Peer Group Ethnic Diversity and Social Competencies in Youth Attending Rural Middle Schools

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Abstract

This study examines concurrent and short-term longitudinal (i.e., academic year) relations between peer network racial/ethnic diversity and indicators of social and academic competence in a sample of African American, Latino, Native American, and White sixth-grade students attending rural schools ($N = 481$; 50% female). Results from two-level hierarchical linear models indicated that in the fall of sixth grade, peer network diversity was positively related to teacher-rated interpersonal competence for Native American youth and to peer protection from bullying for White youth. Students in more diverse peer groups had higher teacher-reported social and academic competence in the spring of sixth grade; these associations were moderated by racial/ethnic group, emerging most consistently for students of color. Results suggest benefits of peer network diversity in early adolescence and also highlight a need to understand mechanisms through which these benefits are incurred.

Keywords

peer groups, ethnic/racial, interpersonal competence, networks, rural/urban, diversity

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Issues of racial diversity and integration in schools have long had a place in national conversations about education. A recent Supreme Court ruling on affirmative action as a means to maintain student body diversity (e.g., *Fisher v. University of Texas at Austin*, 2016) coupled with a national call for strategies to create diversity in U.S. Schools (King, 2016) have brought these issues back to the center stage. While student diversity may be considered synonymous with interracial friendships and intergroup harmony, by early adolescence, racially segregated peer groups and related affiliations (e.g., friendships) tend to be the norm for most youth, even in the context of racially diverse schools (Brown, Herman, Hamm, & Heck, 2008). Given that peer group affiliations can influence central developmental processes (e.g., identity development; Brown, 1990; Brown & Larson, 2009), academic achievement (Hamm, Schmid, Farmer, & Locke, 2011; Kindermann, 2007; Ryan, 2001), and social attitudes and behaviors (Cairns, Xie, & Leung, 1998), there remains a need to understand how diversity operates at the peer group level. Indeed, given that small groups typically mediate effects of larger settings (Fine, 1987, 2012; Tseng & Seidman, 2007), the proximal processes (Bronfenbrenner, 1979) occurring in peer group settings may have the most direct influence on how youth experience and inform the racial/ethnic climate of their schools.

Notably, research on peer group interactions still lacks explicit attention to race or ethnicity as a social context; thus, we have limited understanding of if and how the racial/ethnic make-up of youth's peer groups is related to their school experiences. Prevailing views of diversity suggest that it promotes tolerance and innovation for all youth; however, in the context of racial stratification and disparities in education, social capital theories predict that diversity may be especially beneficial for youth from historically stigmatized racial/ethnic groups.[1] Thus, in the present study, we consider both perspectives when examining associations between peer group racial/ethnic diversity and indicators of social and academic competence in early adolescence.

Peer Group Composition: Diversity and Homophily

Peer groups are defined as "small, self-selected collectives of like-minded affiliates who interact with one another on a regular basis" (Hamm et al., 2011, p. 43). When considering racial/ethnic composition as a structural feature of a peer group, it is important to consider factors that might influence this composition. The likelihood of an ethnically diverse peer group is influenced in-part by the racial/ethnic demographics of the school; when more racial/ethnic groups are represented in larger numbers, cross-group ties become more available. However, evidence suggests that the association between available and actual cross-group ties is nonlinear, with high rates

reaching a peak in moderately diverse schools and then dropping off in schools with higher levels of diversity (Moody, 2001).

Another factor influencing cross-racial social ties is homophily, or the tendency for students with similar interests, values, and behaviors to interact with one another (McPherson, Smith-Lovin, & Cook, 2001). Homophily can occur on a number of dimensions including demographic characteristics that are ascribed (e.g., gender) or acquired (e.g., education level), and personal values (e.g., attitudes, behaviors); however, race/ethnicity remains one of the most salient dimensions along which homophily is observed (McPherson et al., 2001). Importantly, as discussed below, several of these assortative dimensions are linked to social positions and access to resources, which means that homophily contributes to the maintenance of social stratification (McPherson et al., 2001).

