From the Hood to the School: Middle School Students’ Experiences with Racial/Ethnic Discrimination as they Navigate the Neighborhood and School Contexts

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of the requirements for the degree Master of Arts
in Education

by

Feliz Quinones

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ABSTRACT OF THE THESIS

From the Hood to the School: Middle School Students’ Experiences with Racial/Ethnic Discrimination as they Navigate the Neighborhood and School Contexts

by

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Master of Arts in Education
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Professor Sandra H Graham, Chair

This study examined the effects of incongruence (mismatch) between neighborhood and school racial/ethnic composition on middle school students’ experiences with teacher-and-peer-initiated discrimination. The subsample of 1,289 students (44% Latino, 26% White, 14% Black, and 16% Asian) comes from a larger longitudinal study of 26 ethnically diverse middle schools and over 300 neighborhoods that vary in ethnic diversity. This study relies on students’ self-reports of perceived discrimination and school demographic data from the California Department of Education. Student home addresses were geocoded using Geographic Information Systems, ArcGIS 10.1, and then matched to demographic data obtained from American FactFinder. Neighborhood-school incongruence scores were calculated by subtracting the proportion of
same-ethnicity peers in the school from the proportion of same-ethnicity residents in the neighborhood. Overall, our results suggest that neighborhood-school incongruence affects students’ perceptions of teacher-and-peer-initiated racial/ethnic discrimination differently depending on students’ racial/ethnic group and gender. Results from multilevel models show that there was a three-way interaction, such that race/ethnicity and gender moderated the association between neighborhood-school incongruence and teacher-and-peer-initiated discrimination. These findings emphasize the importance of examining both the neighborhood and school contexts in understanding students’ experiences with racial/ethnic discrimination.

*Keywords*: racial/ethnic, discrimination, school context, neighborhood context, middle school, racial/ethnic incongruence
The thesis of Feliz Quinones is approved.

Rashmita Mistry

Carola Suarez-Orozco

Sandra H Graham, Committee Chair

University of California, Los Angeles

2015
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From the Hood to the School: Middle School Students’ Experiences with Racial/Ethnic Discrimination as they Navigate the Neighborhood and School Contexts

Experiences of discrimination in school settings are an important issue to continue investigating, as schools are becoming more racially diverse contexts. While one would expect more positive social and academic outcomes in more integrated school settings (Orfield, 2009), Benner and Graham (2011, 2013) conclude that students attending racially diverse schools actually report more experiences of discrimination than students attending less diverse school settings. This may in part be due to the decline in students’ racial/ethnic group numerical representation in the school setting. Previous research suggests that as students’ own racial/ethnic group representation declines during the middle to high school transition; that is, as a student transitions from a racial/ethnic numerical majority to a racial/ethnic numerical minority, students report more experiences of discrimination (Benner & Graham, 2011). While research has examined the challenges associated with the mismatch in racial/ethnic group representation during school transitions (from elementary to middle to high school), little is known about the experiences of students who face the challenges associated with the daily neighborhood to school environment transition. That is, little is known about the experiences of students who move from a neighborhood context with a unique racial demographic to a school setting with a different racial composition. The following study examined how the incongruence (mismatch) in the racial composition of the neighborhood and school contexts affect middle school students’ experiences of discrimination.

Defining Racial/Ethnic Discrimination

Sellers and Shelton (2003) define discrimination as “the daily hassles” that people experience because of their lower status as part of a stigmatized group. Discrimination includes
negative stereotypes, comments, as well as actions targeted at an individual due to their membership in a particular group (Sellers & Shelton, 2003). Brown and Bigler (2005) state that discrimination can range from exclusion to physical assault and it can be “subtle and ambiguous” or “explicit and overt” (p. 534; Sellers, Copeland-Linder, Martin, & Lewis, 2006). While overt forms of discrimination may not be as pervasive as they once were, daily subtle insults or day-to-day experiences with discrimination persist (DeVos & Banaji, 2005; Dovidio & Gaertner, 1996; Thompson & Gregory, 2011) and are just as harmful or even more harmful, as the targets of these actions have to contend with the ambiguity associated with these negative social interactions (Brown & Bigler, 2005; Solorzano, Ceja, & Yosso, 2000; Sue et al., 2007; Sue, 2010a). In fact, early research by psychiatrist Chester Pierce argues that the accumulation of racial microaggressions, or daily subtle forms of discrimination, lead to lower levels of self-confidence as well as poorer health outcomes (1995). Sue (2010b) states that exposure to racial microaggressions leads to higher rates of anxiety, depression, and anger.

**Consequences of Discrimination: Mental and Physical Health**

Experiences of ethnic discrimination affect students’ mental and physical health as well as their academic outcomes (Alfaro et al., 2009; Benner & Graham, 2013; Rosenbloom & Way, 2004). Huynh (2012) examines adolescents’ experiences with microaggressions and her findings show that students who experience microaggressions report higher levels of anxiety, anger, stress, depression, and report more physical complaints, like headaches, stomachaches, etc. When ethnic minority groups are compared to each other, Latinos are at an increased risk for depression (Umaña-Taylor & Updegraff, 2007). Mexican-origin adolescents, particularly, are at a much greater risk for reporting higher levels of depression when compared to African American, Asian American, and Caucasian youth. Szalacha, Erkut, García-Coll, Alarcón, Fields,
and Ceder (2003) conducted two studies of Puerto Rican youth’s development in the U.S. and their findings show that perceiving racial/ethnic discrimination as well as the anxiety associated with discrimination serve as risk factors for Puertorriqueños’ mental health. The anxiety that comes alongside discrimination, alone, is enough to take a negative toll on adolescents’ mental, physical, and educational outcomes, emphasizing the importance of continuing to examine ethnic minority students’ experiences with discrimination.

