results and comparability with other studies. One more possible reason for the contradicting results may be related to black and white residential distribution. Higher levels of black-white residential segregation have been associated with larger percentages of blacks in an area (Iceland, Weinberg et al. 2002). If blacks represent a threat to whites in large numbers, as threat theory would hypothesize, whites may attempt to minimize and control this by isolating themselves residentially. Thus, despite a large presence of minorities at the county-level, whites do not perceived them as threatening because segregation preserves their privileges and access to better quality of social and economic resources. Overall percentages of blacks at the county-level might not represent a real threat to the economic or cultural interests of whites (Taylor 1998; Oliver and Mendelberg 2000; Dixon 2006). The cross-sectional nature of the data of this analysis
does not allow testing this last possibility; future studies using longitudinal data sets should examine whether whites’ residential segregation indeed reduces group threat perceptions in areas where minority groups are large.

The non-linear relationship between the Exposure Index of racial residential segregation and whites’ negative stereotypes against blacks presented a level of complexity not easily explained by either the contact or threat theories. Future studies should examine the effects of racial residential segregation on whites’ attitudes employing national data sets that allow for more robust results and generalized results. The inclusion of only four metropolitan areas in this study limits not only the generalizability of results, but also its robustness. However, the general finding of no significant associations of proportion of blacks at the county-level with any of the three attitude outcomes, and the contrasting significant associations of either the Theil or the Exposure Indices with the outcomes suggests that racial residential segregation is an important contextual variable that deserves further investigation when examining racial attitudes. This finding highlights the need for research on whites’ racial attitudes to go beyond simple definitions of racial context, such as the size of the minority population. It is essential to take into account other relevant racial contextual information such as the geographic distribution of racial groups, particularly in the United States where levels of racial residential segregation are very elevated (Rocha, Longoria et al. 2011).

Whites’ Racial Attitudes and Racial Context at the Neighborhood-Level

The models consistently showed the influential role of the percent black at the neighborhood-level in reducing negative attitudes among whites. This finding supports expectations from the contact theory. Larger proportions of blacks in white neighborhoods had a
positive impact on reducing whites’ stereotypes against blacks, opposition to affirmative action policies, and perceived threat; even after controlling for socioeconomic factors at the neighborhood level, and potential confounders at level-1. These results lend support to the theoretical expectation that whites residing in more mixed neighborhoods have greater opportunities for inter-group contact that, in turn, may be associated with lower anti-black attitudes. Overall, few studies have tested the contact and threat theories at smaller geographic areas, such as neighborhoods. Only recently has interest in the effects of racial context at the neighborhood-level started to flourish. One study using the MCSUI data (Oliver and Wong 2003) reported higher negative attitude levels toward minority out-groups among blacks, Latinos and whites to be significantly associated with larger percentages of in-group members living in a neighborhood (defined as the block group). In line with findings of this study, the authors reported higher negative attitude levels against blacks among whites residing in neighborhoods with larger percentages of white populations (Oliver and Wong 2003). However, the authors did not use multi-level analysis to control for inter-correlations among participants residing in the same geographical unit. Additionally, the authors used block-groups to define neighborhoods rather than tracts, as defined in this analysis.

Although our data do not allow for further examination of the potential mechanism though which neighborhood context matters, our results do show how neighborhood’s socioeconomic contexts influenced whites’ attitudes toward blacks. Beta coefficients from Level-2 confounders (available upon request) showed, in line with economic threat principles, lower perceived threat from blacks in more affluent neighborhoods. In contrast, higher levels of stability were associated with higher levels of negative stereotypes and lower support for affirmative policies that benefit blacks. Consistent with the “revised ideological refinement” (Wodtke 2012:101),
whites located at higher socioeconomic levels are more likely to be aware of minority’s experiences with discrimination; nonetheless, they report lower support for affirmative action policies that can potentially decrease racial inequity, in part created by institutional practices of discrimination. Whites in higher strata use their influential positions to “deflect the redistributive demands of subordinate groups” (Wodtke 2012:101) by reinforcing dominant ideologies that foster individualism and meritocracy. These ideologies extend to the rest of society through social institutions, such as the education system, thus reinforcing values of individuality and meritocracy even among members of minority groups themselves (Wodtke 2012).

*The Contact and Threat Theories: Complementary?*

Results from Models 3a and 3b in Tables 5, 6, and 7 continued the trends observed in Models 1 and 2. The findings confirmed the expectations of Contact Theory at the neighborhood-level, whites residing in neighborhoods with larger percentages of blacks reported lower negative stereotypes, opposition to affirmative action policies, and perceived group threat from blacks. These effects remained even after racial context variables (i.e., racial residential segregation and percent blacks at the county-level) were inserted in models 3a and 3b. As some authors have suggested, neighborhoods are smaller areas, compared to metropolitan areas, cities or states, in which inter-group contact is more likely to happen (Ihlanfeldt and Scafidi 2002; Dixon 2006; Barth, Overby et al. 2009). In addition, the similarity of backgrounds of persons sharing neighborhoods may also stimulate development of closer and more intimate relations (Pettigrew 1998; Ihlanfeldt and Scafidi 2002; McLaren 2003; Dixon 2006; Barth, Overby et al. 2009). Results from this study provide support to these arguments about the effects of whites-blacks inter-group relations.
At the county-level, the inverted-U shaped association between the 4-categorical variable of whites’ residential exposure to blacks continued to be significantly associated to whites’ negative stereotypes against blacks. This outcome leads to inconclusive results about expectations of threat theory dynamics occurring at larger geographic levels. As previously stated, it is possible that this inverted-U shaped association is related to a city’s contextual factors rather than residential segregation dynamics per se. Future studies should examine the complementary property of the contact and threat theories using national datasets that allow for more robust and generalized results.

The use of Hierarchical Linear Modeling methods to properly account for the nested nature of the data in this study not only provided a higher level of confidence in the results, but also allowed identifying interesting contextual and individual variations, as evidenced in the amount of variance explained, at the neighborhood and county-levels, by the variables included in the three models. Although, level-1 confounders significantly accounted for a considerable amount of variance at both neighborhood- and county-levels in all three models, there was noteworthy variation in the amount of explained variance accounted for level-1 confounders, level-2 predictor and confounders, and level-3 predictors. For instance, while level-1 confounders significantly explained 55 percent and 89 percent of the variance found at the county- and neighborhood-level, respectively, in whites’ negative stereotypes toward blacks; and 59 percent and 38 percent of the variance found at the county- and neighborhood-level, respectively, in whites’ opposition for affirmative action policies; level-1 confounders were only marginally significant in explaining 83 percent and 21 percent of the variance found at the neighborhood- and county-level in whites’ group threat toward blacks. Similar variations were observed with contextual predictors: while racial residential segregation (i.e. level-3 contextual predictor) was
statistically not significant in explaining any of the variance between counties in whites’ perceptions of group threat; racial residential segregation significantly explained 45 percent of the variance found at the county-level in whites’ stereotypes toward blacks, and, contrastingly, a low four percent of the variance found at the county-level in whites’ affirmative action policies. In a similar manner, neighborhood’s racial context (level-2 contextual predictor) was no significant in explaining any of the variance found between neighborhoods in whites’ perceptions of group threat; but it significantly explained eight percent of the variation found at the neighborhood level in whites’ stereotypes toward blacks, and it explained 21 percent of the variation found at the neighborhood level in whites’ affirmative action policies. The variability in variance explained by the individual and contextual variables included in the three models examined in this study supports the existence of three different concepts or attitudes captured by the “stereotypes,” “affirmative action” and “group threat toward blacks” variables. The models’ variations in explained variance further suggest distinct processes underlying the development and stability of the three racial attitudes. Future studies should explore how contextual and individual’s characteristics differentially influence individual’s racial attitudes, as these differential patterns may become potential entry points for policy action, and prevention and intervention practices. For instance, results from this study point to the importance of racial residential patterns in whites’ stereotypes toward blacks, while larger proportions of blacks in whites’ neighborhoods are more relevant in weakening opposition to affirmative action policies that benefit blacks. In addition, the marginally significant effects of level-1 confounders on whites’ perceived group threat of blacks and the lack of significance in the variance explained by neighborhood- and county-level variables on whites’ perceived group threat suggest that additional factors play a significant role in the processes of whites’ threat perceptions of blacks.
Whites’ perceptions of group threat toward blacks may be more influenced by national discourses set in place by politicians and the media, both greatly influenced by elites’ interests, than by tangible economic or political threat (Sniderman and Tetlock 1986; Sidanius, Pratto et al. 1996; Sears, Laar et al. 1997). Future studies on racial attitudes will be enriched if, in addition to racial contexts at different geographic levels, national discourses occurring at different time periods are also examined.

LIMITATIONS AND FUTURE STUDIES

The present study is characterized by several limitations. Most notably, the findings are based on cross-sectional survey data, which does not allow for causal direction testing between the predictor and outcome variables in this study. Therefore cannot rule out the possibility of reverse causation. It is possible that the positive influence of inter-group contact observed in the blacks models are rather a reflection of more tolerant whites with more positive attitudes toward minorities who may be more prone to move into mixed neighborhoods. However, using the MCSUI data, some studies have shown that whites who have greater neighborhood contact with blacks have higher tolerance for black neighbors (Ihlanfeldt and Scafidi 2002). These authors control for the endogeneity of contact by using a generalized instrumental variables estimator of an ordered probit model. Similarly, it has been shown that after controlling for the endogeneity of whites’ residential preferences, whites’ preference for living in white neighborhoods play a role in the proportion of blacks residing in neighborhoods chosen by whites in the MCSUI study (Ihlanfeldt and Scafidi 2004). These two studies provide some support for the findings in this study that white’s inter-group contact with blacks have the potential effect of reducing negative racial attitudes that deter whites from wanting to live in mixed neighborhoods. In addition, to address the risk of reverse causation, I followed previously used techniques to control for
potential self-selection bias. I used objective measures of group threat (i.e. proportion of minority members and probability of contact given by racial residential segregation patterns), and/or measures that do not reflect intimate or very close relationships or form of contact, such as friendships or confidants (Dixon 2006). Future studies, however, should use longitudinal data to better capture the potential role of whites’ racial attitudes on levels of segregation. In addition, further studies are needed to examine the generalizability of these findings to other geographic regions, preferably employing national datasets.

Overall, these findings revealed differences in the factors influencing whites’ racial attitudes toward blacks that were particularly clear at the neighborhood-level. The blacks’ models revealed the importance of residential, racial and socioeconomic context for the construction of whites’ racial attitudes toward blacks. Future studies should further examine the effects of racial residential segregation employing national data sets that allow for more generalized results and robust findings. In addition, little is known about whites’ attitudes and ideologies toward other groups, in addition to blacks. A particular emphasis on white’s attitudes toward Latinos, the largest minority group in the United States, and immigrants is greatly needed. The United States is increasingly a multiracial country, and research on inter-ethnic/racial relations will benefit from expanded knowledge on how various groups may and do establish and maintain harmonious relations. Research on racial attitudes have focused on whites’ construction of blacks; therefore, little is known about how other ethnic/racial groups are socially constructed, and how these differences or similarities influence inter-group relations and multiculturalism (Link and Oldendick 1996). Understanding the social construction of groups and the formation of out-group stereotypes and other negative ethnic/racial attitudes has important implications for the successful passing and implementation of social policies that support the more equal
distribution of resources and seek to reduce existing racial inequities (Schneider and Ingram 1993).

These limitations notwithstanding, this study shows the distinctive underlying factors, both at the individual and contextual (geographic) levels, relevant in the maintenance of a number of racial attitudes that negatively affect inter-group dynamics; and impose additional barriers to minority’s group access to social, economic and political resources. This study also highlights the need for future studies to examine the influence of racial residential segregation on whites’ racial attitudes. And finally, this study extends the literature on racial attitudes, inter-group relations, as well as the racial residential segregation and neighborhood literatures by integrating knowledge gained from the segregation and neighborhood literatures to simultaneously test hypotheses from contact and threat hypotheses.
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CHAPTER 2: SOCIAL STRUCTURE AND BLACKS’ SELF-ESTEEM: CONTEXTUAL RACIAL STEREOTYPES AND THE MEDIATING ROLE OF OBJECTIVE AND SUBJECTIVE NEIGHBORHOOD FACTORS
INTRODUCTION

The concept of self-esteem has been broadly theorized in social and psychological research, particularly due to its hypothesized connections with a number of social problems (Owens and Styker 2001). High self-esteem is proposed to moderate the effects of lifetime stressors; in this line, some studies have reported that people with high self-esteem experience less psychological distress compared to those with lower self-esteem, whom are less able to cope effectively with life stressors (McDonald and Gynther 1965; Linville 1987; Thoits 1992; Thoits 1994). Conversely, individuals with low self-esteem are said to be more vulnerable to life stressors and thus more at risk of developing certain mental health conditions, such as depression and anxiety. Individuals with low self-esteem may also more likely to engage in risky and deviant social behaviors in search of status and recognition (Owens and Styker 2001). Studies of blacks’ self-esteem have shown significant associations between self-esteem and various behavioral and health measures. Negative associations have been reported between blacks’ self-esteem and the frequency of smoking (Botvin, Baker et al. 1993) and drinking (Rodney and Rodney 1996), symptoms of depression (Caldwell, Antonucci et al. 1997), and anger management (Johnson and Greene 1991).

There has been considerable work on blacks’ self-esteem with early research focused on racial differences between blacks and whites (Zeigler-Hill 2007), and more recent work focused on self-esteem as a predictor or a moderating/mediating factor of outcomes such as academic performance (Connell, Spencer et al. 1994; Baumeister 2003) and health related outcomes (Johnson and Greene 1991; Botvin, Baker et al. 1993; Rodney and Rodney 1996; Caldwell, Antonucci et al. 1997). Yet, little is known about self-esteem as an outcome. Likewise, the relevance of macro-structural factors for blacks’ self-esteem has seldom been studied. In general,
and despite the noted relevance of social macro-structural factors for the development of self-esteem (Rosenberg and Pearlin 1978; Rosenberg 1979; Gecas and Schwalbe 1983), few studies have empirically explored this link. This chapter adds to this line of work by examining the direct effects of racial stereotypes on blacks’ self-esteem, and their indirect effects through objective neighborhood’s socioeconomic and demographic factors and subjective perceived neighborhood. The main purposes of this paper are, therefore, to examine how whites’ racial stereotypes of blacks, a socio cultural factor, influence the level of self-esteem among Blacks and to explore the role of neighborhood factors as possible pathways in this relationship.

### The Concept of Self-Esteem

Although there is not a unified theory of self-esteem, Morris Rosenberg’s work provides an important framework for examining the concept of self-esteem. With theoretical constructs from cognitive social psychology and symbolic interactionism, Rosenberg conceptualized self-esteem as both an organizing entity and a process—continually constructing itself through reflected evaluations sustained in daily social interactions (Rosenberg 1972; Porter and Washington 1982; Elliot 2001). During childhood, the self develops through the images the child sees of herself/himself offered by significant others (i.e., reflected appraisals); as maturation continues and abstraction process are improved, the child is able to incorporate and synthesize images of himself/herself offered by more diverse others in her/his social context (Elliot 2001). As an organizing entity and motivating factor, the self actively selects reference points and/or appraisals of others that will enhance or support a positive image (Rosenberg 1972; Porter and Washington 1982).

### Dimensions of the Self

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Contrary to early theories that defined the self as an individual trait, the often conflicting results reported by researchers suggested that the nature of the self is rather complex (Wells 2001). In order to better comprehend the nature of the self, some authors suggest taking account of some of its dimensions, including the (a) multiplexity of the self, (b) variations in self-regard, (c) multiple sources of self-evaluation and motivations affecting the self, and (d) the contextual nature of the self (Wells 2001).

The multiplexity of the self refers to the multiple roles individuals play in society, “rather than only a single, unitary sense of self-esteem, self-evaluation involves many different images, perceptions, identities, and cognitions that vary across situations (Wells 2001:303)”. Two lines of thought have addressed the multiplexity of the self, a psychological perspective that sees the self as specific, situated and multiple; thus, levels of self-esteem vary depending on the role and context in which self-esteem is being measured. A more cognitive perspective sees the self as a higher-order scheme of cognitions continually constructing a generalized sense of self (Wells 2001). The concept of psychological centrality from Rosenberg’s theory of the self (Rosenberg 1979) suggests that individuals choose, evaluate, and value information obtained from social interactions about their multiple selves based on what is relevant and important to them. Social commitments, personal aspirations, or personal anxieties are factors related to individuals’ psychological centrality (Wells 2001).

Modes of self-regard are related to the way individuals gain knowledge of who they are (i.e., self-concept). Through agency, individuals gain a sense of self-efficacy and self-knowledge by developing and using learned skills to achieve successful outcomes. Processes of self-acceptance and authenticity provide individuals the tools to acquire a sense of worth, appreciation, and moral value, as well as guidance in their quest for existential meaning (Wells 2001).
Among the *multiple sources of self-evaluation and motivations* affecting the self, four principles are considered important in the development of self-esteem: reflected appraisals, social comparisons, self-attributions, and identification. Via reflected appraisals, individuals develop self-awareness and self-evaluation by observing the reactions others have of their behaviors during social interactions. Social comparisons provide reference points for evaluating what is socially valuable and acceptable in the social world. During self-attributions, people engage in introspective examinations in which the person becomes his/her own object of examination. By means of identification, individuals compare themselves to someone highly regarded and valued by them, unlike the process of social comparisons where individuals select others similar to themselves to compare to (Wells 2001).

Various authors emphasize the *contextual nature of the self* (Rosenberg 1973; Rosenberg 1979; Gecas and Schwalbe 1983; Gecas and Seff 1989). As stated by Wells (2001)

“[S]elf-conceptions and self-evaluation always occur as aspects of reflexive behavior taking place within actual social interactions or situations, rather than as independently existing objects. Self-esteem is always, to some degree, grounded in the social contexts and behaviors where the experience of evaluation occurs (Wells 2001:309).” And to better capture the social aspect of the self, House’s theoretical and methodological principles provide an effective method “to explicate social structures as multidimensional phenomena that include a variety of component events and processes through which people are differentiated and by which the material and cultural conditions of their lives are organized (Wells 2001:310”).

**Self-Esteem, Social Structure and the Stratifying Nature of Race**

We develop a sense of what society is and its expectations of us based on the information we process within the contexts in which we live and the social events we experience. Individuals construct the realities of their social worlds by means of continuous interactions with significant individuals and institutions that are part of their daily lives. This active and permanent connection between individuals and society is significantly influenced by the social location
individuals occupy in their society, and by the roles they perform in multiple contexts throughout their lives (Elliot 2001). Social evaluations and the perception that others value you have been hypothesized to have an important role in the development of self-esteem. From this assumption, early researchers (Mead 1934; Cooley 1956) expected that members of minority groups and other marginalized groups would have lower self-esteem.

Given the lower social strata occupied by racial minority groups in most societies, social and psychological perspectives of self-esteem hypothesized lower self-esteem among minorities compared to majority groups. Three social perspectives stand out when examining self-esteem and race associations: the interactionist, social structural, and socialization of personality approaches (Wells 2001). The interactionist approach states that since individuals define themselves by emulating larger society’s values, i.e., reflected appraisals, members of minority groups will have lower self-esteem. Lower self-esteem among minorities are the product of negative representations of their group disseminated by the majority in power through practices such as stereotyping, prejudice, discrimination largely used to restrict their access to society’s resources. The social structural approach hypothesizes lower self-esteem among minority groups as the result of lifetime denied access to opportunities for developing individual’s own potential and the opportunity to develop a sense of efficacy, social worth, and moral value. And the socialization of personality approach postulates that individuals obtain a sense of identity “by internalizing the values, categories, and standards present in their cultural environment (Wells 2001:317).”

In sum, these three social theories have a common pattern of hypothesizing lower self-esteem among members of a minority group—particularly racial groups due to their lower standing in society.
Blacks’ Self-Esteem

Literature reviews on empirical studies of blacks’ self-esteem showed two opposite trends: studies from about 1939 through the late 1960s and early 1970s, presented a pathological image of blacks’ inner life and psychology; while around 1967, studies began showing a more positive image—speculated to be a result of the black Movement (Cross 1981). Studies from the first period promoted the idea of black self-hatred; however, later reviews of this literature showed major flaws that brought into question these conclusions. One of the major issues identified was the lack of differentiation between personal identity (i.e. self-esteem) and reference group orientation (i.e. racial identity) (Clark and Clark 1939; Cross 1985; Imani 1996). According to Imani (1996):

“the self-hatred argument, which would appear to be a personal identity (PI) related hypothesis, was developed on the accumulation of evidence from reference groups orientation (RGO) studies. The irony is that when each of the RGO studies for this period is reviewed, the experimenter clearly specifies in the method section that a blatantly related RGO construct was assessed. In the discussion section, however, the distinction between PI and RGO information is blurred, and the construct self-hatred is injected as if PI and RGO data had been collected or as if it had been established that PI and RGO were highly correlated. Consequently, conclusions about the negative or positive nature of the personal identity of blacks from 1939 to 1960 were highly speculative (Imani 1996:197).”

Studies from this period extend and reinforce a “pejorative perspective” of blacks portrayed in early work from Frazier, who depicted the personal lives of poor black families as structurally and functionally inadequate and characterized by pathology (Cross 1981). In Frazier’s socio-cultural view, the oppression of blacks—first during slavery, then in their rural life in the South, the great migration that followed, racism and poverty experienced, and their relegation to the poorest urban parts of the cities—stripped off family values previously held by their African ancestors. The lack of family values, represented, according to Frazier, in female-centered and families mostly absent of male-figures, was an influential factor associated with the high
poverty rates experienced by blacks (Cross 1981). Lower self-concepts among children reported in early studies were thus expected, given the lack of family values and pathological lives with which blacks had been characterized (Cross 1981).

Studies from the first period were characterized by an experimental design in which a black child is offered both a white and a black doll and asked which she/he likes better. Most of the children stated a preference for the white doll, which was commonly interpreted by the experimenters as a self-hatred behavior. However, many authors later concur that these studies were measuring group identity, not personal identity/esteem as their authors claimed (Cross 1981; Wright 1985; Imani 1996). Black children’s preference for the white doll was not a self-hatred reflection. When choosing one doll over the other, children were not rejecting the black doll. Children in these early experiments were expressing preference for one ethnic group over another, thus they were simply reflecting the values of the larger society, children were reflecting the greater value placed in white groups over black ones (Cross 1981; Wright 1985; Imani 1996).

Later developments in social psychology, particularly methodological and theoretical sophistication brought by Morris Rosenberg and better developed self-esteem inventories, found no support for the self-hatred hypothesis among blacks. In fact, more often than not, results were showing higher rates of self-esteem among black compared to white children, or no differences at all (Foster and Perry 1982; Porter and Washington 1989; Imani 1996). Rosenberg’s work with 2,600 children from Baltimore schools (1972) provides one of the strongest empirical examples of evidence against the black self-hatred hypothesis. Two relatively recent meta-analytic studies (Gray-Little and Hafdahl 2000; Twenge and Crocker 2002) confirmed these results and reported higher scores for black than for white children, adolescents, and young adults. The authors also
reported that the direction and magnitude of racial differences was influenced by factors such as participants’ age, socioeconomic status, and by characteristics of the measuring instrument.

The accumulated evidence showing higher levels of self-esteem among blacks led some authors to revise some of their original self-esteem principles. To make sense of the new evidence, Rosenberg proposed the following revisions. First, for self-reflective appraisals to be internalized, individuals need to (1) be aware of these appraisals, (2) be in agreement with them, (3) consider them relevant, and (4) these appraisals should have significance in their lives (Jackson and Lassiter 2001). In terms of awareness, despite adolescents’ and adults’ awareness of society’s appraisals toward their group, it is hypothesized that minority groups rely more on cognitive strategies (choosing to internalize only what is consistent with positive images of their own self-concept) than on reflected-appraisals to protect themselves from negative environments.