A developmental perspective can also inform an understanding of peer group composition. Given the increasing salience of social identity in adolescence, some have proposed that same-race peer groups provide safe opportunities for ethnic identity exploration resulting in normative ethnic segregation (Peshkin, 1991; Tatum, 1997). In keeping with this perspective, Hamm (2000) found that Black youth's friendships were characterized by similarity in ethnic identity, although this was not the case for White or Asian youth. The presence of same-race peers appears to provide psychosocial benefits, especially in adolescence when youth are often engaged in identity exploration; thus, some suggest that a "critical mass" of same-race peers in schools is necessary to combat feelings of disconnection and loneliness and to attenuate against intergroup discrimination, particularly for youth of color (Benner & Crosnoe, 2011; Linn & Welner, 2007). In support of this, studies have shown that a larger percentage of same-race peers at school relates to greater school attachment and stability in feelings of belonging (Benner & Crosnoe, 2011; Benner & Graham, 2009; Johnson, Crosnoe, & Elder, 2001). Conversely, in more diverse schools, ethnic minority youth have reported greater discrimination (Benner & Graham, 2011; Seaton & Yip, 2009). Thus, in the context of diverse schools, tendencies toward peer group racial homophily, driven in-part by social identity development, are often observed. While there may be some developmental benefits to this, prevailing views of diversity suggest that the true rewards of diversity are realized when students have meaningful interactions across racial/ethnic group boundaries.

The Diversity Hypothesis

General consensus about the "educational benefits of diversity" (*Grutter v. Bollinger*, 2003) has been supported by a compelling body of evidence (*Brief*

for Fisher v. University of Texas, 2016). Indeed, in making the case to use race as one of many factors in the admissions process (typically considered as a form of affirmative action), the University of Texas (UT) asserted that a diverse student body would promote educational values like "the destruction of stereotypes, the 'promot[ion of] cross-racial understanding,' the preparation of a student body 'for an increasingly diverse workforce and society,' and the 'cultivat[ion of] a set of leaders with legitimacy in the eyes of the citizenry'" (UT Admissions policy, as cited in *Fisher v. University of Texas at Austin*, 2016, p. 12). In general, the "diversity hypothesis" suggests that bringing students from different backgrounds together can promote social and cognitive growth. The social benefits of racial/ethnic diversity have long been grounded in intergroup contact theory (Allport, 1954), which states that under particular conditions (e.g., interpersonal interactions, common goals, cooperation, equal status of members from different groups, and institutional support), stereotypes, prejudice, and intergroup conflict are likely to be reduced. There has been some empirical support for intergroup contact theory (Pettigrew & Tropp, 2008; Tropp & Prenovost, 2008), although evidence remains mixed (Thijs & Verkuyten, 2014).

More recently, positive social correlates of diversity have been hypothesized to be a result of increased flexibility for acceptable behavior; in other words, having more diverse peers potentiates more variability in social norms, resulting in greater opportunities for all youth to find a place to belong (Graham, 2006, 2011; Graham, Bellmore, Nishina, & Juvonen, 2009). Youth who select into diverse peer groups may also have high levels of social/cultural flexibility, permitting them to navigate potential boundaries of difference in a socially competent manner (Carter, 2010). Academic benefits of diversity have been explained through cognitive theories; exposing youth to different perspectives may increase cognitive dissonance and promote cognitive flexibility (i.e., more complex, innovative thinking; Benner & Crosnoe, 2011; Gurin, Dey, Hurtado, & Gurin, 2002).

If peer group racial/ethnic diversity is associated with cognitive and social flexibility, then one might predict that students in more diverse peer groups would have higher levels of achievement compared with peers in homogeneous groups. Similarly, if these students have greater cultural flexibility, they may also be less likely to engage in bullying behaviors, which often target peers' physical characteristics or behaviors perceived as nonconforming (Russell, Sinclair, Poteat, & Koenig, 2012). Indeed, one of the ways in which diversity is argued to benefit youth is through the creation of a social context in which norms are more inclusive (Graham et al., 2009), which one might expect to translate into a group structure that is more egalitarian and less hierarchical when the group is more diverse. Specifically, groups that are

more egalitarian tend to be more inclusive and accepting of diverse norms, while hierarchical groups may foster prejudice and aggression (Ahn, Garandeau, & Rodkin, 2010). Thus, diverse peer groups may be less likely to demonstrate aggressive, antisocial behavior, like peer bullying.