**Discrimination in the School Context**

Research on microaggressions typically examines the experiences of adults. Work done with adolescents, such as that of Fisher, Wallace, and Fenton (2000) concludes that students of all racial/ethnic backgrounds are affected by discrimination in educational settings and that these experiences are associated with higher levels of distress. To be more specific, adolescents of color, particularly Black and Latino students, tend to report higher rates of adult-initiated racial/ethnic discrimination while Asian American students tend to report higher rates of peer-initiated discrimination (Benner & Graham, 2011, 2013; Huynh, 2012, Huynh & Fuligni, 2010). Discrimination by school personnel for ethnic minority students takes the form of lower teacher expectations and lower track placements, while discrimination among Asian American urban high school students takes the form of physical and verbal abuse by peers (Benner and Graham, 2013).

**Discrimination in the Neighborhood Context**

Researchers have acknowledged that the neighborhood context also plays an important role in adolescents’ experiences with racial/ethnic discrimination (Leventhal & Brooks-Gunn, 2000; Plunkett et al., 2007; Sampson, Morenoff, & Gannon-Rowley, 2002). Neighborhood research suggests that residents living in segregated communities marked by concentrated
inequality experience higher rates of institutional discrimination (Allison, Broce, & Houston, 2013) and are exposed to more environmental risks (Pebley & Sastry, 2004) that negatively impact adolescents (Evans, 2004; Leventhal & Brooks-Gunn, 2000). Youth of color, who live in marginalized communities, tend to be at a greater risk for experiencing these forms of institutional discrimination, compared to adolescents living in middle or high socioeconomic status neighborhoods (Creasey & Jarvis, 2012; Leventhal, Dupéré, & Brooks-Gunn, 2009).

Low-income neighborhoods are characterized as “more dangerous, [with] poorer public services, and [with] more deteriorated physical infrastructure” (Sampson & Raudenbush, 1999; Evans, 2004, p. 29). According to Wilson and Kelling’s (1982) “broken windows” theory of urban decline, minor forms of public disorder such as graffiti, public intoxication, garbage, and abandoned cars, are associated with crime and urban decay, as well as higher rates of physical decline, depression, psychological distress, and perceived powerlessness for the residents living in neighborhoods with public disorder. However, Sampson and Raudenbush’s (2004) work in Chicago neighborhoods suggest that the racial, ethnic, and socioeconomic structure of neighborhood contexts play a stronger role in shaping residents’ perceptions than just these objective cues of disorder. Aneshensel and Sucoff’s (1996) study of 877 adolescents in Los Angeles County suggests that youth who live in low socioeconomic status neighborhoods report experiencing more symptoms of depression, anxiety, oppositional defiant disorder, and conduct disorder when they perceive their neighborhoods as places with greater environmental hazards and places that are threatening. This emphasizes the importance of continuing to examine how the racial, ethnic, and socioeconomic environments in which adolescents reside affect their mental health.
Research on the specific effects of neighborhood racial diversity on adolescents’ adjustment outcomes is mixed. Benner and Graham (2013) cite two studies, in which adolescents living in racially diverse neighborhoods report higher rates of discrimination (Martin et al., 2011; Stewart, Baumer, Brunson, & Simons, 2009), and they cite one study in which there is no clear relationship between neighborhood diversity and discrimination (Seaton & Yip, 2009). More research needs to be conducted to examine the effects of neighborhood racial diversity and adolescents’ experiences with discrimination as they affect their mental and physical health.

School Transitions

School transitions (from elementary to middle to high school) are a time filled with developmental adjustments and academic challenges for students (Benner & Graham, 2009). This traditional feeder pattern is associated with more negative developmental outcomes, placing students at an increased risk for experiencing declines in grades and experiencing higher rates of anxiety, loneliness, and depression, compared to students who make a single school transition (Benner, 2011). Little research on these school transitions examines the relationship between race/ethnicity and the person-context interaction, that is, what are the developmental outcomes as students move from one context with a racial demographic to a context with a different racial/ethnic makeup? During these school transitions, students typically move from a school setting where they are the numerical racial/ethnic majority to, oftentimes, a larger unfamiliar context where they become the numerical ethnic minority (Benner, 2011). Research shows that as students transition from being the majority to the minority, students report higher rates of peer victimization or discrimination (Benner & Graham, 2009). While research on school transitions examines the challenges associated with these single-point in-time periods, little is known about the experiences of students who face the challenges associated with the daily neighborhood to
school environment transitions, as students move from a neighborhood context with a unique racial demographic to a school setting with a different racial composition.

**Neighborhood and School Racial/Ethnic Incongruence**

There are students who do not attend middle schools situated in their own neighborhoods, oftentimes traveling miles from one context to another in search of a higher quality education. As they move from their neighborhood, characterized with a unique racial composition, to a school environment with a different ethnic makeup than that of their neighborhood, they come across two settings that are highly dissimilar or incongruent in terms of their racial/ethnic compositions. The following questions remain unanswered: What is the experience of students who might move from the majority in their neighborhood to the minority in their school setting or vice versa? To be more specific, what is the experience of students who live in neighborhoods where the majority of the residents are of their own racial/ethnic group (ethnic enclave) but are attending a school that is more racially diverse, in which case their ethnic representation is no longer the majority? Conversely, what is the experience of students living in racially diverse neighborhoods that attend less diverse school settings?

**Current Study**

To achieve a more nuanced understanding of racial discrimination during adolescence, and particularly the role of neighborhood diversity, we capitalized on a large longitudinal study of middle school students recruited from over 300 diverse neighborhoods who attended one of 26 schools that varied in racial/ethnic diversity. To this existing sample, we added a spatial analysis component using Geographic Information Systems (GIS) software. By doing so, we investigated students’ experiences with racial/ethnic discrimination in a school setting with a particular racial/ethnic composition while simultaneously exploring the racial/ethnic composition of
students’ neighborhoods. It is important to continue investigating students’ experiences with discrimination using a contextual multilevel approach as students are nested within multiple structures and are affected by these contexts simultaneously. Examining the racial composition of neighborhood and school settings situates students’ experiences in a contextual approach that provides a more in-depth understanding of students’ experiences of school-based racial/ethnic discrimination.