Similarly, although minority groups are aware of negative concepts toward their group, they may not agree with those generalized conceptions society holds against them, and/or they may choose to consider them not relevant, thus potentially not affecting the development of their self-concept. In addition, given the conflicting relationships between majority and minority groups, and guided by the concept of psychological centrality –other’s appraisals are relevant to individuals’ self-concepts to the extent that the person/group providing these appraisals are important to the person, it is reasonable to assume that minority groups would not easily agree with the majority’s negative evaluations of their groups (Jackson and Lassiter 2001). Some studies have shown that in the development of blacks’ self-esteem, the evaluations coming from family and community members from church are more important than evaluations coming from more distant society members, such as teachers (Hoelter 1982).
It is not clear yet, however, if and how negative appraisals held by the larger society against blacks affect their self-esteem. Some studies have shown, for instance, that being the victim of prejudice, discrimination, and stigma is associated with lower self-esteem and psychological well-being (Yinger 1986; Diaz, Ayala et al. 2001; Swim, Hyers et al. 2001; Maka, Poonb et al. 2007; Williams, Neighbors et al. 2008; Williams and Mohammed 2009). Similarly, a higher frequency of reported perceived discrimination was found to be significantly associated with lower levels of self-esteem among blacks (Yinger 1986). However, no studies empirically examine the aggregated effect of negative appraisals of blacks on their self-esteem. This study fills this gap and adds to the literature on blacks’ self-esteem by studying the associations of whites’ stereotypes toward blacks with blacks’ self-esteem.

Social Ideologies and Cultural Values

Socio-cultural values, including society’s values and ideologies, are important macro cultural structures powerful enough to play a significant role in the creation and preservation of society’s hierarchical systems and resulting individual’s social standing. Socio cultural values have a role in ascribing social categories (i.e., ethnicity/race, gender, sexual orientation), and associated roles, places, and worth in society. Socio-cultural values have a very influential role in defining what is valuable human action and behavioral outcomes. As part of society’ social structure, whites have the power to assign social place to minority groups. Racial stereotypes is one mechanism through which systems of stratification are determined and maintained (Bobo 1999). Guided by common socio cultural values and an interest in maintaining a privileged position, racial stereotypes are propagated to influence distributive decisions at the policy level and decisions affecting social mobility among minority groups (e.g. hiring practices and house
market opportunities unfavorable to minorities) (Schooler 1996; Leon and Snow 2001). In addition to determining access to social and economic resources, social systems of stratification, such as negative stereotypes, create distinctions of social worth among groups (Leon and Snow 2001). In vertical hierarchical systems, like the one in the U.S., negative stereotypes and stigma have the power to create barriers to social mobility for lower strata groups. Vertical hierarchical systems give high worth to social values of individualism and merit based behaviors and outcomes. Merit based and individualistic values rationalize the existence of inequities by placing most of the responsibility on individuals rather than on social institutions. By rationalizing social inequities, members of society may accept and embrace social systems that otherwise will be perceived as unjust and/or prejudiced (Mansyur, Amick et al. 2009). Social institutions and individuals’ beliefs reflect the cultural dimensions of a society; they are powerful engines with the capacity to relegate certain groups to the margins, based not on objective differences and/or capacities, but on subjective definitions of difference. Race, a social construct, is an example of the power of socio-cultural values in creating human differences to stratify groups of people and justify unequal treatment (Jones 2000). Similarly, social disadvantages such as poverty, in large part created by unequal treatment of groups based on race/ethnicity, tend to be attributed to individual causes over institutional ones. Individualistic attributions of poverty are effective in reducing guilty feelings, and they are good strategies for reducing potential collective demands for social change (Leon and Snow 2001; Mansyur, Amick et al. 2009).

Racial Stereotypes

Stereotypes are verbal expressions of a conviction shared in a particular culture and of “common knowledge” that in an over-generalized manner ascribes or denies specific qualities or
behaviors to certain groups or individuals within that social group (Quasthoff 1978; Quasthoff 1989; Wodak and Reisigl 1999). It has been hypothesized that negative stereotypes emerge as part of social ideologies to justify unequal treatment and restrict access to resources and opportunities to certain groups (Phelan, Link et al. 2008). Under this view, negative stereotypes offer cognitive justifications for individual behaviors and institutional policies to give differential treatment to members of certain groups, placing them in disadvantaged positions and limiting their access to social and economic resources (Crocker and Quinn 2000).

Over the last 50 years, national social surveys in the United States have shown a significant change in racial prejudice among whites, in the direction of more supportive attitudes for equal treatment across races and the rejection of blatant forms of prejudice and discrimination. Nonetheless, little change has been observed with regard to whites’ negative stereotypes against other racial/ethnic groups (Krysan 2008). White Americans continue to regard blacks as being lazy, violence-prone, and welfare dependent (Krysan 2008). According to the interactionist approach and social personalization approaches, individuals define themselves and acquire a sense of identity by emulating the larger society’s values; therefore, negative appraisals and stereotypes held against blacks by the overall society have the potential to detrimentally affect their self-esteem. Social structural approaches predict lower levels of self-esteem among blacks due to generations of restricted access to opportunities for developing individuals’ own potential and the opportunity to develop a sense of efficacy, social worth, and moral value. Negative racial and ethnic stereotypes intensify present structures of social inequality and represent a considerable obstacle for social mobility among minorities. Negative ethnic/racial stereotypes reinforce the effects of past discrimination (i.e., redlining, housing covenants, racially targeted federal housing policies, and other forms of discrimination in housing and lending markets).
(Farley, Steeh et al. 1994; Link and Phelan 2001). Studies have shown that negative racial stereotypes play an important role in structuring neighborhood racial composition preferences (Charles 2008), reinforcing processes of residential segregation, and neighborhood social disinvestment (Farley, Steeh et al. 1994; Bobo and Zubrinsky 1996). Through the lens of negative stereotypes, structural disadvantages (e.g., poverty, joblessness, crime, ill health) come to be seen as causes rather than consequences of persistent racial inequality, which in turn continues a cycle of justification and support for negative racial stereotypes (Pager and Shepherd 2008). For instance, lack of infrastructural investment is a way in which negative stereotypes influence the creation and maintenance of social macro-structures that relegate certain groups and deprive them from overall social benefits.

Racial stereotypes held against particular groups can negatively affect their self-esteem by limiting access to structural resources (e.g., employment opportunities, and quality of education and housing), therefore making it more difficult to succeed economically or engage in efficacious behaviors despite efforts invested (Wilson 1987; Williams and Collins 2001). Negative stereotypes can also weaken individuals’ bridging sources of social capital, which in turn limits access to social resources and attainment of society’s fundamental social statuses (Pager and Shepherd 2008). At an individual level, negative stereotypes can lead to discriminatory behaviors that, in addition to restricting socioeconomic mobility among the stereotyped group, can lead to lower levels of self-esteem.

In sum, socio cultural values, reflected through negative stereotypes, is a significant macro-level factor in the creation of environments of concentrated poverty and wealth in which blacks are usually at a disadvantage. The geographic concentration of poverty and wealth in turn influence both the physical environment and the social context where individuals live and
experience social relationships that will, in turn, have an influence on their development of self-esteem.

**Neighborhoods**

Neighborhoods are influential contexts in human development, including psychological well-being and self-esteem (Jason and Robert 2000). Neighborhoods are also critical in determining access to social and material resources and the reproduction of social advantage, factors important for self-esteem enhancement (Furstenberg Jr. and Hughes 1997).

Despite the growing research interest in neighborhood effects, few studies have examined the role of neighborhood socio-demographic and socio-economic contexts on individuals’ self-esteem. Some researchers have examined associations between neighborhood poverty and various outcomes related to self-efficacy, and have reported conflicting results. For instance, no effects were found between neighborhood poverty and African American adolescent perceptions of occupational efficacy (Quane and Rankin 1998), while significant negative associations were reported between higher levels of self-efficacy and neighborhood rates of poverty, unemployment, and receipt of public assistance (Boardman and Robert 2000; Ross 2000; Turley 2002). In terms of global self-esteem, specifically, significant negative associations have been reported between higher self-esteem and neighborhood unemployment rate (Wiltfang and Scarbecz 1990) and neighborhood poverty rate (Haney 2006). Two studies were found that reported significant negative associations between adolescent higher levels of self-esteem and perceived neighborhood poverty (Kaplan 1971) and significant positive associations between higher adult self-esteem and better perceived neighborhood quality (Haney 2006). Out of these studies examining neighborhood-self-esteem associations, Haney (2006) used the MCSUI data to
examine the direct effect of neighborhood poverty levels on self-esteem and the mediating role of perceived neighborhood quality. Unlike Haney (2006), who used poverty rates at the census block group as a main predictor variable, I developed a number of neighborhood socio economic indices using census data at the tract level, and together with individual-level perceptions of neighborhood quality, I used these neighborhood variables to test their mediating role on the associations of a broader structural context (i.e. contextual racial stereotypes at the county-level) with self-esteem.

Research examining associations between neighborhood and individual health (Ellen, Mijanovich et al. 2001; Macintyre, Ellaway et al. 2002; Galea, Rudenstine et al. 2005) hypothesize a number of pathways through which neighborhoods may affect individuals’ physical and psychological health outcomes. Given the associations between self-esteem and individual health, I use theory from this literature to describe two potential pathways through which neighborhoods may affect individuals’ self-esteem: neighborhood institutions and resources and neighborhood-global quality and/or neighborhood’s reputation.

Neighborhood institutions and resources include primary infrastructural elements that can determine environments favorable for the healthy development of self-esteem. Neighborhood infrastructure will determine, for instance, the quality of housing, employment, education, access to transportation, and recreation and other leisure activities, and access to social and health services. These elements provide opportunities for individuals to establish interactions with social institutions and thus create social relationships with more distant others in their social worlds. Social institutions and distant others provide individuals with the opportunity to see themselves through the eyes of members of the larger social context in which they are embedded (e.g. teachers, co-workers/managers, service providers). In addition, infrastructural elements can
determine the quality and quantity of economic resources available to individuals. Access to material resources provides richer and more varied opportunities for individuals to excel in a variety of social roles (e.g. educational achievement and prestige through employment opportunities, both of which can facilitate upward social mobility and the prestigious social status that come with it) that, in concert, will positively enhance the development of self-esteem.

Neighborhood’s global quality and/or reputation of an area involve not only residents’ perceptions of their neighborhoods but also how others, including financial and investing institutions, perceive it. How residents and outsiders perceived an area in turn “may influence the infrastructure of the area, the self-esteem and morale of the residents, and who moves in and out of the area (Macintyre, Ellaway et al. 2002:131).”

Social Class

Social class reflects the place where individuals are located in their society’s social structure and thus can determine access to social and economic advantages, resources, opportunities, power, and esteem (Wells 2001). Studies on social class vary in their focus and methodology, depending on the social perspective used. A Weberian analysis of social class focuses on positions of wealth, power and prestige; a Marxian view has a larger focus on employment and individual self-realization; the status attainment perspective focuses on the social prestige assigned to education, work, and wealth; while a cultural perspective focuses “on the social conditions and settings within which people live – housing, possessions, value and ideologies, lifestyles, opportunities, and neighborhood composition (Wells 2001:31).”

Early work examining associations between social class and self-esteem provided conflicting results that were later attributed to the fact that these analyses reported basic bivariate
correlations and measured class using different indices (e.g. Hollinghead status index, the Duncan SEI score). Later work utilizing more elaborate methods reported more complex associations between social class and self-esteem. For instance, the significance of the association between social class and self-esteem have been found to vary depending on the measure used (Kaplan 1971), participant’s age (Rosenberg and Pearlin 1978; Demo and Savin-Williams 1983; Pallas, Entwisle et al. 1990), and dimension of self-esteem measured (Staples, Schwalbe et al. 1984; Gecas and Seff 1989). Some authors theorize that the complex association between self-esteem and social class is in part due to the individuals’ psychological centrality and their social context. Social class will matter for the self-esteem of those individuals who place high value on social status (i.e. education level, work prestige); and/or who live in social contexts where social position becomes an important piece of external information about self-performance and self-worth (Rosenberg and Pearlin 1978; Staples, Schwalbe et al. 1984; Crocker and Major 1989; Gecas and Seff 1989; Wells 2001).

Significance and Objectives

Psychosocial theories have postulated a dynamic interplay between social-structural conditions and self-esteem. Work exploring associations between social structures and self-esteem has failed to capture the complexity of these associations by using oversimplified measures of social-structure, usually treating them as control variables (Wells 2001); this may explain the inconclusive and conflicting results about the effect of status related social structures (e.g., socioeconomic status, race, gender, and ethnicity) on an individuals’ self-esteem (Porter and Washington 1979; Rosenberg 1979; Wylie 1979; Mruk 1995; Wells 2001).
The purpose of this paper is to follow House’s (1981) theoretical recommendations in an attempt to fully capture the effects of social structures and stratification systems on individual self-esteem. The focus of this study is on blacks’ self-esteem, which is important, given the theoretically contradictory results commonly reported in research on the self-esteem of blacks. Results of higher levels of black self-esteem compared to white self-esteem – despite the fact that blacks’ social position is in the lower levels, and that in most societies they are common victims of negative stereotypes, prejudice, and discriminatory behaviors – have been hypothesized to be related to the motivational selective nature of the self. Reflective appraisals that positively enhance the self are thus actively selected, while negative social appraisals are ignored to protect the self. It follows then, that during the process of self-development in their daily lives, blacks choose persons with similar status and with similar characteristics as their own for social comparisons and self-identification. Similarly, individuals selectively internalize images of themselves granted by others in their social environments that provide positive feedback and sources of pride (e.g. parents, church members), over those images that portray them in negative terms (e.g. teachers social media). Based on these principles, it has been hypothesized that blacks are unaffected by the larger society’s view of them; this theory, however, has not been empirically tested. The purpose of this study is to test empirically the potential effects of racial stereotypes held by whites toward blacks on blacks’ self-esteem. In order to accomplish this, I have aggregated whites’ stereotypes toward blacks by taking mean scores of the stereotypes’ scale at the county level to examine the complex ways in which variance in the distribution of this socio-cultural variable influences levels of blacks’ self-esteem. Racial stereotypes are highly influential on individuals’ lives because they have the capacity to determine hierarchical systems, the place of individuals within these systems, and the distribution of resources.
Negative stereotypes held by individuals in social institutions may affect blacks’ self-esteem by providing lower quality education (in part due to bias and stereotypes held against minority children and their ability to achieve successful outcomes) thus limiting their ability to meet social expectations and acquire skills to facilitate social mobility; by limiting access to quality or any employment (e.g. assessing potential employees by name rather than actual skills, as well as by place of residence; locating financial and commercial institutions based on a neighborhood’s racial composition) and thus limiting social opportunities to engage in diverse roles that can enhance self-esteem levels.

I follow House’s (1981) theoretical principles aiming at fully capturing associations between socio cultural structures and aspects of individual’s personality (House 1981). House’s three theoretical principles are: (1) the components principle, which requires a good understanding of the elements of the social structures to analyze, to understand how and why they affect individuals; (2) the proximity principle, which states the need to identify intermediary or proximate elements through which the effects of social structures, positions, or systems are transmitted to individuals; and (3) the psychological principle, which requires a clear understanding of the interrelationships among both the proximal and distal macro-structures and psychological process.

Building on this conceptual model and empirical literature, I examined three major research objectives (Figure 1).

First, I examined whether a county-level contextual measure of white held stereotypes toward blacks is associated with blacks’ self-esteem. I hypothesized that, when compared to blacks living in areas where whites hold lower positive stereotypes, blacks living in counties
where whites hold higher positive stereotypes toward blacks will have higher levels of self-esteem.

Second, I tested specific pathways through which whites’ positive stereotypes for blacks may contribute to blacks’ higher self-esteem. I hypothesized that relationships between whites’ positive stereotypes for blacks and blacks’ higher self-esteem are mediated by objective and subjective neighborhood factors. Objective neighborhood factors include a neighborhood’s affluence, stability, and foreign populations; subjective neighborhood factors are measured by participants’ perceptions of their neighborhood’s quality.

And third, I tested whether the relationship between whites’ positive stereotypes toward blacks’ and higher blacks’ self-esteem are mediated by individuals’ socioeconomic status. In summary, the emphasis in the conceptual model presented in Figure 1 is on the implications of social structures (county-level measure of whites’ positive stereotypes for blacks) for the development of blacks’ self-esteem (path c); the influence of this social structure on a proximate social context (neighborhoods’ socio economic and demographic features (path-a[n])); and on proximate individuals’ factors (i.e. perceived neighborhood quality and socioeconomic status) (path-a[i]); the influence of these contextual and individual proximate factors on self-esteem (path-b[n] and path-b[i]); and the role of these proximate factors as intermediate elements between social structure and self-esteem (path c’).
Figure 1. Hypothesized pathways mediating relationships between whites’ positive stereotypes for blacks and blacks’ self-esteem
METHODOLOGY

Sample and Measures

Data were abstracted from two sources at three levels: individual-level data from the Multi-City Study on Urban Inequality (MCSUI) and contextual data from the 1990 U.S. census including census tracts and counties. Since the MCSUI data include geographic identifiers at the tract level, individual-level data from the MCSUI were linked to tract level administrative data (derived from Census data) and to county-level residential segregation measures (using population numbers derived from Census data). The data for this study, therefore, include individuals (level-1) nested within census tracts (level-2), and these, in turn, were nested within counties (level-3).

The MCSUI is a cross-sectional, stratified, area probability household survey that centers on interviews with 8915 adults, 21 years and older, from 1992 to 1994, in four metropolitan areas that include Atlanta, Boston, Detroit, and Los Angeles. Given the focus on urban inequality, MCSUI data were oversampled in census tracts with high proportions of poor and minority residents. The MCSUI was designed to examine the ways in which shifting labor markets, racial attitudes, stereotypes, and racial residential segregation patterns act separately and in combination to maintain urban inequality. It is, therefore, a very unique, rich dataset for examining the dynamics of inequality, segregation and racial attitudes (Bobo 2001).

The sample for this analysis was restricted to respondents who were asked the self-esteem questions and who identified themselves as black non-Latinos. This included participants in the Atlanta (n=816), Boston (n=442), and Los Angeles (n=666), metropolitan regions (i.e. a total N=1924). In addition, LA restricted self-esteem data collection to participants who were currently working or had looked for work during the previous 10 years (n=666, 60 percent of total blacks
in LA). In order to have a homogeneous sample from the three metro-regions, the same working restriction was applied to the Atlanta and Boston samples. After this exclusion the final sample included N=1649 blacks: n=620 (76 percent) blacks from Atlanta; n=363 (82 percent) blacks from Boston; and n=666 (60 percent) blacks from LA. There were two main differences between black participants who were currently working or had looked for work during previous 10 years and those who were not—those who were not working were older age and had more health related problems. There were 63 additional participants with refused/don’t know/missing answers to any of the self-esteem questions and were also excluded. There was a low proportion of missing data (<2%). HLM 6.08 provides two options for handling missing data when running 2- and 3-level hierarchical linear models—listwise deletion at either the MDM creation stage or when the analysis is run (Raudenbush, Bryk et al. 2004). Deletion at the analysis stage was chosen for these analyses and, therefore, deletion was performed based on the variables included in the actual models run.

**Outcome Variable**

**Self-esteem**

Global self-esteem was assessed with four items of the validated Rosenberg self-esteem Likert-scale (Rosenberg 1989). The original scale includes 10 items; however, only four items were asked in the MCSUI study. Respondents were asked to rate on four point Likert-type scales ranging from “strongly disagree” (1) to “strongly agree” (4) their level of agreement with the following statements:(1) “I do not have much to be proud of;” (2) “On the whole, I am satisfied with myself;” (3) “All in all, I am inclined to feel that I am a failure;” (4) “I take a positive attitude toward myself.” Items 1 and 3 were reverse coded so higher values in each item
represent higher levels of self-esteem. Cronbach’s alpha for the scale was within an acceptable range (0.64) (Floyd and Widaman 1995).

**Predictor Variables**

**Level-3 Measure of Social Structure: County-level whites’ Positive Stereotypes toward blacks.**

To measure social structure in this study, I aggregated the responses of a scale created with four items assessing *stereotypes held toward blacks* from those participants who identify themselves as white non-Latinos. The contextual measure labeled *positive stereotypes toward blacks* in this study; therefore, aggregates the mean score of the stereotypes scale from white non-Latinos participants clustered together at the county-level. Aggregates have the capacity to manifest patterns of variation across social units, thus resemble the characteristics of structural factors becoming meaningful characteristics of social units (Liska 1990). In the United States, counties are politically and economically meaningful units in space. The power distribution between the state government and county governments is defined by each state’s constitution; as a result, this dynamic varies widely from state to state. The average U.S. county population is about 100,000. Larger areas, such as counties, are typical geographic units where people compete for jobs, resources, and political power. Racial diversity among counties, thus, may translate into greater competition among groups for power and status, which may, in turn, influence elite groups in power to promulgate negative racial ideologies, such as negative stereotypes, to restrict members of minority groups’ access and competition for resources (U.S. Census Bureau 2000).
The MCSUI study used four items from the Ethnic Images scale developed for the General Social Survey (GSS) in 1990 (Smith 1990) to measure beliefs about race in the U.S. Similar items and indices have been used by Bobo and Kluegel (Bobo and Kluegel 1993), Farley et al (Farley, Steeh et al. 1994) and Bobo and Zubrinsky (Bobo and Zubrinsky 1996). I used the same items used by Farley et al (1994) that are considered to be important when families consider new neighborhoods or when employers select new employees to be hired: intelligence, work ethic, compatibility, and whether minority groups speak English well. Using a 7-point Likert scale, participants were asked to rate blacks on four positive traits: intelligence, prefer to be self-supporting, easy to get along with, and speak English well. Original items are coded from 1 to 7, where 1 represented absence of the trait (unintelligent, prefer to live on welfare, not easy to get along with, and does not speak English well), and 7 represents the strongest presence of the trait. The items were then re-coded to -3; -2; -1; 0; 1; 2; 3, with negative scores representing absence and very low presence of the trait, zero being neutral, and positive values representing presence and high levels of the trait (Farley et al 1994). The scale’s total score ranged from -3 to 3, with positive and higher scores representing positive stereotypes; the Cronbach’s alpha statistic was within an excellent range (0.90) (Floyd and Widaman 1995) (Refer to Table 1 for details).
Level-2 Mediator: Neighborhood Indices

Census tracts (O'Campo, Xue et al. 1997; Kaufman 2005; Mujahid, Diez-Roux et al. 2007) are commonly used to define neighborhood boundaries. Some researchers have examined how the definition of a neighborhood’s boundaries may impact outcomes (Sampson and Raudenbush 1999; Krieger, Chen et al. 2002; Buka, Brennan et al. 2003; Morenoff 2003; Hipp 2007; Mujahid, Diez-Roux et al. 2007) and recommend careful assessment of the geographic unit of analysis to make sure it is appropriate for both the outcome of interest and the structural predictors being used. The unit to define neighborhood in this study are census tracts. Census tracts are small, relatively permanent statistical subdivisions of a county that generally contain...
between 1,500 and 8,000 people, with an average size of 4,000 people (U.S. Census Bureau 2000). I chose to define neighborhood using census tracts because their socioeconomic and demographic characteristics are relatively permanent over time, a feature that, combined with its relative small size, may promote close social interactions and the establishment of community networks (e.g. civic associations, religious communities) through which individuals have the opportunity to learn about themselves and develop their self-esteem. The permanence and size features also facilitate the clustering of social services through which residents are able to interact directly with social institutions representing the values of the larger society (U.S. Census Bureau 2000).