Diversity and Social Capital

The diversity hypothesis suggests that the benefits of diversity should be similar for all youth (Mickelson, 2015; Siegel-Hawley, 2012); however, there is some evidence that outcomes may vary based on youth's race (Wilson & Rodkin, 2013). What may be missing from the current "benefits of diversity" narrative is a closer focus on the role of social position and access to resources that is an inherent component of our racially stratified society (McPherson et al., 2001). Additional insight into the potential benefits of peer group diversity can be gained by considering the role of social capital in reducing or maintaining inequality (e.g., Burton & Welsh, 2015; Neal, 2014). Studies of social networks in the field of sociology have pointed to the association between network ties and access to resources in the form of social and cultural capital (Coleman, 1988; McPherson et al., 2001). It is important to recognize that while all groups have social and cultural capital, particular forms of capital have historically been more valued than others in the context of schools (Yosso, 2005). In the United States, White Americans, especially males, tend to have the most access to the kinds of social capital that translate into school success relative to people from historically marginalized racial/ethnic groups (McPherson et al., 2001; Yosso, 2005). In her study of low-income African American and Latino youth, Carter (2005) distinguished between "dominant cultural capital," or "the cultural knowledge and skills of high-status racial, ethnic, and socioeconomic groups" (pp. 49-50), and "nondominant cultural capital," or "a set of tastes, appreciations, and understandings . . . used by lower status groups members to gain 'authentic' cultural status positions in their respective communities" (p. 50).

Importantly, access to dominant cultural capital can contribute positively to academic success, given that schools traditionally reward behaviors, knowledge, and values that are aligned with dominant group norms. Conversely, nondominant capital often functions to promote peer group belonging and to preserve cultural boundaries among ethnic minority youth (Carter, 2005). Thus, for youth of color, having an ethnically diverse peer network, especially one including White peers, may provide access to the kinds of capital associated with doing well in school, both academically and behaviorally (i.e., behaviors a teacher deems "appropriate"), while having an ethnically homogeneous peer network may confer psychosocial benefits

(e.g., sense of belonging) and reinforce nondominant capital. Conversely, White youth in diverse peer groups may have neutral gains or may even lose some of the benefits afforded by social and cultural capital, particularly when their peers are from historically marginalized ethnic groups. Ultimately, this alternative to the diversity hypothesis suggests that diversity may not operate in the same way for all youth.

The Present Study

The present study examines concurrent and short-term longitudinal (i.e., academic year) relations between ethnic diversity and indicators of social and academic competence in early adolescent peer groups. Much of what is currently known about ethnic diversity in youth's social relationships comes from studies of urban and suburban schools; most have examined the experiences of White and Black youth, with a smaller number including Hispanic/Latino and Asian American youth. Rural schools, which often have particular geographic constraints affecting the ethnic diversity of student populations (i.e., remote locations or small-sized feeder communities; Provasnik et al., 2007), are rarely considered. Moreover, Native American youth are grossly underrepresented in this area of research, limiting our understanding of the specific role of ethnic diversity in their social relationships and of their social experiences more generally. In the present study, peer group diversity is examined in a sample of African American, Latino, Native American, and White youth attending rural schools, with just under one in five youth in the sample identified as Native American. A notable feature of the present sample is that in most of the eight schools, the vast majority of students in the school come from only two racial/ethnic groups. White students are present in every school, while the other group (when only two were present) consists either of African American, Latino, or Native American students. This kind of school composition means that peer groups that were not homogeneous generally include a mix of White students and students of color.

While prevailing views of diversity predict universal academic and interpersonal benefits for all youth, social capital theories suggest that peer group diversity, particularly when it involves interacting with White peers, may be mostly beneficial for youth from historically stigmatized racial/ethnic groups. Thus, our hypotheses are informed by both of these perspectives. First, as predicted by the diversity hypothesis, ethnically diverse peer groups may lessen vulnerability to victimization and evince lower levels of aggression, potentially due to more flexible norms for acceptance that may be less prevalent in ethnically homogeneous groups (i.e., diversity promotes tolerance; Graham et al., 2009; Shi & Xie, 2014). Thus, we expected peer network

diversity to relate positively to prosocial behaviors (e.g., intervention in bullying) and negatively to antisocial behaviors (e.g., encouragement of bullying) for all youth. Second, incorporating a social capital perspective on diversity, which suggests that access to dominant capital may be particularly impactful on teacher perceptions of student behaviors and abilities, we expected peer diversity to positively relate to teacher-reported social competence and popularity and negatively relate to teacher-reported aggression for youth of color but not for White youth. Finally, the idea that exposure to difference may promote cognitive dissonance and cognitive growth (i.e., the diversity hypothesis; Benner & Crosnoe, 2011) leads to the prediction of a positive association between peer group diversity and academic competence. However, given that White youth may accrue more of the capital associated with school success, and research showing that cross-race friendships may be particularly beneficial for ethnic minority youth (Graham, Munniksma, & Juvonen, 2014; Hamm, Brown, & Heck, 2005; Kawabata & Crick, 2015), we hypothesized that the associations with teacher-reported academic competence would be moderated by ethnic group membership.