We used Bronfenbrenner’s (1979) ecological theory of human development, which takes into account students’ multiple contexts: family, peers, school, community, sociopolitical environment, etc. and how these different contexts affect adolescents’ development. Bronfenbrenner’s (1979) ecological framework of human development identifies five ecological systems: the microsystem, mesosystem, exosystem, macrosystem, and chronosystem, as a way of studying human development in the context of multiple settings.

The microsystem refers to the individual’s family, school, religious institution, neighborhood, and peer group and it describes how these all impact adolescents’ development, while the mesosystem refers to the relations between the microsystem and contexts (i.e. the relation between school and neighborhood experiences). The exosystem takes into account how the mass media, social services, local politics, and neighbors play a role in adolescents’ development; the macrosystem accounts for the role that cultural contexts, such as the attitudes and ideologies of the culture play; and the chronosystem accounts for the transitions as well as sociohistorical events that occur over the course of development.

Incorporating Bronfenbrenner’s (1979) ecological theory of human development was helpful in interpreting adolescents’ experiences with racial/ethnic discrimination, especially at the mesosystem level, where we examined the relations between the microsystems and contexts;
that is, students’ experiences in their school and neighborhood settings and the relation between both of these settings in adolescents’ experiences with racial discrimination. While previous research focuses on these two contexts: school and neighborhoods, independently, our unique contribution was to examine how both of these settings interconnect to shape how adolescents of color experience racial/ethnic discrimination. We examined both the racial composition of the school and neighborhood environments and how the congruence or incongruence of these two contexts affects students’ experiences of discrimination in middle school.

The following were the questions and hypotheses we addressed in the current study. First, we examined to what extent the incongruence (mismatch) of neighborhood and school racial/ethnic composition affected middle school students’ experiences of teacher-initiated discrimination. Previous research on school transitions suggest that students report more victimization as they move from a school context in which they are the racial/ethnic numerical majority to a different school context in which they become the racial/ethnic numerical minority (Benner & Graham, 2009; Benner, 2011; Seaton & Yip, 2009). Expanding on these findings regarding the mismatch in numerical racial/ethnic representation from one school context to another, we hypothesized that students experiencing the daily transition from neighborhoods where they were the ethnic numerical majority to a school context where they were the ethnic numerical minority, would report more teacher-initiated discrimination.

To further understand middle school students’ experiences with teacher-initiated discrimination, we also examined whether there were any racial/ethnic and gender group differences in the association between neighborhood-school racial/ethnic incongruence and teacher-initiated discrimination. Previous research has extensively documented that Latina/o and African American/Black male students experience higher rates of teacher discrimination, in
comparison to their European American/White and Asian American peers (Benner & Graham, 2011, 2013; Huynh, 2012, Huynh & Fuligni, 2010; Rosenbloom & Way, 2004). Given these findings, we expected that the Latino and Black male students in our sample would be particularly more sensitive to experiences of teacher-initiated discrimination.

The second question we addressed in our study focused on the extent to which the incongruence (mismatch) of neighborhood and school racial/ethnic composition affected middle school students’ experiences of peer-initiated discrimination. To further understand adolescents’ experiences with peer-initiated discrimination, we also examined whether there were any racial/ethnic and gender group differences in the association between neighborhood-school racial/ethnic incongruence and peer-initiated discrimination. There is some literature documenting that Asian American students report more experiences of peer discrimination (Benner & Graham, 2011, 2013; Huynh, 2012, Huynh & Fuligni, 2010). Based on previous research, we hypothesized that Asian American students in our sample would report more peer-initiated discrimination especially under conditions of more neighborhood-to-school incongruence.

**Method**

**Participants**

The participants in this study came from a subsample of the UCLA Middle School Diversity Project, a larger multi-wave, longitudinal study that sought to understand the psychosocial benefits and challenges of ethnic diversity in middle schools. Approximately 6,000 middle school students were recruited from 26 urban middle schools across the county of Los Angeles. Participants in the current study were 1,298 seventh-grade students (674 females) from six of the middle schools that were recruited as Cohort 1. The subsample was 44%
Latino/Mexican, 26% European American/White, 16% Asian American, and 14% African American/Black. The six middle schools of Cohort 1 were among the most diverse within the larger sample.

**Procedure**

Both students and parents signed and returned student assent forms and parent consent forms, respectively, for participation in the study. Data for these analyses focused on the seventh grade survey. UCLA research assistants administered survey items in the students’ classrooms. The researchers informed student participants that their responses would be kept confidential. UCLA research assistants read through all survey items aloud while students individually marked their responses on their paper surveys. The student survey took approximately one hour to complete and students received a $10 honorarium for their participation in the study.

After taking the survey, students provided their home address. Students attending the six Cohort 1 middle schools came from 361 different neighborhoods (defined by census tracts in this study). Table 1 (see Appendix A) displays descriptive statistics of the racial/ethnic composition for each of the six schools for the 2010-2011 academic school year.

**Measures**

This study relied on students’ self-reports of perceived teacher-and-peer-initiated racial/ethnic discrimination, as well as school demographic data obtained from the CDE website, and adolescents’ neighborhood demographic data obtained from the Census American FactFinder website. We also calculated a measure of neighborhood-school racial/ethnic incongruence.