Consistent with past macro-level research, factor analysis with Varimax rotation was used to create indices of neighborhood socioeconomic context. I followed procedures recommended and common in the neighborhood literature (Land, McCall et al. 1990; Silver, Mulvey et al. 2002; Messer, Kaufman et al. 2006). Previous studies have identified a number of census variables that, when aggregated, do represent meaningful neighborhood/contextual characteristics of the environment where people live. Based on a review of the most common and theoretically relevant census variables used in health studies (Messer, Kaufman et al. 2006), I conducted a factor analysis with twenty-one census variables at the tract level using Stata 10 (Hamilton 2009). The twenty-one variables were grouped together into three component factors that I labeled “neighborhood affluence”, “neighborhood stability”, and “foreign populations”. Table 2 displays factor loadings, Eigen values, and cumulative variance explained by the three factors. Three factor scores were then created (Hamilton 2009). The predict command in Stata 10 automatically creates factor scores using the most recent rotate results. Factor scores are
standardized to a zero mean and one unit variance, and weighted with factor score coefficients (Hamilton 2009).

**Level-1 Mediator**

*Perceived Neighborhood Quality* was assessed with six items that assess quality of ones’ neighborhood. Three of the items were four point Likert-type scale questions (‘never’=1, ‘sometimes’=2, ‘often’=3, ‘always’=4) prompting respondents on the frequency they encountered the following problems in their neighborhoods: (1) City services, such as street cleaning or garbage collection; (2) Housing and property not being kept up; (3) Crime and vandalism. These items were reverse coded so higher scores represent fewer problems in the neighborhood. The remaining items, also on a four point Likert-type scale (‘excellent’=4, ‘good’=3, ‘fair’=2, ‘poor’=1), asked about the quality of the following neighborhood services: (1) Police protection; (2) The public schools; and (3) Neighborhood shopping, such as grocery and drug stores (Refer to Table 2 for details). A scale score was created with the six items that ranged from 6-24, with higher scores representing higher levels of perceived quality, Cronbach’s alpha was within a good range (0.75) (Floyd and Widaman 1995).

*Socio-economic Status* was assessed with years of education, modeled linearly, and family income, a five category variable defined as: (1) 0-$9,999: Reference Category; (2) $10,000-$29,999; (3) $30,000-$49,999; (4) $50,000-over; (5) missing.

**Level-1 Confounders**

To control for selection bias and compositional effects, I controlled for the following demographics: sex (0=male, 1=female), age in years modeled linearly, marital status (0=married, 1=not married), and nativity status (0=U.S. born, 1=Foreign born).
Table 2. Items and Factor Loadings for Neighborhood factors at the Tract Level

<table>
<thead>
<tr>
<th>Item</th>
<th>Loadings</th>
<th>Eigen Value</th>
<th>Cumulative variance explained</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1: Neighborhood Affluence</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% 18yrs/older with more than high school</td>
<td>0.891</td>
<td>9.264</td>
<td>0.526</td>
</tr>
<tr>
<td>% non-female headed households</td>
<td>0.826</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% males 16yrs/older in the work force</td>
<td>0.706</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% females 16yrs/older in the work force</td>
<td>0.711</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% households not receiving public assistance</td>
<td>0.874</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% persons not under poverty level</td>
<td>0.814</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% household receiving wages</td>
<td>0.667</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% 25yrs/older with bachelor’s degree</td>
<td>0.864</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% 25yrs/older with graduate or higher education</td>
<td>0.709</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% professionals/managerial positions</td>
<td>0.880</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% households received interest/dividends</td>
<td>0.876</td>
<td></td>
<td></td>
</tr>
<tr>
<td>natural log of median household income</td>
<td>0.836</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Factor 2: Neighborhood Stability</strong></td>
<td>2.825</td>
<td></td>
<td>0.728</td>
</tr>
<tr>
<td>% family households</td>
<td>0.908</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% households of married couples with children</td>
<td>0.791</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% in same household in the last five years</td>
<td>0.541</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% non-vacant houses</td>
<td>0.450</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% owner occupied households</td>
<td>0.701</td>
<td></td>
<td></td>
</tr>
<tr>
<td>natural log of median house value</td>
<td>0.345</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Factor 3: Foreign Populations</strong></td>
<td>2.199</td>
<td></td>
<td>0.878</td>
</tr>
<tr>
<td>% households speak Spanish (linguistically isolated)</td>
<td>0.747</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% households speak Asians (linguistically isolated)</td>
<td>0.632</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% foreign born persons</td>
<td>0.916</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ANALYTIC STRATEGY**

Table 3 shows univariates of predictor and outcomes variables. Model fit was assessed using multi-level modeling techniques. Cross-sectional, three-level, linear regressions for the black self-esteem models were estimated to test the effects of a context of positive stereotypes at county-level (level-3) on blacks’ self-esteem (measured at the level-1), and the mediating role of
proximate objective neighborhood factors (measured at level-2), and subjective neighborhood factors and individuals’ socio economic status (measured at level-1). Models include individuals at level 1 nested within neighborhoods at level 2, and these nested within counties at level 3. The alpha value used was \( \alpha = 0.05 \) on two-tailed tests. The multilevel model takes account of between-group and within-group variance, estimating error terms at both the lower and the higher levels; therefore, data dependence is modeled appropriately and standard errors are more accurately estimated.

**Mediation Analysis**

To evaluate mediation, I followed the four-step approach recommended by Baron and Kenny (1986) in which a number of regression analyses are run and changes in coefficients are examined after each step. Zero-order relationships between (1) predictor and outcome, (2) predictor and mediator, and (3) mediator and outcome are examined in the first three regressions. Step 4 is conducted only if significant associations are evident in all three regression coefficients described above. Step (4) consists of a multivariate regression analysis with both the predictor and mediator variables predicting the outcome. Mediation is supported if the effect of the mediator remains significant after controlling for the predictor. Full mediation can be assumed if the predictor becomes insignificant after including the mediator in the regression. If both the predictor and the mediator remain statistically significant, then a partial mediation can be assumed (Baron and Kenny 1986).

I used the multistep procedure to test for mediating effects of neighborhood factors (i.e., neighborhood indices of affluence, stability and foreign populations at level-2 and perceived neighborhood’s quality and individuals’ socio economic status at level-1) on the relationship of whites’ positive stereotypes toward blacks with blacks’ self-esteem. As illustrated in Figure 1, I
first tested the hypothesis that whites’ positive stereotypes about blacks were positively associated with higher black’s self-esteem, after controlling for individual level confounders (i.e., gender, age, marital status, and nativity) (Figure 1, path c, total effect). In step (2), I regressed each mediating variable (i.e. neighborhood-level factors: objective indices of affluence, stability, and foreign populations; and individual-level factors: subjective perceived neighborhood’s quality and blacks’ socio economic status) on whites’ positive stereotypes toward blacks (Figure 1, path-a[n] and path-a[i], indirect effect). Step (3) consisted of a series of regression analysis with each of the mediating variables predicting the outcome (Figure 1, path-b[n] and path-b[i], indirect effects). The final step (4) consisted of a series of multivariate regression analyses, each including a mediating variable, the predictor, and the outcome (Figure 1, path c’, direct effect). The difference between c and c’ was examined after each regression. Mediation was supported if the effect of the mediating variable remained significant after controlling for whites’ positive stereotypes for blacks (predictor variable). A full mediation is supported if the predictor becomes statistically insignificant after adding a mediating variable; if both the predictor and the mediating variable remain significantly associated to blacks’ self-esteem, then a partial mediation can be assumed. A final multivariate regression analysis was run that added the predictor, all the mediating variables, and the outcome, simultaneously. Testing all mediating variables simultaneously allows to test whether the mediation of each variable is independent of the effect of the other mediators (Baron and Kenny 1986). The difference between c and c’ was also examined after this last regression. Below I provide a descriptive table of the mediating analysis steps. I have to note here that although the four-step approach used to test mediation is a common approach used by researchers, this approach does not test for the significance of the indirect pathway (path a and path b) (MacKinnon, Fairchild et al. 2007).
Testing the significance of the indirect effect, of both a level-2 mediator and a level-1 mediator, on a relationship between a level-3 predictor and a level-1 outcome, such as the one examined in this analysis, involves a level of statistical sophistication that goes beyond the objectives of this study.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step (1)</td>
<td>$X \rightarrow Y$; path $c$; total effect</td>
<td>Table 4</td>
</tr>
<tr>
<td>Step (2)</td>
<td>$X \rightarrow M$; path $a[n]$ &amp; path $a[i]$; indirect effects</td>
<td>Table 5</td>
</tr>
<tr>
<td>Step (3)</td>
<td>$M \rightarrow Y$; path $b[n]$ &amp; path $b[i]$; indirect effects</td>
<td>Table 6</td>
</tr>
<tr>
<td>Step (4)</td>
<td>$X + M \rightarrow Y$; path $c'$; direct effect</td>
<td>Table 7</td>
</tr>
</tbody>
</table>

Multi-level Analysis

A number of three-level multilevel linear regression models were specified to model whites’ racial/ethnic attitudes using Hierarchical Linear and Nonlinear Modeling (HLM) vs.6.08, a specialized statistical software designed to analyze hierarchically structured data (Snijders and Bosker 1999; Raudenbush and Bryk 2002; Rabe-Hesketh and Skrondal 2005). Models were estimated using Empirical Bayes estimates as implemented with HLM 6.08 (Raudenbush, Bryk et al. 2004). To test for random effects, HLM produces a chi-square statistic that tests the significance of the between-group variance. A significant chi-square for the intercept variance of the dependent variable indicates that between-group variance is significantly different from zero and that the intercept term varies across groups (Raudenbush, Bryk et al. 2004). All of the independent variables measured linearly at level 2 and level 1 were centered around the sample’s grand mean, categorical variables were not centered.
I first estimated a Null Model that included only a random intercept to test for the contextual effect of whites’ stereotypes on blacks’ self-esteem. Intra-class correlation (ICC) coefficients were calculated to measure the proportion of total variance explained by contextual differences, i.e., the extent to which blacks’ self-esteem is similar among those participants that share geographic residential areas (i.e., tracts and counties). Thereafter, I included individual-level confounders (i.e., gender, age, marital status, and nativity) (Confounders Model), whites’ positive stereotypes for blacks before and after controlling for level-1 confounders (Model 1 and Model 1a), each of the objective neighborhood mediators (Models 2a through 2c), subjective perceived neighborhood quality (Model 2d), individual’s socioeconomic status (Model 2e), and a final model (Model 2f) that included main predictor, all mediators and confounders.

Below I provide a mathematical representation of the models run in this chapter:

**Null Model** will test for self-esteem as a linear function of the area in which participants live represented by the area level random intercept:

\[ Y_{ijk} = \beta_0 X_{0ijk} + \mu_{0k} + \nu_{0jk} + e_{0ijk} \]

**Confounders Model**: will test for blacks’ self-esteem as a linear function of the area in which participants live represented by the area level random intercept adjusting for individual-level confounders:

\[ Y_{ijk} = \beta_0 X_{0ijk} + \beta_1 (gender)_{ijk} + \beta_2 (age)_{ijk} + \beta_3 (MST)_{ijk} + \beta_4 (NTV)_{ijk} + \mu_{0k} + \nu_{0jk} + e_{0ijk} \]

**Model 1 and 1a**: county-level whites’ positive stereotypes for blacks random intercept models before and after adjusting for individual-level confounders (\( X \rightarrow Y; \) path c):

\[ 1: Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1 (WSte)_k + \mu_{0k} + \nu_{0jk} + e_{0ijk} \]
\[ 1a: Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(WSte)_k + \beta_1(gender)_{ijk} + \beta_2(age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \mu_0k + \nu_{0jk} + e_{0ijk} \]

Models 2a through 2e: county-level whites’ positive stereotypes for blacks random intercepts models adjusted for neighborhood-level socio economic and demographic context, perceived neighborhood quality, individual-level socio economic status, and individual-level confounders \((X + M \rightarrow Y; \text{path } c'):\)

\[ 2a: Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(WSte)_k + \tau_1(NAI)_{jk} + \beta_1(gender)_{ijk} + \beta_2(age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \mu_0k + \nu_{0jk} + e_{0ijk} \]

\[ 2b: Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(WSte)_k + \tau_2(NSI)_{jk} + \beta_1(gender)_{ijk} + \beta_2(age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \mu_0k + \nu_{0jk} + e_{0ijk} \]

\[ 2c: Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(WSte)_k + \tau_3(NFPI)_{jk} + \beta_1(gender)_{ijk} + \beta_2(age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \mu_0k + \nu_{0jk} + e_{0ijk} \]

\[ 2d: Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(WSte)_k + \beta_1(gender)_{ijk} + \beta_2(age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \beta_5(PNQ)_{ijk} + \mu_0k + \nu_{0jk} + e_{0ijk} \]

\[ 2e: Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(WSte)_k + \beta_1(gender)_{ijk} + \beta_2(age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \beta_5(EDU)_{ijk} + \beta_6(FINC)_{ijk} + \mu_0k + \nu_{0jk} + e_{0ijk} \]

\[ 2f: Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(WSte)_k + \tau_1(NAI)_{jk} + \tau_2(NSI)_{jk} + \tau_3(NFPI)_{jk} + \beta_1(gender)_{ijk} + \beta_2(age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \beta_5(PNQ)_{ijk} + \beta_6(EDU)_{ijk} + \beta_7(FINC)_{ijk} + \mu_0k + \nu_{0jk} + e_{0ijk} \]

Where: The individual-level, neighborhood-level, and county-level covariates parameters are represented by \(\beta, \tau, \text{ and } \alpha; \text{ and:} \)

\[ i = \text{individual participant} \]
\[ j = \text{neighborhood cluster} \]
\[ k = \text{county cluster} \]
\[ Y_{ijk} = \text{self-esteem for the } i^{th} \text{ participant in neighborhood } j \text{ located in county } k \]
\( \beta_0 = \) intercept, it is the overall mean of self-esteem

**Model Predictor**

\( (\text{WSte}) = \) whites’ positive stereotypes toward blacks

**Level-1 confounders:**

- Gender = participant’s gender*
- Age = participant’s age
- MST = participant’s marital status*
- NTV = Participant’s nativity*

**Neighborhood Mediators**

- NAI = neighborhood affluence index
- NSI = neighborhood stability index
- NPF = neighborhood foreign populations index

**Level-1 Mediators**

- PNQ = participant’s perceived neighborhood quality
- EDU = participant’s number of years of education
- FINC = participant’s family income*

\( \mu_{0k} = \) county level residuals which are normally distributed with a mean 0 and variance \( \sigma^2_{\mu_{0k}} \)

\( \nu_{0jk} = \) neighborhood level residuals which are normally distributed with a mean 0 and variance \( \sigma^2_{\nu_{0jk}} \)

\( e_{0ijk} = \) individual level residuals which are normally distributed with a mean 0 and variance \( \sigma^2_{e_{0ijk}} \)

**Level 3 Var:** \( \mu_{0k} | \pi_{ijk} \sim N (0, \sigma^2_{\mu_{0k}}) \)

Independent across counties \( \sigma^2_{\mu_{0k}} \) is residual between-counties variance

**Level 2 Var:** \( \nu_{0jk} | \pi_{ijk} \sim N (0, \sigma^2_{\nu_{0jk}}) \)

Independent across neighborhoods, independent of \( \mu_{0k} \)

\( \sigma^2_{\nu_{0jk}} \) is residual between-neighborhoods, within counties variance

*Categorical variables will be expanded in models to include all except referent category*

The random-intercept models can be written mathematically as Equations 1, 2 and 3:

\[
Y_{ijk} = \beta_{0jk} + \beta_p X_{pijk} + e_{ijk}
\]

\[
\beta_{0jk} = \gamma_{00k} + \gamma_{0q} Z_{qjk} + u_{0jk}
\]

\[
\gamma_{00k} = \pi_{000} + \pi_{00s} W_{sk} + \tau_{00k}
\]
Equation 1 states that, for respondent \( i \) who lives in neighborhood \( j \) further nested within county \( k \), the value of the outcome variable \( Y_{ijk} \) equals the sum of the intercept for neighborhood nested within county \( \beta_{0jk} \), the product of the vector Level 1 coefficients \( \beta_p \) and the values of the set of Level 1 independent variables \( X_{pijk} \), and an error term \( e_{ijk} \) unique to the participant. Equation 2 states that the intercept for neighborhood \( j \) nested within county \( k \) \( \beta_{0jk} \) is equal to the sum of the average intercept for all neighborhoods \( j \) nested within county \( k \) holding the independent variables constant \( \gamma_{00k} \), the product of the \( q \) Level 2 coefficients \( \gamma_{0q} \) and the set of Level 2 predictors \( Z_{qjk} \), and the random deviation \( u_{0jk} \) unique to the neighborhood nested within level-3. Equation 3 states the intercept for the county \( \gamma_{00k} \) is equal to the sum of the average intercept for all counties holding the independent variables constant \( \pi_{000} \), the product of the \( s \) Level 3 coefficients \( \pi_{00s} \) and the set of Level 3 predictors \( W_{sk} \), and the random deviation \( r_{00k} \) unique to the level-3.

**RESULTS**

Table 3 shows descriptive statistics for the individual-, neighborhood-, and county-level variables. The average score on blacks’ self-esteem was 14.4 (SD=1.9), about two thirds of participants were female, average age of participants was 40.1 years (SD=14.8), eight percent of the sample was foreign born, almost one third was married, and average level of education was 13 years (SD=2.4). Overall, whites’ stereotypes toward blacks was slightly positive (M=0.23, SD=0.20), and averages on neighborhood indices were negative, with -0.66, -0.31, and -0.66 on the affluence, stability and foreign populations respectively. Participants resided in Atlanta (N=620), Los Angeles (N=666), and Boston (N=357), and represented 242 census tracts (86 in Atlanta, 66 in Los Angeles, and 90 in Boston) and 12 counties (six in Atlanta, one in Los
Angeles, and five in Boston), with a mean of seven participants per census tract (range: 1–35 participants).

Table 3. Blacks' Self-esteem: Sample Descriptives

<table>
<thead>
<tr>
<th>Health Outcome</th>
<th>M or Freq</th>
<th>SD or %</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-esteem</td>
<td>14.36</td>
<td>1.91</td>
<td>4.00</td>
<td>16.00</td>
</tr>
</tbody>
</table>

**Level-3: Predictor**

| Whites' Positive Stereotypes for Blacks | 0.23 | 0.20 | -0.22 | 0.66 |

**Level-2 Mediators**

| Neighborhood affluence Index | -1.32E-09 | 0.990 | -2.583 | 2.059 |
| Neighborhood Stability Index | -1.81E-09 | 0.981 | -3.244 | 2.221 |
| Foreign Populations Index     | 1.17E-09  | 0.962 | -1.549 | 3.642 |

**Level-1 Mediators**

| Perceived neighborhood quality | 18.93 | 3.95 | 7.00 | 28.00 |
| Individual socioeconomic status |  |  |  |  |
| Education in years             | 12.61 | 2.44 | 0.00 | 17.00 |
| Family income                  |  |  |  |  |
| $0-$9,999-ref                  | 477   | 29.0 |
| $10,000-$29,999                | 582   | 35.4 |
| $30,000-$49,999                | 221   | 13.5 |
| $50,000 and more               | 133   | 8.1  |
| Missing                        | 230   | 14.0 |

**Level-1: Counfounders**

| Sex                            | 1095 | 66.7 |
| Gender                         | 548  | 33.4 |
| Age in years                   | 40.01| 14.79| 21.00| 92.00|
| Nativity                       | 1508 | 91.74|
| US Born-Ref                    | 135  | 8.26 |
| Foreign Born                   | 454  | 27.6 |
| Marital Status                 | 1189 | 72.4 |
| Married-ref                    |  |  |  |  |
| Non-married                    |  |  |  |  |
Bivariate associations of level-1 confounders with blacks’ self-esteem showed that, while there were no gender differences, older blacks had significantly higher levels of self-esteem. For every one-year increase in age above the mean (M=14.4), there was a 0.004 increase in self-esteem scores (SE=0.002, p<0.05); non-married blacks had significantly lower levels of self-esteem compared to married ones (β =-0.431 SE=0.049, p<0.0001); a year increase in education above high school was positively associated with higher levels of self-esteem (β =0.162 SE=0.033, p<0.0001); similarly, compared to the lowest category of family income ($0-$9,999), higher income levels were positively associated with higher levels of self-esteem. Higher self-esteem among foreign-born compared to U.S. born blacks reached significance (β =0.172 SE=0.100, p=0.087).

Table 4 shows results of associations of whites’ positive stereotypes toward blacks with the mediators (i.e. X → M; path a[n] and path a[i] in Figure 1). Whites’ positive stereotypes were significantly and positively associated with neighborhoods’ higher indices of affluence (β =0.959, SE=0.070, p<0.0001) and stability (β =0.382, SE=0.056, p<0.05); and significantly and negatively associated with a higher index of foreign population (β =-1.751, SE=0.059, p<0.0001). Whites’ positive stereotypes for blacks were also significantly and positively associated with subjective perceptions of higher quality neighborhoods’ (β =2.454, SE=0.401, p<0.0001). The association of whites’ stereotypes of blacks with individuals’ education and family income was not statistically significant; therefore, individuals’ socio economic status was not used as a mediating variable in subsequent analyses. Model 2e described in the analytical section will not, therefore, test for mediating role of individual’s socio economic status. Model 2f initially proposed to test for the simultaneous role of all the proposed mediating variables will now be labeled Model 2e.
Table 5 shows results of associations between mediators and outcome (i.e. $M \rightarrow Y$; paths $b[n]$ and paths $b[i]$ in Figure 1). Positive and significant associations were found between higher indices of affluence ($\beta = 0.245$, SE=0.030, $p<0.0001$) and self-esteem, and between higher indices of stability and self-esteem ($\beta = 0.139$, SE=0.051, $p<0.01$, respectively). In contrast, negative and significantly associations were found between higher levels of foreign populations and self-esteem ($\beta = -0.229$, SE=0.035, $p<0.0001$). Positive and statistically significant associations were also evident between higher individuals’ socio economic status and self-esteem (Table 5 provides coefficients, standard errors and $p$-values for these associations).

Table 6 presents the association of whites’ positive stereotypes for blacks with blacks’ self-esteem (i.e. $X \rightarrow Y$; path $c$ in Figure 1) which was positive and statistically significant, even after controlling for level-1 confounders. Table 6 shows associations of county-level positive whites’ stereotypes toward blacks with blacks’ self-esteem before ($\beta = 1.081$ SE=0.215, $p<0.0001$) and after controlling for level-1 confounders ($\beta = 1.124$ SE=0.201, $p<0.0001$); higher self-esteem was evident among blacks residing in counties where whites held more positive stereotypes. Results of Model 1a revealed some statistically significant associations of self-esteem and level-1 confounders (not shown in Table 6 for parsimony). While there were no gender differences, older blacks had significantly higher levels of self-esteem. For a one-year increase in age above the mean (M=14.4), there was a 0.004 increase in self-esteem scores (SE=0.002, $p<0.05$); non-married blacks had significantly lower levels of self-esteem compared to married ones ($\beta = -0.431$ SE=0.049, $p<0.0001$); a year increase in education above high school was positively associated with higher levels of self-esteem ($\beta = 0.162$ SE=0.033, $p<0.0001$); similarly, compared to the lowest category of family income ($\$0-$\$9,999$), higher income levels
were positively associated with higher levels of self-esteem. Higher self-esteem among foreign-born compared to U.S. born blacks reached significance ($\beta = 0.172$ SE=0.100, p=0.087).
Table 4. HLM Regression Analysis with Whites’ Positive Stereotypes for Blacks predicting Mediating Variables: $X \rightarrow M$ (paths $a[n]$ and paths $a[i]$)

<table>
<thead>
<tr>
<th>Level-3: Predictor</th>
<th>Mediating Variables as Outcomes</th>
<th>Subjective Perceived Ngh Quality</th>
<th>Individual SES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whites’ Positive Stereotypes for Blacks</td>
<td>Neighbor Affluence Index</td>
<td>Neighbor Stability Index</td>
<td>Foreign Populations Index</td>
</tr>
<tr>
<td>$\beta$</td>
<td>$SE$</td>
<td>$p$-value</td>
<td>$\beta$</td>
</tr>
<tr>
<td>0.959</td>
<td>0.070</td>
<td>&lt;.0001 ***</td>
<td>0.382</td>
</tr>
</tbody>
</table>

$P<0.10 +; *P<0.05 *; P<0.01 **; P<0.001 ***$

Table 5. HLM Regression Analysis with Mediating Variables predicting Blacks’ Self-Esteem: $M \rightarrow Y$ (paths $b[n]$ and paths $b[i]$)

<table>
<thead>
<tr>
<th>Blacks’ Self-Esteem</th>
<th>$\beta$</th>
<th>$SE$</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level-2 Mediators</strong></td>
<td>Neighborhood affluence Index</td>
<td>0.245</td>
<td>0.030</td>
</tr>
<tr>
<td>Neighborhood Stability Index</td>
<td>0.139</td>
<td>0.051</td>
<td>0.007 **</td>
</tr>
<tr>
<td>Foreign Populations Index</td>
<td>-0.229</td>
<td>0.035</td>
<td>&lt;.0001 ***</td>
</tr>
<tr>
<td><strong>Level-1 Mediators</strong></td>
<td>Perceived neighborhood quality</td>
<td>0.050</td>
<td>0.011</td>
</tr>
<tr>
<td>Individual socioeconomic status</td>
<td>Education in years</td>
<td>0.162</td>
<td>0.033</td>
</tr>
<tr>
<td>Family income</td>
<td>$$0-9,999-ref$</td>
<td>0.628</td>
<td>0.059</td>
</tr>
<tr>
<td>$$10,000-$29,999$</td>
<td>0.645</td>
<td>0.059</td>
<td>&lt;.0001 ***</td>
</tr>
<tr>
<td>$$30,000-$49,999$</td>
<td>1.002</td>
<td>0.075</td>
<td>&lt;.0001 ***</td>
</tr>
<tr>
<td>$$50,000 and more$</td>
<td>1.174</td>
<td>0.053</td>
<td>&lt;.0001 ***</td>
</tr>
<tr>
<td>Missing</td>
<td>0.691</td>
<td>0.108</td>
<td>&lt;.0001 ***</td>
</tr>
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</table>

$P<0.10 +; *P<0.05 *; P<0.01 **; P<0.001 ***$
Table 6. Associations between Whites’ Positive Stereotypes for Blacks and Blacks’ self-esteem in Hierarchical Linear Regression Models: X → Y (path c)

<table>
<thead>
<tr>
<th>Self-Esteem</th>
<th>Null Model</th>
<th>Level-1 Confounders</th>
<th>Model 1 - X → Y</th>
<th>Model 1a† - X → Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>β</td>
<td>SE</td>
<td>p-value</td>
<td>β</td>
</tr>
<tr>
<td>Level-3: Predictor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whites’ positive stereotypes for blacks</td>
<td>1.081</td>
<td>0.215</td>
<td>&lt;.0001 ***</td>
<td>1.124</td>
</tr>
<tr>
<td>Level-2: Neighborhood Mediators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighborhood affluence Index</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighborhood Stability Index</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign Populations Index</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level-1: Mediators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived neighborhood quality</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Individual’s socioeconomic status</td>
<td></td>
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<tr>
<td>Education in years</td>
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<td>Family income</td>
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<tr>
<td>$0-$9,999-ref</td>
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<td>$10,000-$29,999</td>
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<tr>
<td>$50,000 and more</td>
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<tr>
<td>Missing</td>
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</table>

Random Part-Variance Components

<table>
<thead>
<tr>
<th>Var</th>
<th>Chi-sq</th>
<th>p-value</th>
<th>Var</th>
<th>Chi-sq</th>
<th>p-value</th>
<th>Var</th>
<th>Chi-sq</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 Individuals [N=1632]</td>
<td>3.236</td>
<td>3.184</td>
<td>3.237</td>
<td>3.185</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Level 2 Neighborhoods [N=241]</td>
<td>0.369</td>
<td>413.2</td>
<td>&lt;.0001 ***</td>
<td>0.364</td>
<td>414.8</td>
<td>&lt;.0001 ***</td>
<td>0.359</td>
<td>413.1</td>
</tr>
<tr>
<td>Level 3 Counties [N=11]</td>
<td>0.038</td>
<td>19.0</td>
<td>0.040</td>
<td>0.038</td>
<td>18.8</td>
<td>0.042</td>
<td>0.0002</td>
<td>7.8</td>
</tr>
</tbody>
</table>

Neighborhoods Intraclass correlation § (%ICC) |
| 10.1% | 10.2% | 10.0% | 9.9% |

Variance Explained (PCV=proportional change in variance) |
| Ref | 1.4% | 2.8% | 5.4% |
| Ref | 98.6% | 97.2% | 94.6% |

Counties Intraclass correlation £ (%ICC) |
| 1.1% | 1.1% | 0.0% | 0.0% |

Variance Explained (PCV=proportional change in variance) |
| Ref | 1.9% | 99.5% | 99.6% |
| Ref | 98.1% | 0.5% | 0.4% |

-2log likelihood |
| 6671.4 | 6636.6 | 6664.5 | 6628.9 |

† Controlling for Level-1 confounders: gender, age, nativity, and marital status
P<0.10 †; *P<0.05 *; P<0.01 **; P<0.001 ***

§ Proportion of total variance in Blacks’ self-esteem that is between neighborhoods (tracts); £ Proportion of total variance in Blacks’ self-esteem that is between Counties
Guided by results from analyses presented in Tables 4, 5, and 6, I proceeded to complete step (4) of the mediating analysis.

**Neighborhood Context’s Mediating Role**

Next, I tested the hypothesis that neighborhood context mediates the relationship of county-level contextual stereotypes held by whites with blacks’ self-esteem. Table 7, Model 2a, shows that the relationship of whites’ stereotypes with blacks’ self-esteem (β =1.037, SE=0.182, p<0.0001) is attenuated (an eight percent direct effect reduction) with the inclusion of neighborhood affluence. The continued significance of the whites’ stereotypes-blacks’ self-esteem association suggests a partial mediating role of neighborhood affluence. Table 7, Model 2b, shows an attenuating effect (a four percent effect reduction between total and direct effect) in the relationship of whites’ stereotypes with blacks’ self-esteem (β =1.082, SE=0.207, p<0.0001) after neighborhood stability is included in the model. However, neighborhood stability becomes not significant. A more drastic reduction in the effect (a 33 percent effect reduction between total and direct effect) of whites’ stereotypes with blacks’ self-esteem (β =0.749, SE=0.194, p<0.01) is observed in Table 7, Model 2c, when the neighborhood foreign populations index is added to the model. Similar to Model 2a, the whites’ stereotypes-blacks’ self-esteem association remained statistically significant suggesting a partial mediating role of neighborhood foreign populations. After adjusting for contextual neighborhood factors, the direct effect of whites’ stereotypes on blacks’ self-esteem remained statistically significant suggesting additional factors are mediating this association.

**Subjective Neighborhood’s Quality Mediating Role**
Next, I tested whether the perception of neighborhood’s quality mediates the relationship of whites’ stereotypes with blacks’ self-esteem. Table 7, Model 2d shows that the relationship of whites’ stereotypes with blacks’ self-esteem ($\beta =1.007, SE=0.188, p<0.0001$) is attenuated (a ten percent effect reduction between total and direct effect) with the inclusion of perceived quality of one’s neighborhood. The attenuated coefficient of the whites’ stereotypes-blacks’ self-esteem association and its continued significance indicates a partial mediating effect of the subjective neighborhood measure, and suggests that additional factors are mediating this association.

**Individual’s Socioeconomic Status Mediating Role**

No analysis was run to test for the mediating effect of individuals’ SES given that the relationships between whites’ stereotypes and participants’ education and family income were not significant. However, because of the relevance of individual SES to self-esteem, and the significant associations between self-esteem and levels of education ($\beta =0.162$ $SE=0.033, p<0.0001$) and family income, both SES variables were included in the final model, in which predictor, outcome, confounders, and all mediating variables were inserted.

**Multiple Mediators Model**

Model 2e, Table 7, displays HLM regression analysis that includes predictor and outcome, and all the hypothesized mediating variables simultaneously. Model 2e, Table 7, included objective neighborhood indices of affluence and foreign populations, as well as subjective perceptions of neighborhood quality as significant mediators of the relationship of whites’ positive stereotypes with blacks’ self-esteem. I also included the index of neighborhood stability and individuals’ socioeconomic status (i.e., education level and family income), given their
significant association with self-esteem. Table 7, Model 2e showed that the relationship of whites’ positive stereotypes with blacks’ self-esteem ($\beta = 0.557$ SE=0.364, $p=0.160$) was attenuated (a 50 percent effect reduction between total and direct effect) and became not significant. Associations of blacks’ self-esteem with percent foreign populations ($\beta = -0.179$ SE=0.074, $p<0.05$) and blacks’ self-esteem with perceived neighborhood quality ($\beta = 0.038$ SE=0.012, $p<0.01$) remained statistically significant suggesting that the mediating role of these two variables are independent of the effect of the other mediators. Similarly, individuals’ socio economic status remained significantly associated with blacks’ self-esteem (refer to Table 7, Model 2e). In contrast, the neighborhood affluence-blacks’ self esteem association became insignificant when testing all mediators simultaneously.

**Variance Components**

Table 6, Null Model, shows significant (Chi-Square=19.0; df=11; p-value=<0.05) and very small variations to be explained at the county level. The intra-county correlation coefficient showed that 1 percent of the variance in blacks’ self-esteem could be attributed to county-level factors. Level-1 confounders explained two percent of the self-esteem variance between counties (refer to Table 6, Confounders Model). An additional 98 percent of the variance in self-esteem between counties was explained by whites’ stereotypes which, together with level-1 confounders (i.e., gender, age, nativity, and marital status), explained the total variance found at the county-level. Higher self-esteem was evident among blacks residing in counties were whites held more positive stereotypes. At the neighborhood-level, Table 6, Null Model, shows that ten percent of the variance in blacks’ self-esteem could be attributed to neighborhood-level factors. Level-1 confounders explained one percent of the self-esteem variance between neighborhoods; and an additional 17 percent, eight percent, and five percent of the variance in self-esteem between
neighborhoods was explained by the neighborhoods’ indices of affluence, stability, and foreign populations, respectively. A total of 32 percent of the variance between neighborhoods was explained by the final model which included all variables tested in this analysis (refer to Table 7, Model 2e). Higher levels of self-esteem were evident among blacks that resided in neighborhoods with higher indices of affluence and stability, while blacks residing in neighborhoods with higher indices of foreign populations showed lower levels of self-esteem.
Table 7. Effects of Adjusting for Neighborhood and Individual Variables on Associations between Whites' Positive Stereotypes for Blacks and Blacks' self-esteem in Hierarchical Linear Regression Models: \(X \rightarrow M \rightarrow Y (\text{path } c')\)

**Self-Esteem**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 2a†</th>
<th>Model 2b†</th>
<th>Model 2c†</th>
<th>Model 2d†</th>
<th>Model 2e†</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(\beta)</td>
<td>SE</td>
<td>p-value</td>
<td>(\beta)</td>
<td>SE</td>
</tr>
<tr>
<td><strong>Level-3: Predictor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whites' Positive Stereotypes for Blacks</td>
<td>1.037</td>
<td>0.182</td>
<td>&lt;.0001 ***</td>
<td>1.082</td>
<td>0.207</td>
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<td><strong>Level-2: Neighborhood Mediators</strong></td>
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<tr>
<td>Neighborhood affluence Index</td>
<td>0.214</td>
<td>0.048</td>
<td>&lt;.0001 ***</td>
<td>0.007</td>
<td>0.076</td>
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<tr>
<td>Neighborhood Stability Index</td>
<td>0.072</td>
<td>0.055</td>
<td>0.186</td>
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<tr>
<td>Foreign Populations Index</td>
<td>-0.167</td>
<td>0.031</td>
<td>&lt;.0001 ***</td>
<td>-0.179</td>
<td>0.074</td>
</tr>
<tr>
<td><strong>Level-1: Mediators</strong></td>
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</tr>
<tr>
<td>Perceived neighborhood quality</td>
<td>0.047</td>
<td>0.011</td>
<td>&lt;.0001 ***</td>
<td>0.038</td>
<td>0.012</td>
</tr>
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<td>Individual's socioeconomic status</td>
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<td>Education in years</td>
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**Random Part-Variance Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>Var</th>
<th>Chi-sq</th>
<th>p-value</th>
<th>Var</th>
<th>Chi-sq</th>
<th>p-value</th>
<th>Var</th>
<th>Chi-sq</th>
<th>p-value</th>
<th>Var</th>
<th>Chi-sq</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 Individuals [N=1632]</td>
<td>3.189</td>
<td>3.187</td>
<td>3.174</td>
<td>3.175</td>
<td>2.997</td>
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</tr>
<tr>
<td>Level 2 Neighborhoods [N=241]</td>
<td>0.308</td>
<td>398.2</td>
<td>&lt;.0001 ***</td>
<td>0.342</td>
<td>408.9</td>
<td>&lt;.0001 ***</td>
<td>0.352</td>
<td>417.1</td>
<td>&lt;.0001 ***</td>
<td>0.310</td>
<td>396.6</td>
<td>&lt;.0001 ***</td>
</tr>
<tr>
<td>Level 3 Counties [N=11]</td>
<td>0.0002</td>
<td>5.2</td>
<td>&gt;.500</td>
<td>0.0001</td>
<td>8.1</td>
<td>&gt;.500</td>
<td>0.0001</td>
<td>6.2</td>
<td>&gt;.500</td>
<td>0.0002</td>
<td>6.0</td>
<td>&gt;.500</td>
</tr>
</tbody>
</table>

-2log likelihood | 6620.7 | 6628.0 | 6624.3 | 6614.5 | 6509.7 |

† Controlling for Level-1 confounders: gender, age, nativity, and marital status
P<.010 +; *P<.05 *; P<.01 **; P<.001 ***
§ Proportion of total variance in Blacks' self-esteem that is between neighborhoods (tracts); £ Proportion of total variance in Blacks' self-esteem that is between Counties

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DISCUSSION

There were three main findings from the analysis of this study. First, a county aggregated measure of whites’ positive stereotypes about blacks was positively associated with higher levels of blacks’ self-esteem after controlling for potential confounders. This relationship was partially mediated individually by the objective neighborhood indices of affluence and foreign populations, and by the subjective perceived quality of ones’ neighborhood. However, when tested simultaneously, the neighborhoods’ indices of affluence and foreign populations, together with subjective perceived neighborhood’s quality, mediated completely the total effect of whites’ positive stereotypes toward blacks on blacks’ self-esteem. These findings are further discussed below.

County-Level Whites’ Racial Stereotypes and Blacks’ Self-esteem

In line with my first hypothesis, this study provides empirical evidence that positive stereotypes from society’s majority group do have a beneficial effect on blacks’ self-esteem. As a result of the large number of studies showing higher levels of self-esteem among blacks, compared to whites, previous work on blacks’ self-esteem had inferred that blacks were in some manner protected against the negative values and beliefs held against them by society at large. However, this tenet had not empirically been tested. As in previous studies, the self-esteem of blacks in this study is significantly the highest compared to whites, Latinos and Asians; however, this does not mean that blacks are immune to the effects of socio-cultural views the larger society holds toward them. Results from this study show that society’s positive representations toward blacks are associated with higher levels of blacks’ self-esteem. Social evaluations and the perception that one is valued by others in our social world have an important role in the
development of self-esteem (Mead 1934; Cooley 1956). Through reflected appraisals and social comparisons, individuals develop self-awareness and self-evaluation. Social comparisons provide reference points for evaluating what the larger society values and accepts (Rosenberg 1973; Wells 2001). According to the interactionist and the socialization of personality approaches, the negative representations of blacks disseminated by whites (the majority group in power) are to some extent internalized in the development of self-esteem (Wells 2001).

Individuals attain a sense of identity by evaluating themselves using the values and principles available in their socio-cultural contexts (Wells 2001). Although no studies were found linking macro-micro theories to assess the potential effects of a socio-structural variable representing negative attitudes against blacks and its effects on blacks’ self-esteem, there are a number of studies that report deleterious effects of blacks’ perceptions of being the victim of unfair treatment or prejudicial behaviors on their self-esteem and psychological well-being (Yinger 1986; Diaz, Ayala et al. 2001; Swim, Hyers et al. 2001; Maka, Poonb et al. 2007; Williams, Neighbors et al. 2008; Williams and Mohammed 2009).

I should note that, although significant, the variance explained by the aggregated white stereotypes measured at the county-level was rather small (only one percent). The main purpose of this study, however, was to test a macro-level theory of the effects of socio-cultural structures on individuals’ self-esteem. According to Liska (1990), when testing social theories of how some characteristics of collective life influence, shape, and pattern individual characteristics, the variance between geographies examined should not be a central focus of concern (Liska 1990). Although the total variance is important for identifying potential points of intervention for social problems research, it is essential to heed the relevant role these social variables have for theoretically and conceptually linking macro and micro theories. The relevance of these variables
should not be measured only in terms of the proportion of total variance they explain, since the “explained variance, ‘little or large,’ is crucial in linking theory across societal and individual levels of analysis (Liska 1990:298”).

In addition to affecting blacks’ self-esteem directly through reflected appraisals and internalized positive or negative values, stereotypes, as a socio cultural structure, may negatively affect individuals’ self-esteem by creating environments of concentrated poverty and wealth. These environments, in turn, have the capacity to influence access to social and economic resources, and the opportunity to engage in a variety of social roles and social interactions conducive to a more positive development of the self. Next, I discuss how neighborhood context, as a proximate element, may mediate the relationship of whites’ positive stereotypes with blacks’ self-esteem.

**Proximate Elements: Objective and Subjective Neighborhood’s Context**

The index of neighborhood affluence, a proximate element, partially mediates the relationship of whites’ positive stereotypes with blacks’ self-esteem. Whites’ positive stereotypes toward blacks at the county level may influence the implementation of certain housing and employment policies (e.g. land use restrictions, incentives to business to invest in minority neighborhoods) and reduce discriminatory practices in housing, lending markets, and employers, all of which may in turn facilitate blacks’ social mobility and/or access to more affluent neighborhoods. In a more direct way, blacks’ experiences with discriminatory behaviors in housing markets or when looking for a job may be more prevalent in neighborhoods within counties where whites hold more negative stereotypes against blacks. In separate analyses not included in this study, I found lower levels of self-esteem among participants who reported ever
having been refused a job because of their race. Institutional inequality in accessing jobs may pose limits in the development of personal efficacy and overall self-esteem (Hughes and Demo 1989). In addition, more affluent neighborhoods have better infrastructural elements that in turn can determine that better quality and greater amount of economic resources are available to individuals (Ellen, Mijanovich et al. 2001; Galea, Freudenberg et al. 2005). Higher levels of black self-esteem are then, potentially, the result of better quality education and greater and better working opportunities, both conditions that provide individuals with greater numbers of opportunities to acquire skills and develop positive self-esteem levels in a variety of contexts and through a more diverse set of roles. In addition, the interaction of blacks with social institutions (e.g. health services providers, schools, work environment) in counties where stereotypes held by whites are more positive, may also influence the development of higher levels of self-esteem (Rosenberg 1979) as blacks perceive they are being treated with respect and valued as worthy members of society. Interactions with social others through social institutions have the potential to provide individuals with the opportunity to see themselves through the eyes of members of the larger social context to which they belong. The higher levels of self-esteem among blacks living in counties where whites hold more positive attitudes may be the result of more positive reflected appraisals from others in social institutions.

The lack of significance of neighborhood stability in Model 3, Table 4b indicates no mediating role of this variable in the relationship of whites’ stereotypes toward blacks and blacks’ self-esteem. The higher levels of self-esteem associated with higher indices of stability showed in bivariate associations (Bivariate Models, Table 3) may be related to the opportunity to establish closer and long-lasting relationships in more stable neighborhoods. These relationships in turn can become important sources of social support and venues for the transmission of the
socio-cultural history of a community (Macintyre, Ellaway et al. 2002). This is particularly relevant for blacks, for whom transmission of their community’s political, economic, and religious history is highly regarded and considered to be part of their individual identity (Demo and Hughes 1990). People in stable neighborhoods seem to engage more in their community activities, which in turn may enhance their self-esteem development. Studies have shown positive and significant associations between engagement in civic activities at the neighborhood-level and levels of self-esteem (Haney 2006). Similarly, studies of blacks’ self-esteem have shown the importance of religious activities, and religious figures as sources of higher self-esteem (Hughes and Demo 1989; Demo and Hughes 1990). Furthermore, separate analyses not included in this study showed higher levels of self-esteem significantly associated with greater participation in civic activities in their neighborhoods, however, associations with participation in religious activities was not significant. It is possible that more stable neighborhoods provide participants in this study with more opportunities to engage in a variety of social roles where they are more active participants in their community’s activities, and the resultant sense of agency may positively enhance the development of higher levels of self-esteem. Through agency, individuals gain a sense of self-efficacy and self-knowledge that stimulates the use of new and old acquired skills associated with future and more successful outcomes (Wells 2001).

The negative effect of foreign populations on black self-esteem is a more puzzling finding. Based on the selectivity motivating factor of the social comparisons perspective, one could hypothesize that blacks residing next to other minority groups—with lower levels of education and similar histories of disadvantage—might present higher levels of self-esteem. A review of blacks’ self-esteem showed that social comparison with other economically disadvantaged blacks does not affect blacks’ self-esteem negatively (Simmons, Brown et al. 1978).
Two factors may be related to the lower self-esteem of blacks residing in neighborhoods with a large foreign population index: the first, related to the process of social comparisons and the second, related to internalized negative stereotypes. Employment as a source of social identify and self-worth is an important source of social comparisons (Porter and Washington 1989). Despite blacks’ higher levels of education, compared to Latinos in this sample, they presented higher unemployment rates. Blacks in neighborhoods with larger indices of foreign populations –including Latinos-- may feel forced to compare themselves to this group, and these comparisons may result in lower levels of self-esteem. The effects of social comparison on an individual can be determined by the esteem-relevance of the social comparison, and by the degree of control in attaining the dimension of social comparison (Major, Testa et al. 1991; Major, Sciacchitano et al. 1993). In the process of social comparison, it is better for the self-esteem of the individual when the targets of comparison are better-off individuals from an out-group than better-off individuals from an in-group (Major, Sciacchitano et al. 1993). For instance, in terms of socio economic status, blacks’ self-esteem may be less affected by comparing themselves to better-off whites than to other minority group members who are better off because the majority out-group can be discarded as not self-relevant for comparison –given the history of institutional and inter-personal racism. Previous studies (Hughes and Demo 1989; Major, Testa et al. 1991; Major, Sciacchitano et al. 1993) have reported insignificant associations of black’s’ social comparison with more advantaged whites; however, no studies had reported potential negative effects of social comparisons with other minority groups, as those observed in this study. Although the selectivity in both the selection and use of social comparison information may protect the self-esteem of disadvantaged individuals (Major, Sciacchitano et al. 1993), there are situations where individuals are forced to engage in social comparisons even if
the outcome is detrimental for one's self-esteem (Morse and Gergen 1970). Blacks in our sample may find themselves forced to compare their social standing with other minority members in their neighborhood as their similarities are greater than their potential differences, given their racial/ethnic background. It is also possible that higher unemployment rates among blacks relative to Latinos—a less advantaged group—may intensify or elicit internal blaming processes among blacks related to their unemployment status. Studies have shown that attributing personal failures and lack of success to internal causes (e.g., individual skills) is associated with lower levels of self-esteem, while attribution to external causes, such as institutional discrimination and lack of opportunities, can protect individual self-esteem (Dion and Earn 1975; Crocker and Major 1989). In separate analysis not shown, blacks with lower self-esteem, in this study, attributed significantly higher individual responsibility to racial inequality in society rather than to institutional factors.