**Neighborhood-School Racial/Ethnic Incongruence.** Neighborhood-school racial/ethnic incongruence refers to the mismatch between the racial composition of the school and
neighborhood. We operationalized neighborhood-school racial/ethnic incongruence by capturing diversity at the individual level using percentage of same-ethnicity residents in the neighborhood and percentage of same-ethnicity peers in the school. We calculated percentage of same-ethnicity peers to account for students’ changing ethnic representation from one context to another, that is, from the neighborhood to the school. School demographic data came from the California Department of Education (www.cde.ca.gov) to calculate the racial/ethnic composition of schools and U.S. Census Bureau demographic data used to calculate the racial composition of the neighborhood came from American Fact Finder (www.factfinder.census.gov).

**Percent same-ethnicity.** To calculate neighborhood-school racial/ethnic incongruence using percent same-ethnicity, we used the following formula:

\[ \text{psame}_N - \text{psame}_S, \]

where \( \text{psame}_N \) referred to the percentage of same-ethnicity residents in the neighborhood and \( \text{psame}_S \) referred to the percentage of same-ethnicity peers in the school. We used the difference between the percentage of same-ethnicity residents and same-ethnicity peers as our racial/ethnic incongruence scores. Racial incongruence scores closer to positive one indicated that there were more same-ethnicity residents in the neighborhood than there were peers in the school setting, whereas scores closer to negative one indicated that there were fewer same-ethnicity residents in the neighborhood than there were peers in the school. An incongruence score of 0 meant that there was no difference or mismatch in a student’s racial/ethnic representation in their neighborhood compared to their school setting.

**Perceived racial/ethnic discrimination.** Fisher, Wallace, and Fenton’s (2000) measure of Adolescent Discrimination Distress Index (ADDI) was used to measure adolescents’ self-reports of perceived racial/ethnic discrimination. Fisher et al.’s (2000) ADDI is composed of
institutional (i.e. stores, restaurants), educational (i.e. teacher evaluations), and peer discrimination subscales. We only used the educational and peer discrimination distress subscales for this study. Students were read the following instructions before filling out the measure.

“Sometimes people are treated unfairly. This could happen for many reasons. But a lot of times when middle school students feel they are treated unfairly because of the things about them that are visible to everyone – such as their gender (being a boy or a girl), their race/ethnic group, or their body size, like their weight. Below are some situations where other middle school kids said they were treated unfairly because of their gender, race/ethnic group or their body weight. We want to know if any of these things have happened to you since you started middle school.”

**Perceived teacher-initiated racial/ethnic discrimination.** Teacher-initiated racial/ethnic discrimination was measured using items, such as “did adults at school act as if they thought you were not smart because of your race/ethnicity?” on 5-point scales (1 = never, 5 = a whole lot) (Cronbach’s α = .75).

**Perceived peer-initiated racial/ethnic discrimination.** Students were read the same instructions as the teacher-initiated racial/ethnic discrimination measure, but responded to different items. Peer-directed racial/ethnic discrimination was measured using items, such as “did other kids exclude you from their activities because of your race/ethnic group?” on 5-point scales (1 = never, 5 = a whole lot) (Cronbach’s α = .65).

**Control Variables.** Two individual variables were included as control variables. As a proxy for socioeconomic status (SES), parental education was used. When parents filled out the parent consent form, they had the option of filling out a short parent questionnaire. Parents who filled out the parent survey responded to a question on their highest level of education. On a 6-point scale, parents could select: 1 = elementary/junior high school, 2 = some high school, 3 =
high school diploma or GED, 4 = some college, 5 = 4-year college degree, or 6 = graduate degree \((M = 4.00, SD = 1.55)\).

*Geodesic distance*, the shortest distance between the students’ neighborhood and school, measured in miles, was also used as a control variable in our analyses. Using ArcGIS 10.1, mapping software, we calculated the geodesic distance between each student’s home address and their school address \((M = 5.49, SD = 5.78)\). On average, students in our sample lived approximately 5.49 miles away from school, with the furthest distance away from school being 38.47 miles.

**Analytic Plan**

**Geocoding MSDP Student Home Addresses**

Geographic Information Systems, specifically ArcGIS 10.1 software, was used to geocode students’ self-reported home addresses. Geocoding is a method in which a valid residential address receives a latitude and longitude coordinate that can be plotted on a map and used for spatial analyses (ArcGIS.com). Geocoding allows the researcher to match these latitude and longitude points to census tracts that can then be matched with U.S. Census Bureau data available on American FactFinder, which provides public records on the racial composition of each census tract, housing information, among other neighborhood characteristics data.

Once all 1,298 MSDP student home addresses were geocoded, they were matched to U.S. Census Bureau racial/ethnic demographic data. Figure 1 is a map of all MSDP geocoded student home addresses in the county of Los Angeles. It is apparent that students came from various neighborhoods (defined by census tracts) all with varying racial/ethnic compositions. In the map, points that share the same color are students who attended the same school and the location of those points on the census tracts show where students lived. For example, yellow points on the
map represented students who attended School 104. The yellow points; however, did not all fall on the same location or on the same census tract, indicating that students attending the same school came from different neighborhoods, with varying racial/ethnic compositions and distance away from school.

Figure 1 Map of MSDP students’ self-reported home addresses

Multilevel Model Analyses

After geocoding home addresses, Hierarchical Linear Modeling REML using SAS Proc Mixed was used to examine whether teacher-and-peer-initiated racial/ethnic discrimination varied as a function of neighborhood-school incongruence. We used a multilevel approach to account for the nested structure of the dataset; students were nested in six schools. Intercepts were treated as random and slopes were treated as fixed, given that most of the variance in teacher-and-peer-initiated discrimination occurred within schools or between individuals rather
than between schools. We ran two sets of models, one for teacher-initiated and another model for peer-initiated racial/ethnic discrimination. Students’ socioeconomic status (SES) and students’ distance away from school (measured in miles) were used as Level 1 control variables in both models. Racial/ethnic groups (whether students’ self-identified as African American/Black, Latino/Mexican, Asian American, or European American/White) and gender (female or male) were dummy coded and were used to test for ethnicity and gender interactions. European American/White and male students were used as the reference group in all analyses.