Lower levels of self-esteem have also been found among individuals who perceive greater levels of threat (Crocker, Thompson et al. 1987). Latinos, a rapidly growing group in the 1990’s when the MCSUI data were collected, represent an economic threat to blacks (Markert 2010). Blacks living in neighborhoods with higher foreign population indices may be low-skilled, thus augmenting their sense of threat (for taking ‘their’ jobs) toward Latinos (Markert 2010). A recent study using the LASUI (MCSUI data for LA only) found that blacks reported greater racial animosity toward Latinos when they had greater contact with poorer, less educated Latinos (Cho and Baer 2011).

A second factor potentially associated with the lower self-esteem among individuals residing in neighborhoods with higher foreign population indices may be related to the internalization of negative values perceived from Latinos. Oliver & Wong (2003) reported greater negative
stereotypes among blacks, Latinos, and whites against other minority out-groups in an analysis using the MCSUI data. Negative stereotypes against minority out-groups were more likely to increase as the size of the in-group got larger. From this finding, it can be reasoned that the self-esteem of blacks living in neighborhoods with larger concentrations of Latinos was being doubly jeopardized: by negative stereotypes from the large society at the county-level and by negative stereotypes from other-minority groups at the neighborhood level. Unfortunately, data size used for this study did not allow the testing of this multi-level interaction, and this hypothesis was not further tested. In addition, blacks residing in neighborhoods where Latinos were the majority out-group may have lacked the social support commonly encountered in black communities (Hughes and Demo 1989; Demo and Hughes 1990) to shield them from the pervasive effects of negative socio-cultural images with which they may be represented in society.

Similar to the objective measures of neighborhood, the subjective measure of neighborhood used in this study, used as a proximate element, was shown partially to mediate the relationship of stereotypes with self-esteem. According to the multiplexity dimension of the self, individuals’ levels of self-esteem are influenced by the context where self-esteem is measured. Quality of ones’ neighborhood may affect individuals’ self-esteem by internalized feelings of disorder and abandonment (Ross and Mirowsky 2001). The quality of ones’ neighborhood also reflects the reputation of the area, which may enhance self-esteem levels as a social indicator of status. Likewise, the reputation of an area can also be a deciding factor for financial and other marketing institutions when evaluating whether to invest or not in a neighborhood, which, in turn, may affect the infrastructure of the neighborhood (Ellen, Mijanovich et al. 2001). Negative perceptions of ones’ neighborhood may also affect self-esteem by limiting social interactions with neighbors. Studies have shown that perceptions of a neighborhood’s disorder may inhibit
social interactions among its residents (Truong and Ma 2006; Beard, Cerda et al. 2009). Although not very common, a couple of studies report significant associations between an individuals’ self-esteem and a perceived characteristics of ones’ neighborhood (Kaplan 1971; Haney 2006).

**Individual’s Socioeconomic Status**

Although not mediating factors, given the importance of social position for social identity, I discuss the significant effects of SES on black’s self-esteem. Previous studies have reported contradicting findings (Rosenberg and Pearlin 1978; Demo and Savin-Williams 1983; Staples, Schwalbe et al. 1984; Pallas, Entwisle et al. 1990; Wiltfang and Scarbecz 1990) in the associations between socioeconomic status and levels of self-esteem. It has been hypothesized that due to their awareness of discriminatory practices that place them in an unfair position for social mobility, blacks do not derive a strong sense of self-worth from social class and work related factors, as a theory of the self would predict. Rather than deriving a strong sense of self-worth from socioeconomic success, it is hypothesized that black self-esteem develops through interpersonal relations with extended families, friend and church-based social networks (Demo and Savin-Williams 1983; Demo, Small et al. 1987). Results from this study show a strong and significant association between self-esteem and both levels of education and family income. The strong relationship could be associated with blacks residing in neighborhoods with high percentages of their own group. Some authors state that SES factors become relevant for self-esteem when blacks live in consonant environments –environments with large percentages of people similar to them. Consonant environments protect individuals from negative assessment
from society at large and provide more realistic objects for social comparison (Rosenberg and Pearlin 1978; Rosenberg 1979).

Finally, results from the last model indicate the strength of the associations between self-esteem and neighborhood foreign index, subjective perceived quality of ones’ neighborhood, and individuals’ socioeconomic status. These findings highlight the importance of social status for blacks’ self-esteem. Based on the previous discussion on the effects of neighborhood with high foreign population indices on self-esteem, and on the fact that neighborhoods with high concentration of minorities (including foreign populations who are largely Latinos and Asians) are for the most part economically disadvantaged (Frey and Farley 1996; Darden, Bagaka's et al. 1997; Allen and Turner 2012), it can be suggested that blacks residing in these neighborhoods are economically disadvantaged as well.

In sum, the social standing of blacks in society—whether measured by the economic and social resources to which blacks have access in their places of residence, or by the perceptions that blacks hold about the quality of their neighborhoods, or by the level of education and family income of blacks—has important consequences for the self-esteem of blacks adults.

LIMITATIONS
The findings of the present study must be interpreted in light of a number of limitations. The sample was not a nationally representative one; it included only selected geographic areas from Atlanta, GA; Boston, MA, and Los Angeles, CA. In addition, data were not collected homogeneously across the three metro-areas. Particularly problematic was sample differences in data collection of the self-esteem variables in Los Angeles-metro area compared to both Atlanta-
and Boston-metro areas. Therefore, additional studies are needed to examine the generalizability of these findings. This study used cross-sectional data; therefore, the temporal sequence between predictors and outcome cannot be determined to support causal inferences. Similarly, the use of cross-sectional data does not permit us to examine exposures over the life course or the stability of the aggregate variable over time and its effects on the level-1 outcome. This was a secondary data analysis. Since the MCSUI study was not specifically designed to examine health related factors, the measures of health used may have a number of limitations. For instance, the measure of self-esteem included only four items, out of the ten the original scale is composed of, which may have more limited reliability than if the whole scale had been used. Given the independent agencies conducting the study in the four cities where the MCSUI was completed, there was not a uniform system of data collection, and data availability varied by city. This lack of uniformity produced patterns of missing data that reduced greatly the possibility of more complex analyses (e.g. interactions between levels) that could have offered more insights into the processes in which social structure affects self-esteem. In addition, although the four-step approach used to test mediation is a common approach used by researchers, this approach does not test for the significance of the indirect pathway (path a and path b) (MacKinnon, Fairchild et al. 2007).

Notwithstanding these limitations, the present study is the first, to our knowledge, to examine associations between social and cultural values and individuals’ self-esteem, and to test the mediating effects of neighborhood context, both objective and subjective measures of it.
CONCLUDING REMARKS

The major goal of this study was to examine the effects of socio cultural structures on individuals’ self-esteem using analytical methods that theoretically and empirically link macro-to-micro theory. To accomplish this goal I used the theoretical principles early suggested by House (1981) to examine the effects of socio cultural structures on individuals’ psychology, and self-esteem principles and social theory from a number of social researchers (Rosenberg 1979; House 1981; Gecas and Schwalbe 1983; Kohn 1989; House and Mortimer 1990). Psychosocial theories have postulated a dynamic interplay between social-structural conditions and self-esteem; however, work exploring associations between social structures and self-esteem has failed to capture the complexity of these associations by using oversimplified measures of social-structure, usually treating them as control variables (Wells 2001). Few studies have linked micro- and macro-level theories to examine potential effects of socio cultural structures on some dimension of the self-concept, usually related to self-efficacy; and no study was found that examined a contextual measure of whites’ stereotypes toward blacks, as an aggregated variable, and its association with individuals’ levels of blacks’ global self-esteem.

The macro socio cultural measure used in this study was county-level whites’ positive stereotypes toward blacks aggregated by taking mean scores of the stereotypes scale at the county-level. A number of previous studies have concluded that blacks’ self-esteem seemed to be unaffected by the opinions and valuations from majority out-groups; however, no study had empirically examined this hypothesis. The findings presented here not only add to the literature on blacks’ self-esteem, but also enrich macro-to-micro theory going beyond specialized analyses that narrow their interest to either micro or macro analysis. This study advances the literature on self-esteem by providing an empirical test of the potential effects of positive stereotypes held by
whites toward blacks on blacks’ self-esteem. Findings from this study not only show the significance of this measure on blacks’ self-esteem, but also go further and seek to untangle the ways society’s values may affect individual’s psychology. In line with the proposed hypotheses, I confirm the power of socio-cultural contexts on individual’s self-esteem through the capacity for shaping access to material resources at the neighborhood-level, and by providing references of social success to which all members of society, consciously or not, try to achieve in their process of self-esteem development.

The significant effect of whites’ positive stereotypes at the contextual-level on blacks’ self-esteem also points to the need to develop campaigns to reduce the reproduction and maintenance of negative stereotypes toward minority groups. Public health campaigns that support and advocate for more tolerant behaviors and attitudes that in turn facilitate the reduction of negative stereotypes, most of which are based on false assumptions and/or beliefs, should not only be directed at the individual-level, but also at the social- and contextual-levels. Therefore, future studies should examine what social-contextual factors may be associated with whites’ positive stereotypes about minority groups. Identifying contextual factors that can be the focus of positive stereotype promoting campaigns can be particularly helpful in preventing future generation’s perpetuation of negative stereotypes based on false assumptions and/or beliefs. Social psychological studies have suggested that environmental messages and societal structures (i.e., residential segregation, school segregation, occupation stratification, and explicit norms of prejudice) are key factors in the formation of children and in the reinforcement of a group’s stereotypical contents and future solidification of prejudicial attitudes and behaviors (Pauker, Ambady et al. 2010).
REFERENCES


CHAPTER 3: SOCIAL STRUCTURE AND BLACKS’ SELF-ESTEEM: RACIAL RESIDENTIAL SEGREGATION AND THE MEDIATING ROLE OF OBJECTIVE AND SUBJECTIVE NEIGHBORHOOD FACTORS
INTRODUCTION

Early theories of self-esteem had hypothesized lower self-esteem among members of minority groups, compared to the majority group, due to their social position in the lowest strata of society (Oates 2004). The reported lower self-esteem of blacks, was hypothesized to be related to their restricted access to social and economic resources, and feelings of inferiority elicited by anti-black prejudice and discrimination (Oates 2004). However, empirical studies found either no self-esteem differences between blacks and whites or higher levels of self-esteem in blacks compared to whites (Foster and Perry 1982; Porter and Washington 1989; Imani 1996). To reconcile the conflict between theory and empirical evidence and to understand the paradox and apparent lack of effect of social structures of inequality on blacks’ self-esteem, some authors proposed theoretical revisions to the self-esteem theory (Rosenberg 1975; Porter and Washington 1979; Porter and Washington 1989).

Consonant context is a theoretical perspective proposed by Rosenberg to understand the paradoxical high levels of self-esteem among blacks (Rosenberg 1975). Contextual consonance is the density to which others surround an individual with similar characteristics (e.g. race/ethnicity, socioeconomic status, gender, culture) as her/himself (Rosenberg 1975). Rosenberg’s consonant context perspective proposes that racially consonant environments enhance self-appraisals and social comparisons, and provide a buffer that protects individuals from the unfavorable effects of negative reflected appraisals and social comparisons that may result when minority members compare themselves to others in a higher social standing (Rosenberg 1972).

The consonant environments theory of self-esteem has been tested widely in educational settings (e.g. schools and colleges) (Oates 2004). However, there is a lack of studies that
examine associations between consonant environments and self-esteem in social contexts outside of schools and colleges. In this paper, I test the consonant context perspective using local social contexts different from educational settings. The main purpose of this study is, thereby, to test Rosenberg’s proposition that contextual consonance enhances self-esteem by examining the effects of racial residential segregation on blacks’ self-esteem.

Consonant Contexts

Consonant context is a perspective of self-esteem theory proposed by Rosenberg to understand the paradoxical high levels of self-esteem among blacks (Rosenberg 1975). Consonant context refers to the match between contextual and individual characteristics; thereby, consonant or dissonant environments are defined in terms of individual characteristics (Rosenberg 1975). Rosenberg’s consonant context perspective proposes that racially consonant environments enhance self-appraisals and social comparisons among members of minority groups (Rosenberg 1975). Through the process of self-appraisals, individuals look for references of valid and successful social behavior in their social context (Porter and Washington 1993). Consistent with the principle of reflected appraisals, despite institutional discrimination and social inequality, members of minority groups perceive unsuccessful outcomes of their actions as negative reflections on themselves, prompting low self-esteem (Porter and Washington 1993). Social comparisons involve self-evaluative processes in which external social evaluations are incorporated into the self-concept. It is hypothesized that when members of minority groups (e.g. racial minority and ethnic groups) engage in self-evaluations, they compare themselves to social others who represent social values and standards of success –frequently more advantaged members of the majority group. Lack of social and economic resources to pursue successful
outcomes—as those seen in the majority group, thereby elicits negative self-evaluations, feelings of failure and lower self-esteem (Rosenberg 1979; Porter and Washington 1993).

According to Rosenberg (1972), characteristics of the current context where individuals are embedded have particular relevance during the processes of self-appraisals and social comparison. Dissonant social contexts might lead to lower self-esteem when more advantaged out-group members become reference points for social comparison and reflected appraisals. It becomes more difficult for individuals to obtain group confirmation of self-attitudes in dissonant environments (Rosenberg 1975). In a review of blacks’ self-esteem research, Rosenberg & Simmons (1972) noticed that, in the majority of these studies, blacks and whites lived in highly segregated areas. Blacks in dissonant racial contexts were more exposed to racial prejudice, perceived their race’s standing in society as lower, and experienced more negative effects of growing up in a broken family (Rosenberg and Simmons 1972). The segregated experience, the authors concluded, provided a buffer for black children that protected them from the unfavorable effects of negative reflected appraisals and social comparisons with members in a higher social standing (Rosenberg 1972).

Rosenberg’s theory of contextual dissonance is often proposed to explain the unexpected higher levels of self-esteem among blacks despite their lower social standing in society (Porter and Washington 1979; Oates 2004). During the processes of social comparison and reflected-appraisals, blacks and whites are highly likely to chose a reference person (or group) of the same race and general social background because both groups tend to live in consonant contexts (Rosenberg 1979; Porter and Washington 1989). The role race plays in influencing self-esteem in processes of self-appraisals and social comparisons is diminished because of consonant context effects (Rosenberg 1975). In addition, segregated environments seem to insulate members of
minority groups from the deleterious effects of macrosocial patterns of racism and prejudicial behaviors from the wider society (Porter and Washington 1979; Porter and Washington 1993; Halpern and Nazroo 2000). Consonant environments seem to enhance levels of self-esteem positively by the quality of interpersonal relationships and feelings of belongingness created in local contexts (Porter and Washington 1979; Rosenberg 1979; Gecas 1982; Gecas and Burke 1995). Consonant contexts nurture individual self-esteem by providing enriching relationships as a source of support, values, and validation (Rosenberg 1979). Reflected appraisal and social comparisons are therefore especially favorable in consonant environments (Rosenberg 1979).

The potential benefit of consonant contexts on self-esteem has been examined, particularly in educational settings, with conflicting results. Authors report both higher (Sedlacek 1987; Nottingham, Rosen et al. 1992; Oates 2004) and lower (Allen 1987) levels of self-esteem among black students when compared to white students in college.

Social Structure and Self-Esteem: The Effects of Racial Residential Segregation

Unlike psychological perspectives that refer to individuals’ self-esteem as a trait; a sociological perspective of self-esteem consider it as a dynamic process of continuous interactions between individuals and their social contexts (Crocker and Quinn 2000). Larger social contexts and social structures influence the development of self-esteem by facilitating and/or inhibiting autonomous action and the individual’s potential for efficacious actions (Gecas and Schwalbe 1983). Social scientists have stressed the significant role social contexts and macro-social structures have on self-esteem (Gecas 1972; Gecas and Schwalbe 1983; Rosenberg, Schooler et al. 1995; Crocker 1999; Crocker and Quinn 2000), yet few studies have empirically examined the link between the two. Structural conditions such as those created by racial
residential segregation have the capacity to influence self-esteem by sorting out individuals in geographic areas where the distribution of material and nonmaterial resources are not equivalent. Patterns of racial residential segregation can be an influential factor in the individual’s process of identity verification.

Scholars of urban and residential segregation agree that racial residential segregation is a macro-level source of racial/ethnic inequities through which minority groups encounter a number of obstacles to access equal opportunities (Massey and Denton 1988; Farley and Frey 1994; Massey, Gross et al. 1994). Despite the passage of the Fair Housing Act in 1968, high levels of racial segregation are still a defining feature of large urban settings in the U.S., and a key factor in the production and maintenance of urban inequality and concentrated poverty for non-white groups, particularly blacks (Alba, Logan et al. 1999; Krysan and Farley 2002).

Social-structural conditions, such as racial segregation, have the potential to affect individuals’ self-esteem by creating “underclass communities” (Massey and Denton 1993) where an individuals’ sense of worth-based self-esteem is affected by feelings and perceptions of social exclusion, and by severely limiting access to basic social and material resources necessary to enhance one’s self-concept. Racial residential segregation disproportionately and adversely affects minority groups by concentrating poverty, affecting the quality of neighborhood social and physical environments, and limiting individual socio-economic attainment and upward mobility (Collins and Williams 1999). Families residing in segregated areas have limited options to obtain economic independence due to their isolation from important resources such as quality education, safety, wealth, and employment opportunities (Wilson 1987).

Racial residential segregation organizes racial and ethnic groups into different neighborhoods producing a spatial distribution that highly correlates with a distribution of health
risk factors and resources. This distribution, in turn, places minority groups at a disadvantaged position compared to white groups (Williams and Collins 2001; Schulz, Williams et al. 2002; Acevedo-Garcia and Lochner 2003). A common hypothesized link between racial residential segregation and individual level outcomes is through the effects that segregation has on the social and economic local context where an individual resides (i.e. neighborhoods), and the effects on individual social mobility (Acevedo-Garcia, Lochner et al. 2003). Racial residential segregation disproportionately and adversely affects minority groups by affecting the quality of neighborhoods’ social and physical environments, and by restricting individual socio economic attainment and upward mobility (Collins and Williams 1999). Racial residential segregation organizes racial and ethnic groups into different neighborhoods producing a spatial distribution that is highly linked with distribution and access to material and non-material resources needed for the healthy development of self-esteem.

**Neighborhoods and Individuals’ Socioeconomic Status**

Neighborhoods are influential contexts in human development, including psychological well-being and self-esteem (Jason and Robert 2000). Whites and minority groups in the United States live to a great extent in separate neighborhoods. The majority of the neighborhoods where members of minority groups reside have a number of disadvantages such as lower quality in education, housing, health care, and other social and cultural services; therefore, opportunities for quality of life and self-enhancement are lower compared to those found in neighborhoods where majority groups concentrate (LaVeist 1989; Collins and Williams 1999).
I examine the effects of neighborhoods on self-esteem using two potential pathways (Ellen, Mijanovich et al. 2001; Macintyre, Ellaway et al. 2002; Galea, Rudenstine et al. 2005): neighborhood institutions and resources and neighborhood-global quality and/or reputation.

Neighborhood institutions and resources include primary infrastructural elements, such as the quality of housing, employment, education, and access to transportation, recreation, and social and health services. Neighborhoods’ with good quality infrastructure provide individuals with a greater variety of social contexts where to enhance their self-esteem by engaging in different social roles (e.g. student, worker, husband/wife, community leader). Greater opportunities to engage in various social roles, in turn, improve chances for upward social mobility and positioning in more prestigious positions in the social structure (Burke 2004).

Neighborhood’s global quality and/or reputation of an area involve not only the residents’ perceptions of their neighborhoods, but also how others, including financial and investing institutions, perceive it. How residents and outsiders perceive an area in turn “may influence the infrastructure of the area, the self-esteem and morale of the residents, and who moves in and out of the area (Macintyre, Ellaway et al. 2002:131).”

Socio economic status influences the place where individuals are located in their society’s social structure and thus can determine access to social and economic advantages, resources, opportunities, power, and esteem (Wells 2001). Studies on social class vary in their focus and methodology, depending on the social perspective used. A Weberian analysis of social class focuses on positions of wealth, power and prestige; a Marxian view has a larger focus on employment and individual self-realization; the status attainment perspective focuses on the social prestige assigned to education, work, and wealth; while a cultural perspective focuses “on the social conditions and settings within which people live – housing, possessions, value and
ideologies, lifestyles, opportunities, and neighborhood composition (Wells 2001:31).” It has been theorized that socio economic status is an influential factor for the self-esteem of individuals who place high value on social status (i.e. education level, work prestige); and/or individuals who live in social contexts where social position is an important piece of external information about self-performance and self-worth (Rosenberg and Pearlin 1978; Staples, Schwalbe et al. 1984; Crocker and Major 1989; Gecas and Seff 1989; Wells 2001).

THEORETICAL FRAMEWORK

Guided by House’s (1981) “social structure and personality” approach and Rosenberg’s consonant context perspective (Rosenberg 1975), this chapter examines how levels of racial residential segregation influence the self-esteem of blacks. Specifically, I examine how racial residential segregation, a macro-social level factor and determinant of consonant contexts, influences self-esteem at the individual level through the distribution of social and economic resources at an intermediate level, i.e., neighborhoods. I follow House’s (1981) theoretical principles, which are defined as the component principle, the proximity principle and the psychological principle (House 1981). Influenced by early work (i.e., Wirth 1938) on the effects of the city on all aspects of human life, House emphasized the need to examine the effects of place of residence on individual psychology and behavior. Acknowledging the need for intermediate factors to fully comprehend the mechanism through which place affects individuals, House proposed to use a symbolic interactionist perspective. Based on the work of Gans (1962), House argued that physical spaces have the capacity to affect individuals by influencing the types of social environments and social networks that are built within those physical boundaries.
Building on this conceptual model and empirical literature, I examine three major research questions (Figure 1).

First, I examine whether racial residential segregation is associated with blacks’ self-esteem. Rosenberg’s consonant context perspective predicts a protective effect of segregated environments on self-esteem for blacks. However, this link has never been tested at the neighborhood level, and given the deleterious social and economic consequences of racial residential segregation on neighborhoods, it is not clear what the effects of racial residential segregation on blacks’ self-esteem is. The first research question of this paper, therefore, tests two conflicting hypotheses: based on Rosenberg’s consonant context theory, I hypothesize that higher levels of segregation are associated with higher levels of self-esteem among blacks; alternatively, based on the sociological literature showing the deleterious social and economic effects of segregation on neighborhoods and ultimately individuals (Massey, Condran et al. 1987; Massey 1990; Jargowsky 1996) it is hypothesized that self-esteem levels will be lower among blacks living in more segregated areas.

Next, I test specific neighborhood pathways through which racial residential segregation may affect blacks’ self-esteem. I hypothesize that relationships between blacks’ self-esteem and racial residential segregation are mediated by objective and subjective neighborhood factors. Objective neighborhood factors include a neighborhood’s affluence level, stability and foreign population; a subjective neighborhood factor is measured by individuals’ perceptions of their neighborhood’s quality of living.

Lastly, considering the relevance of socioeconomic position to self-esteem, I test the mediating effects of blacks’ socioeconomic status on the segregation-self-esteem association. Figure 1 presents the conceptual model guiding this paper. First, I assess relationships between
social structures and individuals’ (i.e. racial residential segregation and blacks’ self-esteem) (path c); then I examine the influence of this social structure on a proximate social context (neighborhoods’ socio economic and demographic features (path-a[n])); and on proximate individuals’ factors (i.e. perceived neighborhood quality and socioeconomic status) (path-a[i]). I also test for the influence of these contextual and individual proximate factors on self-esteem (path-b[n] and path-b[i]); and the role of these proximate factors as intermediate elements between social structure and self-esteem (path c’).
Figure 1. Hypothesized pathways mediating relationships between racial residential segregation and blacks’ self-esteem
METHODOLOGY

Sample and Measures

Data were abstracted from two sources at three levels: (1) individual-level data from the Multi-City Study on Urban Inequality (MCSUI) and contextual data from the 1990 U.S. census including (2) census tracts and (3) counties. Since the MCSUI data include geographic identifiers at the tract level, individual-level data from the MCSUI were linked to tract level administrative data (derived from Census data) and to county-level racial residential segregation measures (using population numbers derived from Census data). The data for this study, therefore, include individuals (level-1) nested within census tracts (level-2), and these in turn nested within counties (level-3).

The MCSUI is a cross-sectional, stratified area probability household survey that centers on interviews with 8,915 adults 21-years-old and older from 1992 to 1994, in four metropolitan areas that include Atlanta, Boston, Detroit and Los Angeles. Given the focus on urban inequality, MCSUI data were oversampled in census tracts with high proportions of poor and minority residents. The MCSUI was designed to examine the ways in which shifting labor markets, racial attitudes, stereotypes, and racial residential segregation patterns act separately and in combination to maintain urban inequality. It is, thus, a very unique, rich dataset for examining the dynamics of inequality, segregation and racial attitudes (Bobo 2001).

The sample for this analysis was restricted to respondents who were asked the self-esteem questions and who identified themselves as black non-Latinos which included participants in the Atlanta (n=816), Boston (n=442), and Los Angeles (n=666) metropolitan regions (i.e. a total N=1924). In addition, LA restricted self-esteem data collection to participants who were currently working or had looked for work during the previous 10 years (n=666, 60 percent of total blacks
in LA). In order to have a homogeneous sample from the three metro-regions, the same working restriction was applied to the Atlanta and Boston sample. After this exclusion the final sample included \( N = 1649 \) blacks: \( n = 620 \) (76 percent) blacks from Atlanta; \( n = 363 \) (82 percent) blacks from Boston; and \( n = 666 \) (60 percent) blacks from LA. Two main reasons differentiated black participants who were currently working or had looked for work during previous 10 years from those who were not, they were of older age and more likely to have health related problems. 63 additional participants with refused/don’t know/missing answers to any of the self-esteem questions were also excluded. There was a low proportion of missing data (<2%). HLM 6.08 provides two options for handling missing data when running 2- and 3-level hierarchical linear models: listwise deletion at either the MDM creation stage or when the analysis is run (Raudenbush, Bryk et al. 2004). Deletion at the analysis stage was chosen for these analyses; therefore, deletion was performed based on the variables included in the actual models run.

**OUTCOME VARIABLE**

**Self-esteem**

Global self-esteem was assessed with four items of the validated Rosenberg self-esteem Likert-scale (Rosenberg 1989). The original scale includes 10 items, however, only four items were asked in the MCSUI study. Respondents were asked to rate on four point Likert-type scales ranging from “strongly disagree” (1) to “strongly agree” (4) their level of agreement with the following statements: (1) I do not have much to be proud of, (2) On the whole, I am satisfied with myself, (3) All in all, I am inclined to feel that I am a failure, (4) I take a positive attitude toward myself. Items 1 and 3 were reverse coded so higher values in each item represent higher
levels of self-esteem. The Cronbach’s alpha for the scale was within an acceptable range (0.64) (Floyd and Widaman 1995).

**PREDICTOR VARIABLES**

**Level-3 Racial Residential Segregation**

Racial residential segregation describes the distribution of various groups across units located within larger areas. Therefore, a larger area and its constituting units need to be defined when measuring racial residential segregation. Counties and census tract areas are used in this study to define racial residential segregation. In the United States, counties are politically and economically meaningful units in space. The power distribution between the state government and county governments varies widely from state to state and it is defined by each state’s constitution. The average U.S. county population is about 100,000. Larger areas, such as counties, are typical geographic units where people compete for jobs, resources, and political power. Social systems and distributive processes that specify who or what social categories will have access to these resources and the amount of resources (Burke 2004) may operate at the county-level creating distinct patterns of racial residential segregation. Census tracts are small, relatively permanent statistical subdivisions of a county that generally contain between 1,500 and 8,000 people, with an average size of 4,000 people (U.S. Census Bureau 2000).

Racial residential segregation has five dimensions that describe distinct geographic patterns: unevenness, exposure, clustering, centralization, and concentration (Massey and Denton 1988). Two dimensions were assessed in this study: the evenness dimension measured with the Theil Index and the Dissimilarity Index, and the exposure dimension measured with the Exposure Index.
The evenness dimension of segregation measures whether the spatial distributions of different groups within smaller areas (i.e. neighborhoods) reflect or are similar to their spatial distribution within the larger area (i.e. counties). The greater the uneven distribution of a group across neighborhoods, the more segregated that group is. The most common measure of evenness used in health studies is the dissimilarity index (Collins and Williams 1999; Acevedo-Garcia and Lochner 2003); however, this index can only compare the distribution of two groups at a time within the geographic areas of interests. This is of concern considering that the U.S. has become a more racially diverse place over the past few decades, in part due to the rapid increase of Asian and Latin American immigrants, and also due to a decline in fertility rates among white and black populations (Iceland 2004). Looking at the distribution of only two groups at a time can overlook the true distribution of populations over a specified geographic area. This study addresses this gap in research by assessing the evenness dimension of racial residential segregation using both the Dissimilarity Index and the multi-group measure of evenness called the Theil Index.

The Dissimilarity Index measures the percentage of a group’s population that would need to move between neighborhoods (i.e. tracts) for each neighborhood to have equal population proportions as the larger area (i.e. counties). In this study, I will assess the even spatial distribution of blacks and whites using the Dissimilarity Index. The index ranges from 0.0 (complete integration) to 1.0 (complete segregation) (U.S. Census Bureau 2000). The Theil Index measures the spatial distribution of ethnic groups among units (tracts) in a larger area (county); it shows the extent of racial diversity in an area. The measure varies between 0 (perfectly even: all tracts have the same racial composition as the county area integration) and 1 (perfectly uneven/seggregated: all tracts have only one population group). To capture 100% of the
population in each county, the Theil index calculations were based on numbers of people in five exhaustive and non-overlapping racial groups as defined in the 2000 U.S. Census (U.S. Census Bureau): Hispanics or Latinos of any race, non-Hispanic whites, non-Hispanic blacks, non-Hispanic Asians and Pacific Islanders, and persons of “other” non-Hispanic race. Lower levels in the Theil index indicate less segregation (i.e. group populations are evenly distributed) (Weinberg, Iceland et al. 2002).

In addition, the exposure dimension of racial residential segregation will be assessed with the Isolation Index. The Isolation Index reflects the possibility that a member of a minority group shares a unit area with another minority group member (U.S. Census Bureau 2000). In this study, I will assess indices of blacks’ Isolation.

Syntax previously created for Stata 7 (StataCorp 2001) to calculate segregation indices was used to compute segregation indices in this study (Reardon 2002). For validity purposes, the Index of Dissimilarity was also calculated using Stata 10 (Reardon 2002) at the county/tract and results were compared with 1990 nationally available and validated indices from the Racial Residential Segregation Measurement Project created by the Population Studies Center at the University of Michigan (Farley Accessed 2010). Correlations between the two indices were high with a Pearson correlation coefficient of 0.98. Measures of racial residential segregation were treated as continuous variables. All segregation indices were treated as continuous variables to measure the evenness and exposure dimensions of racial residential segregation.

**Level-2 Mediator: Neighborhood Indices**

**Definition of Neighborhood**
Census tracts (O'Campo, Xue et al. 1997; Kaufman 2005; Mujahid, Diez-Roux et al. 2007) are commonly used to define neighborhood boundaries. Some researchers have examined how the definition of a neighborhoods’ boundaries may impact research outcomes (Sampson and Raudenbush 1999; Krieger, Chen et al. 2002; Buka, Brennan et al. 2003; Morenoff 2003; Hipp 2007; Mujahid, Diez-Roux et al. 2007) and recommend careful assessment of the geographic unit of analysis to make sure it is appropriate for both the outcome of interest and the structural predictors being used. The unit used to define a neighborhood in this study is census tracts. Census tracts are small, relatively permanent statistical subdivisions of a county that generally contain between 1,500 and 8,000 people, with an average size of 4,000 people (U.S. Census Bureau 2000). I chose to define neighborhood using census tracts because their socioeconomic and demographic characteristics are relatively permanent over time, a feature that combined with its relative small size may promote close social interactions and the establishment of community networks (e.g. civic associations, religious communities) through which individuals have the opportunity to learn about themselves and develop their self-esteem. The permanence and size features also facilitate the clustering of a variety set of social services through which residents are able to interact directly with social institutions representing the values of the larger society (Burke 2004).

Consistent with past macro-level research, factor analysis with Varimax rotation was used to compute indices of neighborhood socioeconomic context. I followed procedures recommended and common in neighborhood literature (Land, McCall et al. 1990; Silver, Mulvey et al. 2002; Messer, Kaufman et al. 2006). Previous studies have identified a number of census variables that, when aggregated, do represent meaningful neighborhood/contextual characteristics of the environment where people live. Based on a review of the most common and theoretically
relevant census variables used in health studies (Messer, Kaufman et al. 2006), I performed a factor analysis with twenty-one census variables at the tract level using Stata 10 (Hamilton 2009). The twenty-one variables grouped together into three component factors that I labeled “neighborhood affluence”, “neighborhood stability” and “foreign populations.” Table 2 displays factor loadings, Eigen values, and cumulative variance explained by the three factors. Three factor scores were then created (Hamilton 2009). The predict command in Stata 10 automatically creates factor scores using the most recent rotate results. Factor scores are standardized to a zero mean and one unit variance, and weighted with factor score coefficients (Hamilton 2009).
Table 1. Items and Factor Loadings for Neighborhood factors at the Tract Level

<table>
<thead>
<tr>
<th>Item</th>
<th>Loadings</th>
<th>Eigen Value</th>
<th>Cumulative variance explained</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1: Neighborhood Affluence</strong></td>
<td></td>
<td>9.264</td>
<td>0.526</td>
</tr>
<tr>
<td>% 18yrs/older with more than high school</td>
<td>0.891</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% non-female headed households</td>
<td>0.826</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% males 16yrs/older in the work force</td>
<td>0.706</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% females 16yrs/older in the work force</td>
<td>0.711</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% households not receiving public assistance</td>
<td>0.874</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% persons not under poverty level</td>
<td>0.814</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% household receiving wages</td>
<td>0.667</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% 25yrs/older with bachelor's degree</td>
<td>0.864</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% 25yrs/older with graduate or higher education</td>
<td>0.709</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% professionals/managerial positions</td>
<td>0.880</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% households received interest/dividends</td>
<td>0.876</td>
<td></td>
<td></td>
</tr>
<tr>
<td>natural log of median household income</td>
<td>0.836</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Factor 2: Neighborhood Stability</strong></td>
<td></td>
<td>2.825</td>
<td>0.728</td>
</tr>
<tr>
<td>% family households</td>
<td>0.908</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% households of married couples with children</td>
<td>0.791</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% in same household in the last five years</td>
<td>0.541</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% non-vacant houses</td>
<td>0.450</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% owner occupied households</td>
<td>0.701</td>
<td></td>
<td></td>
</tr>
<tr>
<td>natural log of median house value</td>
<td>0.345</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Factor 3: Foreign Populations</strong></td>
<td></td>
<td>2.199</td>
<td>0.878</td>
</tr>
<tr>
<td>% households speak Spanish (linguistically isolated)</td>
<td>0.747</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% households speak Asians (linguistically isolated)</td>
<td>0.632</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% foreign born persons</td>
<td>0.916</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Level-1 Mediator**

*Perceived Neighborhood Quality* was assessed with six items that assess the quality of a respondent’s neighborhood. Three of the items were four point Likert-type scale questions (‘never’=1, ‘sometimes’=2, ‘often’=3, ‘always’=4) prompting respondents on the frequency they encountered the following problems in their neighborhoods: (1) City services, such as street cleaning or garbage collection; (2) Housing and property not being kept up; (3) Crime and vandalism. These items were reverse coded so higher scores represent fewer problems in the neighborhood. The remaining items, also on a four point Likert-type scale (‘excellent’=4, ‘good’=3, ‘fair’=2, ‘poor’=1), asked about the quality of the following neighborhood services: (1) Police protection; (2) Public schools; and (3) Neighborhood shopping such as grocery and drug stores (Refer to Table 2 for details). A scale score was created with the six items that ranged from 6-24 where higher scores represented higher levels of perceived quality. The Cronbach’s alpha statistic was within the good range (0.75) (Floyd and Widaman 1995).

*Socio Economic Status* was assessed with years of education modeled linearly, and family income – a five category variable defined as: (1) 0-$9,999: Reference Category; (2) $10,000-$29,999; (3) $30,000-$49,999; (4) $50,000-over; (5) missing.

**Level-1 Confounders**

To control for selection bias and compositional effects I controlled for the following demographics: sex (0=male, 1=female), age in years modeled linearly, marital status (0=married, 1=not married), and nativity status (0=U.S. born, 1=Foreign born).
ANALYTIC STRATEGY

Table 2 shows univariates of predictor and outcomes variables. Model fit was assessed using multi-level modeling techniques. Cross-sectional, three-level, linear regressions for the black self-esteem models were estimated to test the effects of racial residential segregation (level-3) on black self-esteem (measured at the level-1), and the mediating role of proximate objective neighborhood factors (measured at level-2), and subjective neighborhood factors and individuals’ socio economic status (measured at level-1). Models include individuals at level 1 nested within neighborhoods at level 2, and these nested within counties at level 3. The alpha value used was $\alpha=0.05$ on two-tailed tests. The multilevel model takes account of between-group and within-group variance, estimating error terms at both the lower and the higher levels; therefore, data dependence is modeled appropriately and standard errors are more accurately estimated.

Mediation Analysis

To evaluate mediation, I followed the four-step approach recommended by Baron and Kenny (1986) in which a number of regression analyses are run and changes in coefficients are examined after each step. Zero-order relationships between (1) predictor and outcome, (2) predictor and mediator, and (3) mediator and outcome are examined in the first three regressions. Step 4 is conducted only if significant associations are evident in all three regression coefficients described above. Step (4) consists of a multivariate regression analysis with both the predictor and mediator variables predicting the outcome. Mediation is supported if the effect of the mediator remains significant after controlling for the predictor. If the predictor becomes insignificant after including the mediator in the regression then full mediation can be assumed; if
both the predictor and the mediator remain statistically significant then a partial mediation can be assumed (Baron and Kenny 1986).

I used the multistep procedure to test for mediating effects of neighborhood factors (i.e., neighborhood indices of affluence, stability and foreign populations at level-2 and perceived neighborhood’s quality and individuals’ socio economic status at level-1) on the relationship between racial residential segregation and blacks’ self-esteem. As illustrated in Figure 1, I first tested the hypothesis that higher levels of racial residential segregation was positively associated with lower black’s self-esteem, after controlling for individual level confounders (i.e., gender, age, marital status, and nativity) (Figure 1, path c, total effect). In step (2) I, then, regressed each mediating variable (i.e. neighborhood-level factors: objective indices of affluence, stability, and foreign populations; and individual-level factors: subjective perceived neighborhood’s quality and blacks’ socio economic status) on racial residential segregation (Figure 1, path-a[n] and path-a[i], indirect effect). Step (3) consisted of a series of regression analysis with each of the mediating variables predicting the outcome (Figure 1, path-b[n] and path-b[i], indirect effects). The final step (4) consisted of a series of multivariate regression analyses, each including a mediating variable, the predictor, and the outcome (Figure 1, path c’, direct effect). The difference between c and c’ was examined after each regression. Mediation was supported if the effect of the mediating variable remained significant after controlling for racial residential segregation (predictor variable). A full mediation is supported if the predictor becomes statistically insignificant after adding a mediating variable; if both the predictor and the mediating variable remain significantly associated to blacks’ self-esteem, then a partial mediation can be assumed.
A final multivariate regression analysis was conducted with the predictor, all the mediating variables, and the outcome, simultaneously. Testing all mediating variables simultaneously allows to test whether the mediation of each variable is independent of the effect of the other mediators (Baron and Kenny 1986). The difference between c and c’ was also examined after this last regression. Below I provide a descriptive table of the mediating analysis steps. It is worth noting that although the four-step approach used to test mediation is a common approach used by researchers, this approach does not test for the significance of the indirect pathway (path a and path b) (MacKinnon, Fairchild et al. 2007). Testing the significance of the indirect effect, of both a level-2 mediator and a level-1 mediator, on a relationship between a level-3 predictor and a level-1 outcome, such as the one examined in this analysis, involves a level of statistical sophistication that goes beyond the objectives of this study.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step (1)</td>
<td>X → Y; path c; total effect</td>
<td>Table 4</td>
</tr>
<tr>
<td>Step (2)</td>
<td>X → M; path a[n] &amp; path a[i]; indirect effects</td>
<td>Table 5</td>
</tr>
<tr>
<td>Step (3)</td>
<td>M → Y; path b[n] &amp; path b[i]; indirect effects</td>
<td>Table 6</td>
</tr>
<tr>
<td>Step (4)</td>
<td>X + M → Y; path c’; direct effect</td>
<td>Table 7</td>
</tr>
</tbody>
</table>

Multi-level Analysis

A number of three-level multilevel linear regression models were specified to model racial residential segregation using Hierarchical Linear and Nonlinear Modeling (HLM) 6.08, a specialized statistical software designed to analyze hierarchically structured data (Snijders and Bosker 1999; Raudenbush and Bryk 2002; Rabe-Hesketh and Skrondal 2005). Models were
estimated using Empirical Bayes estimates as implemented with HLM 6.08 (Raudenbush, Bryk et al. 2004). To test for random effects, HLM produces a chi-square statistic that tests the significance of the between-group variance. A significant chi-square for the intercept variance of the dependent variable indicates that between-group variance is significantly different from zero and that the intercept term varies across groups (Raudenbush, Bryk et al. 2004). All of the independent variables measured linearly at level 2 and level 1 were centered around the sample’s grand mean, categorical variables were not centered.

I first estimated a Null Model that included only a random intercept to test for the contextual effect of racial residential segregation on blacks’ self-esteem. Intra-class correlation (ICC) coefficients were calculated to measure the proportion of total variance explained by contextual differences, i.e., the extent to which blacks’ self-esteem is similar among those participants that share geographic residential areas (i.e., tracts and counties). Thereafter, I included individual-level confounders (i.e., gender, age, marital status, and nativity) (Confounders Model), racial residential segregation before and after controlling for level-1 confounders (Model 1 and Model 1a), each of the objective neighborhood mediators (Models 2a through 2c), subjective perceived neighborhood quality (Model 2d), individual’s socioeconomic status (Model 2e), and a final model (Model 2f) that included main predictor, all mediators and confounders.

Below I provide a mathematical representation of the models run in this chapter:

**Null Model** will test for self-esteem as a linear function of the area in which participants live represented by the area level random intercept:

\[ Y_{ijk} = \beta_0 X_{0ijk} + \mu_0k + \nu_{0jk} + e_{0ijk} \]
**Confounders Model:** will test for blacks’ self-esteem as a linear function of the area in which participants live represented by the area level random intercept adjusting for individual-level confounders:

\[ Y_{ijk} = \beta_0 X_{0ijk} + \beta_1(gender)_{ijk} + \beta_2 (age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \mu_0k + \nu_{0jk} + e_{0ijk} \]

**Model 1 and 1a:** racial residential segregation random intercept models before and after adjusting for individual-level confounders \((X \rightarrow Y; \text{path } c)\):

- **1:** \( Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(RSI)_k + \mu_{0k} + \nu_{0jk} + e_{0ijk} \)
- **1a:** \( Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(RSI)_k + \beta_1(gender)_{ijk} + \beta_2 (age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \mu_{0k} + \nu_{0jk} + e_{0ijk} \)

**Models 2a through 2e:** racial residential segregation random intercepts models adjusted for neighborhood-level socio economic and demographic context, perceived neighborhood quality, individual-level socio economic status, and individual-level confounders \((X + M \rightarrow Y; \text{path } c ')\):

- **2a:** \( Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(RSI)_k + \tau_1(NAI)_{ijk} + \beta_1(gender)_{ijk} + \beta_2 (age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \tau_2(NSI)_{ijk} + \beta_3(MST)_{ijk} + \mu_{0k} + \nu_{0jk} + e_{0ijk} \)
- **2b:** \( Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(RSI)_k + \tau_2(NSI)_{ijk} + \beta_1(gender)_{ijk} + \beta_2 (age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \tau_3(NFPI)_{ijk} + \beta_3(MST)_{ijk} + \mu_{0k} + \nu_{0jk} + e_{0ijk} \)
- **2c:** \( Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(RSI)_k + \tau_3(NFPI)_{ijk} + \beta_1(gender)_{ijk} + \beta_2 (age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \beta_5(PNQ)_{ijk} + \mu_{0k} + \nu_{0jk} + e_{0ijk} \)
- **2d:** \( Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(RSI)_k + \beta_1(gender)_{ijk} + \beta_2 (age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \beta_5(EDU)_{ijk} + \beta_6(FINC)_{ijk} + \mu_{0k} + \nu_{0jk} + e_{0ijk} \)

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\[ Y_{ijk} = \beta_0 X_{0ijk} + \alpha_1(RSI)_k + \tau_1(NAI)_jk + \tau_2(NSI)_jk + \tau_3(NFPI)_jk + \beta_1(gender)_{ijk} + \beta_2(age)_{ijk} + \beta_3(MST)_{ijk} + \beta_4(NTV)_{ijk} + \beta_5(PNQ)_{ijk} + \beta_6(EDU)_{ijk} + \beta_7(FINC)_{ijk} + \mu_0k + \nu_{0jk} + \epsilon_{0ijk} \]

Where: The individual-level, neighborhood-level, and county-level covariates parameters are represented by \( \beta, \tau, \) and \( \alpha \); and:

- \( i \) = individual participant
- \( j \) = neighborhood cluster
- \( k \) = county cluster
- \( Y_{ijk} \) = self-esteem for the \( i \)th participant in neighborhood \( j \) located in county \( k \)
- \( \beta_0 \) = intercept, it is the overall mean of self-esteem

**Model Predictor**

- \( RSI \) = racial residential segregation index

**Level-1 confounders:**

- Gender = participant’s gender*
- Age = participant’s age
- MST = participant’s marital status*
- NTV = Participant’s nativity*

**Neighborhood Mediators**

- NAI = neighborhood affluence index
- NSI = neighborhood stability index
- NPF = neighborhood foreign populations index

**Level-1 Mediators**

- PNQ = participant’s perceived neighborhood quality
- EDU = participant’s number of years of education
- FINC = participant’s family income*

\( \mu_0k = \) county level residuals which are normally distributed with a mean 0 and variance \( \sigma^2\mu_0k \)

\( \nu_{0jk} = \) neighborhood level residuals which are normally distributed with a mean 0 and variance \( \sigma^2\nu_{0jk} \)

\( \epsilon_{0ijk} = \) individual level residuals which are normally distributed with a mean 0 and variance \( \sigma^2\epsilon_{0ijk} \)

**Level 3 Var:** \( \mu_0k \mid \pi_{ijk} \sim N(0, \sigma^2\mu_0k) \)

Independent across counties \( \sigma^2\mu_0k \) is residual between-counties variance

**Level 2 Var:** \( \nu_{0jk} \mid \pi_{ijk} \sim N(0, \sigma^2\nu_{0jk}) \)
Independent across neighborhoods, independent of $\mu_{0k}$

$\sigma^2 \nu_{0jk}$ is residual between-neighborhoods, within counties variance

* Categorical variables will be expanded in models to include all except referent category

The random-intercept models can be written mathematically as Equations 1, 2 and 3:

$$Y_{ijk} = \beta_{0jk} + \beta_p X_{pijk} + e_{ijk}$$
$$\beta_{0jk} = \gamma_{00k} + \gamma_{0q} Z_{qjk} + u_{0jk}$$
$$\gamma_{00k} = \pi_{000} + \pi_{00s} W_{sk} + r_{00k}$$

Equation 1 states that, for respondent $i$ who lives in neighborhood $j$ further nested within county $k$, the value of the outcome variable ($Y_{ijk}$) equals the sum of the intercept for neighborhood nested within county ($\beta_{0jk}$), the product of the vector Level 1 coefficients ($\beta_p$) and the values of the set of Level 1 independent variables ($X_{pijk}$), and an error term ($e_{ijk}$) unique to the participant.