Results

Descriptive Statistics

Table 2 reports descriptive information for all the variables in our study and Table 3 reports the correlations among the continuous variables in our study. Descriptive statistics show that students in our sample, overall, do not report extreme levels of teacher or peer-initiated racial/ethnic discrimination; however, there are statistically significant results by gender and race/ethnicity. Descriptive statistics also show that the average neighborhood-school incongruence score was .11. On average, students from our sample lived in neighborhoods where the proportion of residents of their same-ethnic background was greater than that of their school context. Neighborhood-school racial/ethnic incongruence ranged from -.48 to .80, indicating that the students in our sample were coming from diverse neighborhoods.
Table 2 Descriptive statistics for study variables

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Table 3 Correlations among continuous variables

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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>1. SES</td>
<td>-</td>
<td>-.07*</td>
<td>.24**</td>
<td>.045</td>
<td>-.08**</td>
</tr>
<tr>
<td>2. Distance</td>
<td>-</td>
<td>.28**</td>
<td>.03</td>
<td>.07*</td>
<td></td>
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<tr>
<td>3. NS-Incongruence</td>
<td>-</td>
<td>.04</td>
<td>-.05</td>
<td></td>
<td></td>
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<tr>
<td>4. Teacher-Initiated Discrimination</td>
<td>-</td>
<td></td>
<td>.35**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Peer-Initiated Discrimination</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

NS-Incongruence refers to neighborhood-school racial/ethnic incongruence, with scores ranging from -1 to +1, where -1 refers to students attending schools where there are more peers of their same-ethnicity compared to their neighborhood and a +1 refers to students who live in neighborhoods where there are more residents of their same-ethnicity compared to their school context. An incongruence score of 0 means that there is no mismatch in the percentage of same-ethnicity peers between the neighborhood and school context.

*p < .05; ** p < .01
Teacher-Initiated Racial/Ethnic Discrimination

In examining perceptions of teacher-initiated racial/ethnic discrimination, results from a 2 (gender: female and male) by 4 (ethnicity: African American, Latina/o, Asian American, and European American/White) analysis of variance (ANOVA) demonstrated that there was a main effect of gender, such that males ($M = 1.26, SD = .52$) reported statistically significantly higher levels of teacher-initiated racial/ethnic discrimination than females ($M = 1.22, SD = .45$), $F(1, 1247) = 4.41, p < .05$, partial $\eta^2 = .004$. There was also a main effect of race/ethnicity, such that African American/Black students ($M = 1.38, SD = .60$) reported higher rates of teacher-initiated discrimination than Asian American ($M = 1.19, SD = .42$) and European American/White students ($M = 1.12, SD = .35$), $F(3, 1247) = 13.42, p < .001$, partial $\eta^2 = .03$. African American and Latina/o students ($M = 1.28, SD = .53$) do not differ significantly in their reports of teacher-initiated discrimination. Latina/o students report higher rates of teacher-initiated discrimination than their European American/White peers, $p < .001$. Asian American students only differ significantly from their African American/Black peers, $p = .001$. The ethnicity x gender interaction was not significant.

Peer-Initiated Racial/Ethnic Discrimination

In examining perceptions of peer-initiated racial/ethnic discrimination, results from a 2 (gender: female and male) by 4 (ethnicity: Black, Latino, Asian, and White) ANOVA showed that there was a main effect of gender, such that males ($M = 1.52, SD = .69$) reported statistically significantly higher levels of peer-initiated racial/ethnic discrimination than females ($M = 1.33, SD = .57$), $F(1, 1261) = 27.08, p < .001$, partial $\eta^2 = .02$. There was also a main effect of ethnicity, such that Asian American students ($M = 1.67, SD = .78$) reported significantly higher rates of peer-initiated racial/ethnic discrimination than all other racial/ethnic groups in our
sample: African American/Black \((M = 1.40, SD = .61)\), Latina/o \((M = 1.34, SD = .55)\), and European American/White \((M = 1.41, SD = .65)\) students, \(F(3, 1261) = 14.88, p < .001\), partial \(\eta^2 = .03\). Additional Tukey post hoc tests reveal that none of the other racial/ethnic groups differ from each other in their reports of peer-initiated discrimination; it is only the Asian American students who differ significantly from their African American/Black, European American/White, and Latina/o peers, \(p < .001\). The interaction between gender and ethnicity was not significant.

**Findings from Multilevel Models**

The next set of analyses examined the relationship between neighborhood-school racial/ethnic incongruence (NS-Incongruence) and teacher-and-peer-initiated racial/ethnic discrimination at seventh-grade, while controlling for distance (in miles) and SES (parental education), using SAS Proc Mixed. European American/White and male students were used as the reference group for all analyses. Before running our full multilevel models, we ran two unconditional means models to determine the intra-class correlation (ICC) for both teacher-and-peer-initiated discrimination. The unconditional means model for teacher-initiated discrimination and peer-initiated discrimination were estimated and revealed that 2% of the total variance in teacher-initiated discrimination and 1% in peer-initiated discrimination was accounted for by differences between schools. Given that most of the variance in both outcomes occurred within schools rather than between schools, we kept the intercepts in both models random and the slopes fixed.

Table 4 shows the results from the multilevel models estimated for teacher-and-peer-initiated discrimination. Coefficients in Table 4 reflect unstandardized values. Given that there were significant three-way interactions (Gender x Ethnicity x NS-Incongruence), only Model 3 results will be interpreted. Interpretations for these significant three-way interactions will be
described using predicted means and will be divided by gender for both teacher-and-peer-initiated discrimination. Initially, we hypothesized that students with greater neighborhood-school incongruence; that is, students who experienced the daily transition from the numerical racial/ethnic majority in their neighborhood to the numerical racial/ethnic minority in their school context, would report more teacher-and-peer-initiated discrimination. However, findings from our multilevel models show that neighborhood-school incongruence affects students’ reports of both teacher-and-peer-initiated racial/ethnic discrimination differently depending on students’ racial/ethnic background (Black, Asian, Latino, and White) and gender (female and male).
Table 4 Findings from final multilevel models predicting teacher-and-peer-initiated racial/ethnic discrimination

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Teacher-Initiated Discrimination</th>
<th>Peer-Initiated Discrimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.05 (.07)***</td>
<td>1.45 (.09)***</td>
</tr>
<tr>
<td>Level 1 Predictors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SES (parental education)</td>
<td>.01 (.01)</td>
<td>-.00 (.01)</td>
</tr>
<tr>
<td>Distance (miles)</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Neighborhood-School Incongruence</td>
<td>.24 (.20)</td>
<td>.41 (.25)</td>
</tr>
<tr>
<td>Female (gender)</td>
<td>.03 (.07)</td>
<td>-.07 (.09)</td>
</tr>
<tr>
<td>African American</td>
<td>.35 (.08)***</td>
<td>-.06 (.10)</td>
</tr>
<tr>
<td>Asian American</td>
<td>.10 (.07)</td>
<td>.50 (.09)***</td>
</tr>
<tr>
<td>Latina/o</td>
<td>.17 (.06)**</td>
<td>-.04 (.08)</td>
</tr>
<tr>
<td>2-way Interactions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female_x_African American</td>
<td>-.23 (.10)*</td>
<td>-.06 (.13)</td>
</tr>
<tr>
<td>Female_x_Asian American</td>
<td>-.06 (.10)</td>
<td>-.39 (.13)**</td>
</tr>
<tr>
<td>Female_x_Latina/o</td>
<td>-.01 (.08)</td>
<td>-.04 (.11)</td>
</tr>
<tr>
<td>Female_x_NS-Incongruence</td>
<td>-.21 (.28)</td>
<td>-.62 (.36)</td>
</tr>
<tr>
<td>Black_x_NS-Incongruence</td>
<td>-.20 (.27)</td>
<td>-.32 (.35)</td>
</tr>
<tr>
<td>Asian_x_NS-Incongruence</td>
<td>-.16 (.44)</td>
<td>-.87 (.57)</td>
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<td>Latino_x_NS-Incongruence</td>
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<td>-.45 (.31)</td>
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<td>3-way Interactions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female_x_African American_x_NS-Incongruence</td>
<td>.74 (.39)*</td>
<td>1.01 (.51)*</td>
</tr>
<tr>
<td>Female_x_Asian American_x_NS-Incongruence</td>
<td>.64 (.60)</td>
<td>1.38 (.77)</td>
</tr>
<tr>
<td>Female_x_Latina/o_x_NS-Incongruence</td>
<td>.66 (.33)*</td>
<td>.85 (.43)*</td>
</tr>
<tr>
<td>Variance Components</td>
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</tr>
<tr>
<td>Between-school variance</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Within-school variance</td>
<td>.23 (.01)***</td>
<td>.40 (.02)**</td>
</tr>
</tbody>
</table>

NS-Incongruence refers to neighborhood-school incongruence and the levels range from -1 (more same-ethnicity peers in the school compared to the neighborhood) to +1 (more same-ethnicity residents in the neighborhood compared to the school); values of 0 mean that there is no mismatch between the percentage of same-ethnicity people in the neighborhood compared to the school. The reference group is White and males.

*p < .05; ** p < .01; *** p < .001
Teacher-Initiated Racial/Ethnic Discrimination

Table 4 shows two significant three-way interactions for teacher-initiated discrimination between neighborhood-school incongruence, ethnicity, and gender for Latina/o students ($\beta = .66, p < .05$) and African American/Black students ($\beta = .74, p < .05$).

**Latina/o students.** Figure 2 (left panel) shows the relationship between varying levels of NS-Incongruence (ranging from 2 standard deviations below to 2 standard deviations above the mean) and teacher-initiated discrimination, with separate lines representing different racial/ethnic groups, for male students. Predicted means plotted in Figure 2 show that Latino male students, in comparison to European American/White male students, show a relationship between neighborhood-school racial/ethnic incongruence and teacher-initiated discrimination that is different than what was hypothesized. Compared to White males, Latino male students actually reported less teacher-initiated discrimination as they moved from an incongruence score that falls 2 standard deviations below the mean (more same-ethnicity peers in the school than in the neighborhood) to an incongruence scores that falls 2 standard deviations above the mean. That is, Latino males who came from a neighborhood with a higher percentage of same-ethnicity residents compared to that of their school setting actually reported less teacher-initiated discrimination.

Figure 2 (right panel) shows the relationships for Latina females. Latinas follow the hypothesized relationship, that is, as they move from an incongruence score 2 standard deviations below the mean to 2 standard deviations above the mean, they report more teacher-initiated discrimination. For White females, there were no differences in teacher-initiated discrimination as a function of NS-incongruence.
Figure 2 Plots of the three-way interaction for teacher-initiated discrimination between neighborhood-school incongruence, Latina/o students, and gender (female and male)
African American/Black students. Figure 3 (left panel) shows the predicted relationship for African American male students in comparison to European American/White male students. The predicted means plot show that there is not much difference in teacher-initiated discrimination reports as African American male students moved from an incongruence score 2 standard deviations below the mean to an incongruence score 2 standard deviations above the mean. In other words, while African American male students report more teacher-initiated discrimination than their White peers, their reports of teacher-initiated discrimination do not vary by the context that they are in; they report similar experiences across contexts.