Equation 2 states that the intercept for neighborhood $j$ nested within county $k$ ($\beta_{0jk}$) is equal to the sum of the average intercept for all neighborhoods $j$ nested within county $k$ holding the independent variables constant ($\gamma_{00k}$), the product of the $q$ Level 2 coefficients ($\gamma_{0q}$) and the set of Level 2 predictors ($Z_{qjk}$), and the random deviation ($u_{0jk}$) unique to the neighborhood nested within level-3.

Equation 3 states the intercept for the county ($\gamma_{00k}$) is equal to the sum of the average intercept for all counties holding the independent variables constant ($\pi_{000}$), the product of the $s$ Level 3 coefficients ($\pi_{00s}$) and the set of Level 3 predictors ($W_{sk}$), and the random deviation ($r_{00k}$) unique to the level-3.

**RESULTS**

Table 2 shows descriptive statistics for the individual-, neighborhood-, and county-level variables. The average score on blacks’ self-esteem was 14.4 (SD=1.9), about two thirds of the participants were female, the average age of participants was 40.1 years (SD=14.8), eight percent
of the sample was foreign born, almost one third was married, and the average level of education was 13 years (SD=2.4). As measured by the indices of Theil, Dissimilarity, and Isolation, average racial residential segregation was 35.8 (SD=8.8), 72.3 (SD=8.3), and 70.9 (SD=13.3), respectively. The mean for affluence, stability and foreign populations indices, -0.66, -0.31, and -0.66, respectively, for neighborhoods were all negative. Participants resided in Atlanta (N=620), Los Angeles (N=666), and Boston (N=357), and represented 242 census tracts (86 in Atlanta, 66 in Los Angeles, and 90 in Boston) and 12 counties (six in Atlanta, one in Los Angeles, and five in Boston), with a mean of seven participants per census tract (range: 1–35 participants).

Bivariate associations of level-1 confounders with blacks’ self-esteem showed that while there were no gender differences, older blacks had significantly higher levels of self-esteem. For every one-year increase in age above the mean (M=14.4), there was a 0.004 increase in self-esteem scores (SE=0.002, p<0.05); non-married blacks had significantly lower levels of self-esteem compared to married ones (β =-0.431 SE=0.049, p<0.0001); a year increase in education above high school was positively associated with higher levels of self-esteem (β =0.162 SE=0.033, p<0.0001); similarly, compared to the lowest category of family income ($0-$9,999), higher income levels were positively associated with higher levels of self-esteem. Higher self-esteem among the foreign-born, when compared to U.S. born blacks, reached significance (β =0.172 SE=0.100, p=0.087).

Crude associations of each of the three indices of racial residential segregation (i.e. Dissimilarity, Theil and Isolation indices) with blacks’ self-esteem showed significant associations only between the Dissimilarity Index and blacks’ self-esteem (refer to Table 5); therefore, subsequent analysis will test mediation of proposed neighborhood and individual level
variables only for the relationship of the Dissimilarity Index of racial residential segregation with blacks’ self-esteem.

Table 2. Blacks' Self-esteem: Sample Descriptives

<table>
<thead>
<tr>
<th>Health Outcome</th>
<th>Descriptives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M or Freq</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>14.36</td>
</tr>
</tbody>
</table>

**Level-3: Predictors**

| Theil Index               | 35.79     | 8.80    | 5.47 | 49.42   |
| Blacks|Whites Dissimilarity Index | 72.33     | 8.26    | 27.73 | 78.63   |
| Blacks’ Isolation Index   | 70.91     | 13.34   | 5.33 | 81.75   |

**Level-2 Mediators**

| Neighborhood affluence Index | -1.32E-09 | 0.990   | -2.583 | 2.059 |
| Neighborhood Stability Index | -1.81E-09 | 0.981   | -3.244 | 2.221 |
| Foreign Populations Index   | 1.17E-09  | 0.962   | -1.549 | 3.642 |

**Level-1 Mediators**

| Perceived neighborhood quality | 18.93 | 3.95 | 7.00 | 28.00 |
| Individual socioeconomic status |     |     |     |      |
| Education in years            | 12.61 | 2.44 | 0.00 | 17.00 |
| Family income                 |     |     |     |      |
| $0-$9,999-ref                 | 477  | 29.0 |     |      |
| $10,000-$29,999               | 582  | 35.4 |     |      |
| $30,000-$49,999               | 221  | 13.5 |     |      |
| $50,000 and more              | 133  | 8.1  |     |      |
| Missing                       | 230  | 14.0 |     |      |

**Level-1: Confounders**

| Sex                        |     |     |     |      |
| Female                     | 1095| 66.7|     |      |
| Male                       | 548 | 33.4|     |      |
| Age in years               | 40.01 | 14.79 | 21.00 | 92.00 |
| Nativity                   |     |     |     |      |
| US Born-Ref                | 1508 | 91.74|     |      |
| Foreign Born                | 135  | 8.26 |     |      |
| Marital Status             |     |     |     |      |
| Married-ref                | 454  | 27.6 |     |      |
| Non-married                | 1189 | 72.4 |     |      |

P<0.10 +; *P<0.05 *; P<0.01 **; P<0.001 ***
Table 3 shows results of associations between the Dissimilarity Index of racial residential segregation and the mediators (i.e. X → M; path a[n] and path a[i] in Figure 1). Racial residential segregation was significantly and negatively associated with neighborhoods’ higher affluence (β =-0.025, SE=0.002, p<0.0001) and higher stability (β =-0.003, SE=0.001, p<0.05); and significantly and positively associated with higher foreign populations (β =0.007, SE=0.002, p<0.0001). Racial residential segregation was also significantly and negatively associated with subjective perceived neighborhoods’ higher quality (β=-0.111, SE=0.015, p<0.0001), and individuals’ higher socio economic status (refer to Table 3 for details).

Table 4 shows results of associations between mediators and outcome (i.e. M → Y; paths b[n] and paths b[i] in Figure 1). Positive and significant associations were found between higher indices of affluence (β =0.245, SE=0.030, p<0.0001) and self-esteem, and between higher indices of stability and self-esteem (β =0.139, SE=0.051, p<0.01 respectively). In contrast, negative and significantly associations were found between higher levels of foreign populations and self-esteem (β =-0.229, SE=0.035, p<0.0001). Positive and statistically significant associations were also evident between higher individuals’ socio economic status and self-esteem (Table 4 provides coefficients, standard errors and p-values for these associations).

Table 5 presents the association of each of three indices of racial residential segregation (i.e. Theil, Dissimilarity, and Isolation) with blacks’ self-esteem separately (i.e. X → Y; path c in Figure 1). No significant associations were found between the Theil Index and blacks’ self-esteem, and between the Isolation Index and blacks’ self-esteem. Only the Dissimilarity Index of racial residential segregation was significantly and negatively associated with blacks’ self-esteem before (β =-0.015, SE=0.006, p<0.05) and after controlling for level-1 confounders (β =-0.015, SE=0.006, p<0.05). Blacks residing in counties with higher levels of black:white segregation (i.e.
residing in neighborhoods that, on average, represented the most uneven distribution of black and white populations compared to county’s distributions) reported having lower levels of self-esteem.
### Table 3. HLM Regression Analysis with Racial Residential Segregation predicting Mediating Variables: $X \rightarrow M$ (paths $a[n]$ and paths $a[i]$)

<table>
<thead>
<tr>
<th>Mediating Variables as Outcomes</th>
<th>Model 2a - Ngh Affluence Index</th>
<th>Model 2b - Ngh Stability Index</th>
<th>Model 2c - Ngh Frgn Population Index</th>
<th>Model 2d - Subjective Perceived Ngh Quality</th>
<th>Model 2e - Individual SES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$SE$</td>
<td>p-value</td>
<td>$\beta$</td>
<td>$SE$</td>
</tr>
<tr>
<td>Level-3: Predictor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissimilarity Index</td>
<td>-0.025</td>
<td>0.002</td>
<td>&lt;.0001 ***</td>
<td>-0.003</td>
<td>0.001</td>
</tr>
<tr>
<td>Education in years</td>
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<td></td>
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<tr>
<td>$0-9,999$-ref</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10,000-29,999$</td>
<td>-0.027</td>
<td>0.008</td>
<td>0.001 **</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$30,000-49,999$</td>
<td>-0.032</td>
<td>0.009</td>
<td>&lt;.0001 ***</td>
<td></td>
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</tr>
<tr>
<td>$50,000$ and more</td>
<td>-0.041</td>
<td>0.009</td>
<td>&lt;.0001 ***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>-0.006</td>
<td>0.010</td>
<td>0.580</td>
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<td></td>
</tr>
</tbody>
</table>

P<0.10 +; *P<0.05 *; P<0.01 **; P<0.001 ***

### Table 4. Regression Analysis with Mediating Variables predicting Blacks' Self-Esteem: $M \rightarrow Y$ (paths $b[n]$ and paths $b[i]$)

<table>
<thead>
<tr>
<th>Blacks' Self-Esteem</th>
<th>$\beta$</th>
<th>$SE$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level-2 Mediators</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighborhood affluence Index</td>
<td>0.245</td>
<td>0.030</td>
<td>&lt;.0001 ***</td>
</tr>
<tr>
<td>Neighborhood Stability Index</td>
<td>0.139</td>
<td>0.051</td>
<td>0.007 **</td>
</tr>
<tr>
<td>Foreign Populations Index</td>
<td>-0.229</td>
<td>0.035</td>
<td>&lt;.0001 ***</td>
</tr>
</tbody>
</table>

**Level-1 Mediators**

| Perceived neighborhood quality   | 0.050   | 0.011| <.0001 ***|
| Individual socioeconomic status  |         |      |         |
| Education in years               | 0.162   | 0.033| <.0001 ***|

| Family income                    |         |      |         |
| $0-9,999$-ref                    |         |      |         |
| $10,000-29,999$                  | 0.628   | 0.059| <.0001 ***|
| $30,000-49,999$                  | 1.002   | 0.075| <.0001 ***|
| $50,000$ and more                | 1.174   | 0.053| <.0001 ***|
| Missing                          | 0.691   | 0.108| <.0001 ***|

P<0.10 +; *P<0.05 *; P<0.01 **; P<0.001 ***
Table 5. Associations between Racial Residential Segregation and Blacks’ self-esteem in Hierarchical Linear Regression Models: X → Y (path c)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Null Model</th>
<th>Confounders Model</th>
<th>Model 1a - X → Y</th>
<th>Model 1b - X → Y</th>
<th>Model 1c - X → Y</th>
<th>Model 1+φ - X → Y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>SE</td>
<td>p-value</td>
<td>β</td>
<td>SE</td>
<td>p-value</td>
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<tr>
<td>Level-3 Residential Segregation</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Theil Index</td>
<td></td>
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<td></td>
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<tr>
<td>Blacks/Whites Dissimilarity Index</td>
<td>-0.005</td>
<td>0.007</td>
<td>0.501</td>
<td>-0.015</td>
<td>0.006</td>
<td>0.041 *</td>
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<tr>
<td>Blacks’ Isolation Index</td>
<td></td>
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<tr>
<td>Level-2 Neighborhood Mediators</td>
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<tr>
<td>Neighborhood affluence Index</td>
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<tr>
<td>Neighborhood Stability Index</td>
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<tr>
<td>Foreign Populations Index</td>
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<tr>
<td>Level-1: Mediators</td>
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<tr>
<td>Perceived neighborhood quality</td>
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<tr>
<td>Individual’s socioeconomic status</td>
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<td>Education in years</td>
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<td>Family income</td>
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<td>$0-$9,999-ref</td>
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<td>$50,000 and more</td>
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<td>Missing</td>
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</tbody>
</table>

Random Part-Variance Components

<table>
<thead>
<tr>
<th>Level 1 Individuals [N=1632]</th>
<th>Var</th>
<th>Chi-sq</th>
<th>p-value</th>
<th>Var</th>
<th>Chi-sq</th>
<th>p-value</th>
<th>Var</th>
<th>Chi-sq</th>
<th>p-value</th>
<th>Var</th>
<th>Chi-sq</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2 Neighborhoods [N=241]</td>
<td>0.369</td>
<td>413.2</td>
<td>&lt;.0001 ***</td>
<td>0.364</td>
<td>414.8</td>
<td>&lt;.0001 ***</td>
<td>0.366</td>
<td>413.2</td>
<td>&lt;.0001 ***</td>
<td>0.361</td>
<td>413.0</td>
<td>&lt;.0001 ***</td>
</tr>
<tr>
<td>Level 3 Counties [N=11]</td>
<td>0.038</td>
<td>19.0</td>
<td>0.040 *</td>
<td>0.038</td>
<td>18.8</td>
<td>0.042 *</td>
<td>0.043</td>
<td>19.8</td>
<td>0.019 *</td>
<td>0.024</td>
<td>14.1</td>
<td>0.117</td>
</tr>
</tbody>
</table>

Neighborhoods Intraclass correlation § (% ICC) | 10.1% | 10.2% | 10.0% | 10.0% | 10.1% | 10.1% |

Variance Explained (PCV=proportional change in variance) Ref. | 1.4% | 0.8% | 2.4% | 0.2% | 3.3% |

Variance To be Explained Ref. | 99.6% | 99.2% | 97.6% | 99.8% | 96.7% |

Counties Intraclass correlation £ (% ICC) | 1.1% | 1.1% | 1.2% | 0.7% | 1.1% | 0.7% |

Variance Explained (PCV=proportional change in variance) Ref. | 1.9% | -11.9% | 37.2% | 0.0% | 37.8% |

Variance To be Explained Ref. | 98.1% | 111.9% | 62.8% | 100.0% | 62.2% |

-2log likelihood | 6671.4 | 6636.6 | 6671.2 | 6668.6 | 6671.2 | 6644.7 |

† Controlling for Level-1 confounders: gender, age, nativity, and marital status; φ For parsimony and based on coefficient’s statistical significance, subsequent models are run only with the Dissimilarity Index of Racial Residential Segregation
P<0.10 +; *P<0.05 *; P<0.01 **; P<0.001 ***
†§ Proportion of total variance in Blacks’ self-esteem that is between neighborhoods (tracts); £ Proportion of total variance in Blacks’ self-esteem that is between Counties

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Guided by results from the analyses presented in Tables 3, 4, and 5, I proceeded to complete step (4) of the mediating analysis.

**Neighborhood Context’s Mediating Role**

Next, I tested the hypothesis that neighborhood context mediates the relationship between racial residential segregation and blacks’ self-esteem. Table 6, Model 2a shows a total mediation of the relationship of racial residential segregation with blacks’ self-esteem, and a 53 percent effect reduction between total and direct effect ($\beta = -0.007$, SE=0.007, $p=0.373$), after adding neighborhood affluence. A complete mediation of the relationship of racial residential segregation with blacks’ self-esteem was also observed in Model 2b after adding neighborhood stability, with a seven percent effect reduction between total and direct effect ($\beta = -0.014$, SE=0.007, $p=0.59$). In contrast, Model 2c shows only a partial mediation and a seven percent reduction of the relationship of racial residential segregation with blacks’ self-esteem between total and direct effect ($\beta = -0.014$, SE=0.005, $p<0.05$) after adding neighborhood foreign populations.

**Subjective Neighborhood’s Quality and the Mediating Role of Individual Socio Economic Status**

Individually, each level-1 mediating variable showed a total mediating effect between racial residential segregation and blacks’ self-esteem. Model 2d shows a total mediation of the relationship of racial residential segregation with blacks’ self-esteem, and a 40 percent effect reduction between total and direct effect ($\beta = -0.009$, SE=0.007, $p=0.237$), after adding the subjective perception of neighborhoods’ quality. Similarly, Model 2e shows a total mediation of the relationship of racial residential segregation with blacks’ self-esteem, and a 60 percent effect
reduction between total and direct effect ($\beta = -0.006$, SE=0.006, $p=0.331$), after adding individuals’ socio economic status.

**Multiple Mediators Model**

Model 2f, Table 6, displays HLM regression analysis that includes predictor and outcome, and all the hypothesized mediating variables simultaneously. Model 2f, Table 6, included objective neighborhood indices of affluence, stability, and foreign populations, as well as subjective perceptions of neighborhood quality, and individuals’ socio economic status as significant mediators of the relationship between racial residential segregation and blacks’ self-esteem. Table 6, Model 2f showed that the relationship of racial residential segregation with blacks’ self-esteem ($\beta = -0.002$, SE=0.008, $p=0.834$) was attenuated by an 87 percent effect reduction between total and direct effect, and became not significant. Associations of blacks’ self-esteem with percent foreign populations ($\beta = -0.233$, SE=0.065, $p<0.01$) and blacks’ self-esteem with perceived neighborhood quality ($\beta = 0.038$ SE=0.012, $p<0.01$) remained statistically significant suggesting that the mediating role of these two variables are independent of the effect of the other mediators. Similarly, individuals’ socio economic status continued to be significantly associated with blacks’ self-esteem (refer to Table 6, Model 2f).

**Variance Components**

Table 5, Null Model, shows significant (Chi-Square=19.0; df=11; p-value=<0.05) and very small variations to be explained at the county level. The intra-county correlation coefficient showed that 1 percent of the variance in blacks’ self-esteem could be attributed to county-level factors. Level-1 confounders explained two percent of the self-esteem variance between counties (refer to Table 5, Confounders Model). An additional 35 percent of the variance in self-esteem
between counties was explained by the Dissimilarity Index of racial residential segregation which, together with the level-1 confounders (i.e., gender, age, nativity, and marital status), explained 37.2 percent of the variance found in blacks’ self-esteem at the county-level. Higher self-esteem was evident among blacks residing in counties with lower indices of racial residential segregation.

At the neighborhood-level, Table 5, Null Model, shows that ten percent of the variance in blacks’ self-esteem could be attributed to neighborhood-level factors. Level-1 confounders explained 1.4 percent of the self-esteem variance between neighborhoods; and an additional 11.3 percent, 6.9 percent, and 2.3 percent of the variance in self-esteem between neighborhoods was explained by the neighborhoods’ indices of affluence, stability, and foreign populations, respectively. A total of 29 percent of the variance between neighborhoods was explained by the final model, which included all variables tested in this analysis (refer to Table 6, Model 2f). Higher levels of self-esteem were evident among blacks that resided in neighborhoods with higher indices of affluence and stability, while, blacks residing in neighborhoods with higher indices of foreign populations showed lower levels of self-esteem.
Table 6. Effects of Adjusting for Neighborhood and Individual Variables on Associations between Racial Residential Segregation and Blacks’ self-esteem in Hierarchical Linear Regression Models: X + M → Y (path c’)

<table>
<thead>
<tr>
<th>Self-Esteem</th>
<th>Model 2a†</th>
<th>Model 2b†</th>
<th>Model 2c†</th>
<th>Model 2d†</th>
<th>Model 2e†</th>
<th>Model 2f†</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level-3 Residential Segregation</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Dissimilarity Index</td>
<td>-0.007</td>
<td>0.007</td>
<td>0.373</td>
<td>0.014</td>
<td>0.007</td>
<td>0.059</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>-0.014</td>
<td>0.005</td>
<td>0.019</td>
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<td></td>
<td></td>
<td>* -0.009</td>
<td>0.007</td>
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<td></td>
<td>-0.006</td>
<td>0.006</td>
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<td></td>
<td>-0.002</td>
<td>0.008</td>
</tr>
<tr>
<td><strong>Level-2 Neighborhood Mediators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Neighborhood affluence Index</td>
<td>0.206</td>
<td>0.043 &lt;.0001 ***</td>
<td>0.113</td>
<td>0.048 0.020 *</td>
<td>-0.236</td>
<td>0.027 &lt;.0001 ***</td>
</tr>
<tr>
<td>Neighborhood Stability Index</td>
<td></td>
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<td></td>
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<tr>
<td>Foreign Populations Index</td>
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<td></td>
</tr>
<tr>
<td><strong>Level-1: Mediators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived neighborhood quality</td>
<td>0.047</td>
<td>0.011 &lt;.0001 ***</td>
<td>0.155</td>
<td>0.020 &lt;.0001 ***</td>
<td>0.154</td>
<td>0.022 &lt;.0001 ***</td>
</tr>
<tr>
<td>Individual’s socioeconomic status</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Education in years</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$&lt; 9,999-ref</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>$10,000-$29,999</td>
<td>0.442</td>
<td>0.073 &lt;.0001 ***</td>
<td>0.425</td>
<td>0.118 0.001 **</td>
<td>0.611</td>
<td>0.101 &lt;.0001 ***</td>
</tr>
<tr>
<td>$30,000-$49,999</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$50,000 and more</td>
<td>0.634</td>
<td>0.036 &lt;.0001 ***</td>
<td>0.572</td>
<td>0.201 0.005 **</td>
<td>0.567</td>
<td>0.201 0.005 **</td>
</tr>
<tr>
<td>Missing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Random Part-Variance Components</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1 Individuals [N=1632]</td>
<td>3.189</td>
<td>3.189</td>
<td>3.174</td>
<td>3.176</td>
<td>3.009</td>
<td>2.995</td>
</tr>
<tr>
<td>Level 2 Neighborhoods [N=241]</td>
<td>0.322</td>
<td>398.1 &lt;.0001 ***</td>
<td>0.339</td>
<td>406.9 &lt;.0001 ***</td>
<td>0.356</td>
<td>422.4 &lt;.0001 ***</td>
</tr>
<tr>
<td>Level 3 Counties [N=11]</td>
<td>0.022</td>
<td>14.1 0.117</td>
<td>0.026</td>
<td>15.3 0.082</td>
<td>0.000</td>
<td>6.0 &gt;.500</td>
</tr>
<tr>
<td>Neighbors Intraclass correlation § (%ICC)</td>
<td>9.1%</td>
<td>9.5%</td>
<td>10.1%</td>
<td>9.1%</td>
<td>7.7%</td>
<td>8.1%</td>
</tr>
<tr>
<td>Variance Explained (PCV=proportional change in variance)</td>
<td>12.7%</td>
<td>8.3%</td>
<td>3.7%</td>
<td>13.6%</td>
<td>31.7%</td>
<td>28.5%</td>
</tr>
<tr>
<td>Variance To Be Explained</td>
<td>87.3%</td>
<td>91.7%</td>
<td>96.3%</td>
<td>86.4%</td>
<td>68.3%</td>
<td>71.5%</td>
</tr>
<tr>
<td>Counties Intraclass correlation £ (% ICC)</td>
<td>0.6%</td>
<td>0.7%</td>
<td>0.0%</td>
<td>0.6%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Variance Explained (PCV=proportional change in variance)</td>
<td>42.9%</td>
<td>33.0%</td>
<td>99.6%</td>
<td>48.9%</td>
<td>99.8%</td>
<td>99.7%</td>
</tr>
<tr>
<td>Variance To Be Explained</td>
<td>57.1%</td>
<td>67.0%</td>
<td>0.4%</td>
<td>51.1%</td>
<td>0.2%</td>
<td>0.3%</td>
</tr>
<tr>
<td>-2log likelihood</td>
<td>6627.8</td>
<td>6632.3</td>
<td>6624.9</td>
<td>6620.8</td>
<td>6515.7</td>
<td>6512.0</td>
</tr>
</tbody>
</table>

† Controlling for Level-1 confounders: gender, age, nativity, and marital status
P<0.10 †; *P<0.05 †; P<0.01 **; P<0.001 ***
§ Proportion of total variance in Blacks’ self-esteem that is between neighborhoods (tracts); £ Proportion of total variance in Blacks’ self-esteem that is between Counties
DISCUSSION

Building on Rosenberg’s proposal of consonant context, the main goal of this study was to examine the effects of racial residential segregation on blacks’ self-esteem. The two main findings of the study – the significant and detrimental effect of racial residential segregation on blacks’ self-esteem, and the complete mediating role of socioeconomic indices at both neighborhood and individual-levels – suggest that not all consonant contexts enhance individuals’ levels of self-esteem, as suggested by the consonant context perspective, and that socioeconomic factors need to be taken into account when examining associations between social contexts and self-esteem.