Figure 3 (right panel) shows that African American/Black female students also follow the hypothesized relationship; that is, as they move from a neighborhood context where they are well represented to a school context where they are no longer well represented, they report more teacher-initiated discrimination. This relationship is not so for the White female students in our sample as there were no differences in teacher-initiated discrimination as a function of NS-incongruence.
Figure 3 Plots of the three-way interaction for teacher-initiated discrimination between neighborhood-school incongruence, African American/Black students, and gender (female and male)
Peer-Initiated Racial/Ethnic Discrimination

Table 4 shows two significant three-way interactions for peer-initiated discrimination between neighborhood-school incongruence, ethnicity, and gender for Latina/o students ($\beta = .85$, $p < .05$) and African American/Black students ($\beta = 1.01$, $p < .05$).

**Latina/o students.** Figure 4 (left panel) shows the relationship between varying levels of NS-Incongruence (ranging from 2 standard deviations below to 2 standard deviations above the mean) and peer-initiated discrimination for Latino male students. Predicted means show that European American/White male students follow the hypothesized relationship; that is, as White male students move from an incongruence score 2 standard deviations below the mean (more same-ethnicity peers in the school than in the neighborhood) to an incongruence score 2 standard deviations above the mean (more same-ethnicity residents in the neighborhood than in the school), they report more peer-initiated discrimination. However, Latino male students do not follow this hypothesized relationship. Figure 4 (left panel) shows that Latino male students’ reports of peer-initiated discrimination do not differ that much as they move from an incongruence score 2 standard deviations below the mean to an incongruence score 2 standard deviations above the mean.

Figure 4 (right panel) shows the relationship between varying levels of NS-Incongruence and peer-initiated discrimination for Latina female students. Predicted means show that White female students report less peer-initiated discrimination as they move from an incongruence score 2 standard deviations below the mean (more same-ethnicity peers in the school than in the neighborhood) to an incongruence score 2 standard deviations above the mean (more same-ethnicity residents in the neighborhood than in the school). While White female students report less peer-initiated discrimination as they move from a neighborhood where they are well
represented to a school setting where they are no longer as well represented, Latina female students report more peer-initiated discrimination with this daily neighborhood to school transition. As Latina female students move from an incongruence score 2 standard deviations below the mean (more same-ethnicity peers in the school than in the neighborhood) to an incongruence score 2 standard deviations above the mean (more same-ethnicity residents in the neighborhood than in the school), they report more peer-initiated discrimination.
Figure 4 Plots of the three-way interaction for peer-initiated discrimination between neighborhood-school incongruence, Latina/o students and gender (female and male)
African American/Black students. Figure 5 (left panel) shows that Black male students’ reports of peer-initiated discrimination do not differ all that much as they move from an incongruence score 2 standard deviations below the mean to an incongruence score 2 standard deviations above the mean. It is the White male students who experience higher rates of peer-initiated discrimination as they move from a neighborhood where they are well represented to a school where they are no longer as well represented, while the Black male students in our sample did not experience different rates of peer-initiated discrimination depending on the mismatch of their neighborhood and school contexts. Black male students reported similar rates of peer-initiated discrimination whether they were well represented in their school context or whether they were not as well represented in comparison to their neighborhood setting.

Figure 5 (right panel) shows that Black female students follow the hypothesized relationship; that is, they report more peer-initiated discrimination as they move from an incongruence score 2 standard deviations below the mean to an incongruence score 2 standard deviations above the mean. While the White female students in our sample reported less peer-initiated discrimination as they moved from a neighborhood context where they were well represented to a school setting where they were no longer as well represented, the Black female students in our sample reported more peer-initiated discrimination with this daily neighborhood-school transition.
Figure 5 Plots of the three-way interaction for peer-initiated discrimination between neighborhood-school incongruence, African American/Black students, and gender (female and male)
Discussion

The current study sought to understand middle school students’ experiences with racial/ethnic discrimination in a multilevel contextual approach. While there is a well-established body of literature that thoroughly documents adolescents’ experiences with racial/ethnic discrimination in the school context (Alfaro et al., 2009; Benner & Graham, 2011, 2013; Huynh, 2010, Huynh & Fuligni, 2012; Rosenbloom & Way, 2004) and there is a body of literature that documents the role of the neighborhood context on students’ experiences with racial/ethnic discrimination (Creasey & Jarvis, 2012; Levanthal, Dupéré, & Brooks-Gunn, 2009; Martin et al., 2011; Plunkett et al., 2007; Sampson, Morenoff, & Gannon-Rowley, 2002; Seaton & Yip, 2009; Stewart, et al., 2009) less research examines these two contexts simultaneously. More specifically, how do both the neighborhood and school contexts simultaneously inform middle school students’ experiences of school-based racial/ethnic discrimination? Bronfenbrenner (1979) theorized that students are part of multiple systems that interact with each other. In following Bronfenbrenner’s ecological framework, this study examined whether a mismatch in students’ racial/ethnic representation between their neighborhood and school contexts affected their reports of teacher-and-peer-initiated racial/ethnic discrimination.

Using a unique racially/ethnically diverse sample from the UCLA Middle School Diversity Project, a longitudinal study with participants coming from over 26 different middle schools, we added a spatial analysis component to examine students’ neighborhood contexts. We used ArcGIS 10.1 to geocode students’ home addresses and match to US census demographic data. By geocoding and matching student data to census demographic data, we were able to map the racial/ethnic composition of all of our students’ neighborhoods. Using neighborhood and school records data, we created a neighborhood-school incongruence score, a measure of the
mismatch in the percentage of same-ethnicity residents in the neighborhood and the percentage of same-ethnicity peers in the school, to examine the extent to which experiencing the daily neighborhood to school transition would affect students’ reports of racial/ethnic discrimination.

Descriptively, our results were consistent with previous research suggesting that African American and Latina/o students are at an increased risk for experiencing teacher-initiated racial/ethnic discrimination and Asian American students are most vulnerable to experiences of peer-initiated racial/ethnic discrimination in their school contexts (Benner & Graham, 2011, 2013; Huynh, 2010, Huynh & Fuligni, 2012; Rosenbloom & Way, 2004). In examining students’ experiences with racial/ethnic discrimination in the context of neighborhood-school incongruence, our results showed that incongruence affected students’ perceptions of teacher- and peer-initiated racial/ethnic discrimination differently depending on their racial/ethnic group and gender.

Results from multilevel models showed that there were three-way interactions, such that race/ethnicity and gender moderated the association between neighborhood-school incongruence and both teacher- and peer-initiated discrimination. For teacher-initiated discrimination, Latinas and African American girls showed the predicted relationship compared to White girls: more reported teacher discrimination when they resided in a neighborhood where they were well represented and attended a school setting where there were fewer peers of their same-ethnicity compared to that of their neighborhood.

The data for males, however, was more complex. Latino male students compared to their White male counterparts reported less teacher-initiated discrimination despite attending a school where there were fewer peers of their same-ethnicity compared to the percentage of same-ethnicity residents in their neighborhood. This daily transition from the neighborhood to the
school context seems to serve as a protective factor for Latino male students. It is for students who are already vulnerable to these experiences that they report less discrimination as they move from a neighborhood context where they are well represented to a school setting where they are no longer that well represented. However, this is not true for Black male students. Even though Black males are the most vulnerable to experiences of teacher-initiated discrimination, they do not benefit from this incongruence protective factor as they shift from one context with a unique racial demographic to one that is different. For the African American male students in our sample, NS-incongruence did not matter. They reported similar experiences of teacher-initiated discrimination across different contexts. This may have to do with teachers’ lower expectations of African American students in school contexts (Hudley & Graham, 2001).

For peer-initiated discrimination, Latino and Black male students, compared to their White male student counterparts, did not follow hypothesized relationship; that is, they did not report differences in peer-initiated discrimination as they moved from a neighborhood context where they were the ethnic numerical majority to a school context where they are no longer that well represented. While the White male students in our sample reported more peer-initiated discrimination as they moved from a neighborhood where they were well represented to a school context where they were no longer well represented, for our Black and Latino male students it did not matter what context they were in, they reported similar experiences of peer-initiated discrimination across contexts. On the other hand, the Latina and Black female students in our sample were particularly most vulnerable to experiencing more peer-initiated discrimination, in comparison to their White female counterparts, as they transitioned from a neighborhood where they were well represented to a school setting where they were no longer as well represented.
Limitations and Future Directions

These results push us to further examine the neighborhood characteristics available in communities that could serve as protective factors for adolescents of Color and why they may be buffering some of the negative experiences of discrimination for some students and not others. These results also warrant additional analyses to examine other variables that may mediate or moderate this relationship, such as school factors that might be guiding differential effects for students. In order to understand students’ experiences using a contextual multilevel approach, it is also important to run analyses using a cross-classified multilevel model, in which case students are cross classified at the level 1 Model. The nature of the current dataset is that of a cross-classified model rather than one that follows students neatly nested within schools and neighborhoods. Given that students attending the same school can come from various neighborhoods, the appropriate statistical approach to use would be that of a cross-classified multilevel model. Future studies interested in understanding students’ experiences with racial/ethnic discrimination while simultaneously examining the neighborhood and school contexts should use a cross-classified multilevel approach. In order to fully understand how middle school students’ neighborhood and school contexts affect their perceptions of teacher- and peer-initiated discrimination, a mixed-methods approach should also be considered. Our measure of school-based discrimination may not fully capture students’ perceptions of discrimination and conducting qualitative interviews with our participants, may give us a more in-depth look at middle school students’ understanding and perceptions of racial/ethnic discrimination.

Future studies that focus on students’ neighborhood and school contexts should also highlight the strengths of GIS mapping, which highlight the community cultural assets or the
cultural wealth that exists in marginalized communities. It is important to continue to examine the characteristics in adolescents’ neighborhoods/communities that serve as protective factors in ameliorating these negative experiences with racial/ethnic discrimination. Aside from highlighting these protective factors, it is also important to understand how we can highlight this cultural wealth in diverse school contexts. An important question to consider is how we can integrate these protective factors in the school setting. How can we highlight the knowledge, strengths, and wealth that students bring with them to school as a way of reducing the negative effects of discrimination in today’s diverse school contexts?
### Table 1
Descriptive Statistics of the Racial/Ethnic Composition of Schools for the 2010-2011 Academic Year

<table>
<thead>
<tr>
<th>School</th>
<th>Latina/o</th>
<th>Asian/PI</th>
<th>African American</th>
<th>White</th>
<th>Multiethnic/Other</th>
</tr>
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<tbody>
<tr>
<td>101</td>
<td>32.3%</td>
<td>16.5%</td>
<td>11.9%</td>
<td>38.1%</td>
<td>1.3%</td>
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<tr>
<td>102</td>
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<td>16.0%</td>
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<td>18.4%</td>
<td>0.7%</td>
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<td>103</td>
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<td>8.4%</td>
<td>16.8%</td>
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</tr>
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<td>104</td>
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<td>34.5%</td>
<td>12.5%</td>
<td>7.5%</td>
<td>0.8%</td>
</tr>
<tr>
<td>105</td>
<td>41.7%</td>
<td>14.1%</td>
<td>19.6%</td>
<td>23.9%</td>
<td>0.7%</td>
</tr>
<tr>
<td>106</td>
<td>25.7%</td>
<td>10.7%</td>
<td>15.7%</td>
<td>47.4%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

Note. Descriptive statistics of the racial/ethnic composition of the schools were obtained from the California Department of Education, Educational Demographics Unit, for the 2010-2011 academic school year. Simpson’s index of diversity was calculated for each school using the following formula: \( D(S) = 1 - \sum p_i^2 \). Latina/o, American Indian/Alaska Native, Asian, Pacific Islander, Filipino, African American, White, and Multiethnic/Other were used when calculating Simpson’s index of diversity.
References


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