Blacks’ Self-esteem and Racial Residential Segregation

The higher levels of self-esteem among blacks, when compared to majority group members, have led social scientists to speculate that there is a protective role for segregation in that it insulates blacks from the negative effects that a macrosocial system of social inequalities (e.g. experiences of discrimination and low social status) may have on self-esteem (Rosenberg 1979). Results from this study contradict this assertion. Even though associations between blacks’ self-esteem and racial residential segregation were fairly modest, the effect of racial residential segregation on blacks’ self-esteem was significant and had an unfavorable effect. These results add to the conflicting findings found in the literature. Despite some evidence of a favorable link between consonant context and individuals’ self-concept, the evidence is conflicting and the effect is usually modest (Rosenberg 1975). The modest effects may be explained by the multidimensionality that characterizes contexts (Rosenberg 1975). Individuals may feel dissonance with their environment in one dimension (e.g. ethnic context), but may find high consonance in other dimensions (e.g. social class) (Rosenberg 1975). Similarly, individual
behaviors can be context specific (Porter 1979). Different dimensions of self-esteem may be affected by the same context in different ways. For instance, race segregated environments may foster an individuals’ sense of worth due to the supportive relationships established with other individuals, community organizations, and religious institutions. However, lack of economic resources may hinder development of self-efficacious behaviors that foster social mobility and higher quality of life. Current knowledge on the effects of consonant context on self-esteem does not specify the pathways or mechanisms through which this association may be occurring. The significant self-esteem-segregation association using the Dissimilarity index (i.e. measure of uneven distributions of blacks and whites), but the not-significant associations with either the Theil (i.e. uneven distributions of blacks, whites, Latinos, Asians, and other racial/ethnic groups) or the Isolation (i.e. blacks’ levels of concentration) indices suggest that the unfavorable effects of racial residential segregation on self-esteem may be associated with the more advantaged social and economic position that blacks, residing in neighborhoods with more even distribution of whites, may experience (Frey and Farley 1996; Iceland 2004). In the following section, I discuss the mediating effects of a number of variables that relate to socioeconomic factors.

Significant associations between segregation and self-esteem reflect the influential role of macrosocial contexts on individuals’ psychology. Structural conditions of advantage or disadvantage, such as those created by racial residential segregation have the capacity to influence self-esteem by sorting out individuals in geographic areas where the distribution of material and nonmaterial resources are not equivalent. Patterns of racial residential segregation become an influential factor in the process of individuals’ identity verification by inhibiting or promoting individuals’ capacity for efficacious actions and related self-evaluations and feelings about oneself. Results from this study confirm that place of residence has a significant
association with individuals’ psychology, as early postulated by authors such as Wirth (Wirth 1938). Although psychosocial theories have postulated a dynamic interplay between social-structural conditions and self-esteem, most studies on self-esteem have not examined these associations. We advance the field of social psychology on self-esteem by addressing this gap and by providing empirical evidence of the effects of racial residential segregation, a social-structural factor, on blacks’ self-esteem. Our findings support psychosocial theories stating that self-evaluations and feelings about self are broadly embedded and sustained by the macrosocial contexts surrounding individuals.

Mediating Pathways: Objective and Subjective Neighborhood’s Context and Individual Socioeconomic Status

Results from the mediating analyses examined in this study can be classified in two ways: one on the mediating effects of socioeconomic status-related factors – at both the neighborhood and individual level – and the other on social status/prestige-related factors.

First, the individually complete mediating role of the index of neighborhood affluence and of individuals’ socioeconomic status indicates that the adverse effects of racial residential segregation on blacks’ self-esteem are related to variations in income/wealth related factors – at both the neighborhood and individual-level—and created by dynamics of racial residential segregation (Massey, Gross et al. 1994; Darden, Bagaka's et al. 1997; Ross and Mirowsky 2001). More affluent neighborhoods have better infrastructural elements that, in turn, can create a better quality of living and a greater amount of economic resources available to individuals (Ellen, Mijanovich et al. 2001; Galea, Freudenberg et al. 2005). Higher levels of self-esteem among blacks are, potentially, the result of better quality education and greater quantity and quality of
working opportunities. These two factors provide individuals with a higher probability to engage in more social roles, thereby creating more opportunities to enhance self-esteem levels. Similarly, the strong and significant association between self-esteem and levels of education and family income indicate the importance of higher socioeconomic status and social mobility for blacks’ self-esteem. The enhancing effects of higher socioeconomic status on self-esteem may be related to both the social prestige assigned to education, work, and wealth in our society, and the improved social conditions (i.e. housing, employment) that higher socioeconomic positions give access to individuals (Wells 2001).

Second, the mediating role of neighborhood stability in the associations between racial residential segregation and self-esteem may be related to greater opportunities to establishing closer and long-lasting relations among its residents in more stable neighborhoods. These relationships can become important sources of social support and venues for transmitting a community’s socio-cultural history (Macintyre, Ellaway et al. 2002). Studies have shown that in addition to the importance of family members on blacks’ self-esteem, relationships with other community members, such as churches and volunteer organization within neighborhoods, also favorably enhance the self-esteem of blacks (Demo, Small et al. 1987; Hughes and Demo 1989; Haney 2006). Relationships established within communities serve to transmit political, economic and religious values, which are highly regarded as part of blacks’ identity among residents of more stable neighborhoods (Demo and Hughes 1990). More stable neighborhoods may also provide their residents with additional opportunities to engage in a variety of social roles as active participants in their community affairs. Active community participation may boost feelings of agency. A greater sense of agency is hypothesized to be associated with higher levels
of self-esteem by increasing levels of self-efficacy and self-knowledge, both necessary for future successful outcomes (Wells 2001).

On the other hand, lower self-esteem levels of blacks living in areas with higher indices of foreign populations may be related to feelings of threat to the social self. Individuals may experience threats to the social self when they are in contextual situations in which their abilities, competencies or positive images feel devalued or when explicit rejection is experienced (Gruenewald, Kemeny et al. 2004). Blacks residing in areas with higher indices of foreign populations may experience greater negative racial attitudes from minority out-group members. They may have induced feelings of threat to their social status, in turn, relating to their lower self-esteem levels. I found one study using data from the MCSUI (the same data used in this study) that reported greater negative stereotypes among blacks, Latinos and whites against other minority out-groups (Oliver and Wong 2003). Negative stereotypes against minority out-groups were more likely to increase as the size of the in-group got larger; suggesting that blacks in neighborhoods with larger minority out-group populations—most likely Latino or Asian foreign populations—may have, in fact, experienced greater threats to their self-concepts and that related to their lower self-esteem in these neighborhoods. Worth-based self-esteem is enhanced when individuals feel accepted and valued by social groups in their contexts; in contrast, social exclusion lowers worth-based self-esteem (Cast and Burke 2002). The lower self-esteem among blacks residing in neighborhoods with high foreign indices may also be associated to feelings of threat to their social status—an important determinant of the distribution of material and non-material resources (Gruenewald, Kemeny et al. 2004). Latinos, a rapidly growing group in the 1990s when the MCSUI data was collected, may have represented an economic threat to blacks (Markert 2010). A response to threats to the self-concept is the derogation of out-groups relative
to the in-groups (Crocker, Thompson et al. 1987). A study using data from the LASUI study (a subsample from the MCSUI study that includes only Los Angeles) found greater racial animosity among blacks against poorer and less educated Latinos (Cho and Baer 2011), which may be an indication of feelings of threat to the self-concept among blacks. The proposed association between lower self-esteem among blacks and threat feelings to the social self are in line with other studies that have found lower levels of self-esteem among individuals situated in contexts where their social self feels threatened (Crocker, Thompson et al. 1987; Leary, Tambor et al. 1995; Leary, Haupt et al. 1998; Gruenewald, Kemeny et al. 2004).

Similar to findings in my previous study (chapter 2), blacks’ perceptions of residing in lower quality neighborhoods may have affected their self-esteem unfavorably by internalized feelings of disorder and abandonment (Ross and Mirowsky 2001). Negative perceptions of one’s neighborhood may also affect self-esteem by limiting social interactions with neighbors. Studies have shown that perceptions of neighborhood disorder may inhibit social interactions among its residents (Truong and Ma 2006; Beard, Cerda et al. 2009). On the other hand, perceptions of better neighborhood quality can be interpreted as an indicator of the area’s good reputation and a social indicator of status and prestige, which in turn may positively enhance self-esteem levels (Ellen, Mijanovich et al. 2001). As mentioned in an earlier chapter, the reputation of an area can also be a deciding factor to financial and other marketing institutions when making investment decisions in particular neighborhoods. Greater economic investment in one’s neighborhood improves neighborhoods’ infrastructure and quality of life, including higher levels of self-esteem, for their residents (Ellen, Mijanovich et al. 2001). Results from this study are in line with other studies that report significant associations between individuals’ self-esteem and perceived characteristics of one’s neighborhood (Kaplan 1971; Haney 2006).
The final model indicated the significant effect of the neighborhood foreign index, subjective perceived quality of one’s neighborhood, and individuals’ socioeconomic status on blacks’ self-esteem, after controlling for all potential confounders and proposed mediating variables at both individual- and neighborhood-level. Overall, this paper highlights the importance of social status for blacks’ self-esteem, as reflected in individual levels of socioeconomic status, perceived social prestige of residing in higher quality neighborhoods, and restricted access to economic resources in neighborhoods with higher foreign indices. Segregation studies have found lower economic resources in areas with higher concentrations of immigrants and their second and third generation descendants (Frey and Farley 1996; Darden, Bagaka's et al. 1997; Allen and Turner 2012).

LIMITATIONS

The findings of the present study must be interpreted in light of a number of limitations. The sample was not a nationally representative one; it included only select geographic areas from Atlanta, GA, Boston, MA, and Los Angeles, CA. In addition, data were not collected homogeneously across the three metro-areas. Particularly problematic was sample differences in data collection of the self-esteem variables in Los Angeles-metro area compared to both Atlanta- and Boston-metro areas. Therefore, additional studies are needed to examine the generalizability of these findings. This study used cross-sectional data; therefore, the temporal sequence between predictors and outcome cannot be determined to support causal inferences. Similarly, the use of cross-sectional data does not allow examining exposures over a life course or the stability of the aggregate variable over time and its effects on the level-1 outcome. This was a secondary data
analysis. Since the MCSUI study was not specifically designed to examine health related factors, the measures of self-esteem used may have a number of limitations. For instance, the measure included only four items out of the ten of which the original scale is composed of, which may have limited reliability than if the whole scale had been used. Given the independent agencies conducting the study in the four cities where the MCSUI was completed, there was not a uniform system of data collection, and data availability varied by city. This lack of uniformity produced patterns of missing data that reduced greatly the ability for more complex analysis (e.g. interactions between levels) that could have offered more insights into the processes in which social structure affects self-esteem.

Notwithstanding these limitations, the present study is the first, to our knowledge, to examine associations between racial residential segregation and blacks’ self-esteem and to test the mediating effect of objective and subjective neighborhood context following House’s theoretical principles to link social structures and personalities.

CONCLUDING REMARKS

Social Evaluation Theory assumes that individuals learn about themselves through comparisons with individuals alike and present within their local contexts. Social evaluations can result in positive, neutral, or negative self-evaluations. In addition, consonant environment perspective states that blacks do not refer to whites—the majority group—for social evaluations unlike what is predicted by the social evaluation theory. Instead, blacks use other blacks as a reference group for personal comparisons. This revision in the theory was suggested to explain higher levels of self-esteem among blacks, compared to whites, and predicts that blacks’ racial and socioeconomic segregation may provide a protective effect on self-esteem (Porter & Washington 1975). However, the consonant theory ignores the economic dynamics and their
consequences on social mobility and how opportunities for acquiring higher socioeconomic status and prestige get severely restricted in segregated environments. This study highlights this fact and provides empirical proof that, although segregated environments provide certain social support, they also concentrate poverty and disadvantages, which in turn negatively affects the self-esteem of individuals.

This study advances knowledge on the ways self-esteem and social structures are tied together. The location of individuals within the social structure (i.e. more affluent neighborhoods, better quality neighborhoods, higher levels of education and family income) provides the resources and paths for verifying identities. Culture defines and categorizes the roles and groups that characterize social positions. Individuals, in turn, use these categories to socially define themselves. However, the embeddedness of the self within larger social contexts makes it necessary to understand the self as a social entity rather than an isolated set of psychological traits (Burke 2004). Identity control theory links identities and social structure (Burke 2004). Processes of self-identification happen within individuals, however, the content of their identities, which serves as reference, are taken from the culture in the context of the individual’s social structural position (Burke 2004).

Few studies have examined variation in the effects of contextual environments on the self-concept within minority groups (Keith and Thompson 2003). This study shows that in addition to black-white contextual situations, contextual factors relevant for other minority groups also matter for the self-esteem of blacks. This is an important finding given that cultural contexts, particularly local cultural contexts in which individuals are embedded in, provide self-relevant meanings and standards of identity. Local contexts provide shared meanings, information on role expectations, and references for sources of behavior frequently acquired through interactions and
relationships happening in local contexts (Burke 2004). Although processes of self-identification happen within individuals, the content of the identities, which serve as reference, are taken from social structural context faced by individuals (Burke 2004). Given the multi-ethnic context of the United States, findings about how this contextual diversity relates to individuals’ identities is increasingly relevant and in need of further research.
REFERENCES


StataCorp. 2001. *Statistical Software: Release 10* College Station, TX: Stata Corporation.


CONCLUDING REMARKS

The main purpose of this dissertation was to present three empirical analyses guided by House’s social structure and personality perspective. The papers in this dissertation gave special attention to the specification of proximate elements through which social and cultural structures and individuals interrelate. Specifically, I examined how socioeconomic and demographic contextual characteristics at the neighborhood level (i.e. affluence, stability, foreign populations, and racial composition) served as proximate factors in the hypothesized links of (1) county-level proportion of black populations with whites’ racial attitudes, and residential segregation with whites’ racial attitudes in Chapter one; (2) county-level whites’ positive stereotypes toward blacks with blacks’ self-esteem in Chapter two; and (3) residential segregation with blacks’ self-esteem in Chapter 3. Simultaneous attention to major social and cultural macro structures and individual processes, and the proximate elements that connect the two enhances the development of social psychological theory (House 1981).

Findings from this dissertation explicitly inform the sociological sub-field of inter-racial group relations and the social psychology of self-esteem. By applying Houses’ social structure and personality perspective, the chapters in this dissertation empirically illustrated the connections between social and cultural macro structures and personality, and examined various pathways through which connections between macro-micro phenomena occur. One of the central findings of this dissertation is that racial contexts including racial residential segregation and county-level measures of whites’ positive stereotypes toward blacks prove to be significant predictors of whites’ racial attitudes and blacks’ self-esteem, above and beyond individual-level
predictors. A second major finding is that neighborhoods’ context play a significant role in the associations of socio and cultural structures and individual. Overall, the findings in this dissertation underscore the conceptual argument for the need to examine the links between social and cultural structures and individuals’ personalities and psychologies.

More specifically, findings from Chapter 1 revealed differences in the factors influencing whites’ racial attitudes toward blacks, which were particularly clear at the neighborhood-level. The models in Chapter 1 showed the importance of racial residential segregation and of neighborhoods’ racial and socioeconomic contexts for the construction of whites’ racial attitudes toward blacks. However, the significant and inverted-U shaped association of the 4-categorical variable of whites’ residential exposure to blacks with whites’ negative stereotypes against blacks led to inconclusive results about expectations of threat theory dynamics occurring at larger geographic levels. Future studies should examine further the effects of racial residential segregation on whites’ racial attitudes, and possible complementary properties of the threat and contact theories, by employing national datasets that allow for more robust and generalized results. In addition, research on racial attitudes has focused on whites’ construction of blacks; therefore, little is known about how other ethnic/racial groups are socially constructed. Research that examines whites’ racial/ethnic construction of other groups—particularly Latinos who are the largest minority group in the U.S.—and how this social construction is distinct or similar to that of blacks should inform and advance work on inter-group relations and multiculturalism (Link and Oldendick 1996). Understanding the social construction of groups and the formation of out-group stereotypes and other negative ethnic/racial attitudes has important implications for the successful passing and implementation of social policies that support the more equal
distribution of resources and seek to reduce existing racial inequities (Schneider and Ingram 1993).

In Chapter 2, I empirically tested previous conclusions that blacks’ self-esteem is unaffected by the opinions and valuations from majority out-groups. The findings presented in Chapter 2 not only add to the literature on blacks’ self-esteem, but also enrich macro-to-micro theory by going beyond specialized analyses with narrow interest on either micro or macro analysis. Findings from this study not only show a significant relationship between white’s positive stereotypes of blacks at the county level with black’s self-esteem but also tried to untangle the ways societal values may affect the individual’s psychology. In line with the proposed hypotheses, I confirmed the influence of county-level whites’ positive stereotypes on blacks’ self-esteem through economic and demographic dynamics happening at the neighborhood-level or the proximity principle. Chapter 2 advances the literature on self-esteem by providing an empirical test of the potential effects of positive stereotypes held by whites toward blacks on blacks’ self-esteem.

Chapter 3 highlighted the importance of social status for blacks’ self-esteem. Blacks’ self-esteem was significantly and positively related to higher individual levels of socioeconomic status and higher perceived social prestige of residing in higher quality neighborhoods. Few studies have examined variation in the effects of contextual environments on the self-concept within minority groups (Keith and Thompson 2003). This study showed that in addition to black-white contextual environments, the presence of other minority groups’ where blacks reside is an important factor that is significantly related to the self-esteem of blacks. Blacks living in
neighborhoods with larger indices of foreign populations had significantly lower levels of self-esteem, independent of the effect of neighborhoods’ affluence. This is an important finding given that cultural contexts, particularly local cultural contexts in which individuals are embedded in, provide self-relevant meanings and standards of identity. Local contexts provide shared meanings, information on role expectations, and references for sources of behavior frequently acquired through interactions and relationships happening in local contexts (Burke 2004). Given the multi-ethnic context of the United States, a finding about how this contextual diversity relates to individual identities is increasingly relevant and a promising line for further research.

Chapters two and three confirm that place of residence (i.e. neighborhood) has a significant effect on individual’s psychology, as postulated earlier by authors such as Wirth (Wirth 1938). They also advance the field of social psychology on self-esteem by examining the dynamic interplay between social and cultural structural conditions and self-esteem, and by providing empirical evidence of the effects of residential segregation—a social-structural factor—and contextual stereotypes—a cultural-structural factor—on blacks’ self-esteem. Findings from Chapters 2 and 3 supported the specified hypotheses that self-evaluations and feelings about one-self are broadly embedded and sustained by the macro social contexts surrounding individuals. Significant and unfavorable associations of racial residential segregation with blacks’ self-esteem and significant and beneficial associations of whites’ positive stereotypes for blacks and blacks’ self-esteem reflect the influential role of macro social and cultural contexts on individual’s psychology. Structural conditions of advantage or disadvantage, such as those created by residential segregation and contextual stereotypes, have the capacity to influence self-esteem by inhibiting or promoting an individual’s capacity for efficacious actions and related self-evaluations and feelings about one-self.
In this dissertation I also examined the role of local contexts, specifically of neighborhoods, as intermediate factors between macro social and cultural structures and individuals. Neighborhoods are influential contexts in human psychology (Jason and Robert 2000), in part due to their critical role in determining access to social and material resources and the reproduction of social disadvantage (Furstenberg Jr. and Hughes 1997). A neighborhood’s structural and social conditions determine access to physical and social resources that limit or promote individuals’ opportunities to engage in behaviors associated to overall well-being, and behaviors that promote harmonious inter-group relations. Neighborhoods are an important local context where inter-group relationships occur. In regard to pathways, the findings in this dissertation provided empirical evidence that neighborhood affluence, neighborhood stability, and neighborhood foreign populations are significant proximate principles through which racial residential segregation and society’s values and attitudes (i.e. whites’ positive stereotypes for blacks) have an influential role on individuals’ psychologies. This dissertation provided specific mechanisms that link large social and cultural structures to whites’ racial stereotypes and blacks’ self-esteem in ways that sustain current hierarchical systems underlying social and economic racial inequities. These hierarchical systems detrimentally affect not only the lives of minority groups in the United States, but also the overall quality of life of all members of this society.

Lastly, more research based on qualitative approaches is needed to complement quantitative data. Mixed methods studies that complement qualitative and quantitative results may provide deeper insights into the processes linking social and cultural structures to individuals’ psychologies. In particular, research on the mechanisms that sustain whites’ negative attitudes
toward minority groups and their effect on minorities’ psychologies, both from the perspective of people who are disadvantaged and from the standpoint of those who enjoy an advantaged social position are greatly needed. Results from this type of analysis can inform better policy makers at local, state, and federal government in their efforts to increase social, economic, and political racial equity. Efforts to increase investment in human capital through more effective spending on schools, job training, equal housing opportunities, universal health care access—all policies aimed at reducing racial inequities—could be more successful with the support of greater proportions of members of majority groups in society. The support of the majority of the members of a society is indispensable for racial equity actions and policies to work and effect real and lasting results.
REFERENCES


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