Method

Sample and Procedures

Data for this study are drawn from a larger, longitudinal study focused on the behavioral, academic, and social adjustment of rural youth as they transition into adolescence. Thirty-six schools were part of a research intervention project that followed a randomized controlled trials design, in which matched pairs of schools within diverse geographic regions of the United States were randomly assigned to intervention or control condition. Intervention condition schools received a professional development program for teachers; matched control schools were offered the program following completion of the research study (see Farmer et al., 2013; Hamm, Farmer, Lambert, & Gravelle, 2014). Baseline data were collected in the spring of fifth grade (T1), and follow-up data were collected in the fall (T2) and spring of sixth grade (T3).

The majority of the schools in the larger study were ethnically homogeneous ($n = 28$); given the focus of the present study, analyses are limited to the eight schools in which at least two ethnic groups were represented. These eight schools were located in three regions of the United States (Northern Plains, Southwest, and Southeast); half were middle schools with Grades 6 through 8, while the other half included Grades K-8. A total of 481 students (50% female) from four ethnic groups (30.6% African American,

20.7% Latino, 17.1% Native American, 29.7% White) participated in at least one wave of data collection (*M* participation rate = 71.5%, *SD* = 0.08). While these four groups were represented in the overall sample, within each school, the large majority of students were from two groups (White students and students from one ethnic minority group). On average, three quarters of the students in each school were eligible for free or reduced-price lunch (*M* = 76.5%, *SD* = 22.4). Sample demographics by school are presented in Table 1.

All sixth-grade teachers in regular education classrooms were invited to participate. For most students, parental consent was obtained in the spring of fifth grade; parents of new students also received consent information in the fall of sixth grade. For all schools and time points, project staff administered paper-and-pencils surveys to consented students in the school cafeteria or similar space. Teachers also completed brief surveys about participating students (Hamm et al., 2014). Teachers received monetary compensation and students received a small school supply item for participation. All study procedures were approved by a University Institutional Review Board.

Measures

Peer group indices. Peer groups were identified using the Social Cognitive Mapping (SCM) procedure (Cairns, Leung, Buchanan, & Cairns, 1995; Cairns, Perrin, & Cairns, 1985). All youth in the study were asked, "Are there some kids in your grade who hang around together a lot? Who are they?" Students listed as many groups as they could think of from memory. Computer software (SCM Version 4.0) was then used to aggregate reports across all participants in a school by constructing a co-occurrence matrix showing the number of times each student is named as part of the same group as each other student. It assumes co-occurrences will be higher between students who are in the same group than with students who are not and looks to identify distinct groups with minimal overlap. Students whose profiles are significantly correlated ($r \geq .40$) with at least 50% of group members are considered to be in the same group, and students are assigned to only one group. Peer groups identified by SCM have been validated by observational and survey data, and analysis of students' classroom interaction patterns (Cairns, Leung, et al., 1995; Gest, Farmer, Cairns, & Xie, 2003); in addition, this method has high test-retest reliability over a 3-week period ($\alpha = .90$; Cairns, Leung, et al., 1995). Following these procedures, in the current sample, there were 94 peer groups identified with an average of 5.09 members per group in the fall of sixth grade; three participants were removed from the analyses because they did not belong to a peer group.

Table 1. Sample Demographics by School.

Variable	School								Overall M (SD)
	1	2	3	4	5	6	7	8	
School level									
School size[a]	150	208	352	348	222	72	165	440	244.63 (123.83)
School configuration	K-8	K-8	K-8	K-8	MS	MS	MS	MS	—
Racial/ethnic minority students (%)	84.00	87.02	50.85	38.03	67.57	40.28	89.09	85.62	67.81 (21.82)
Female (%)	46.67	45.67	41.89	44.03	42.79	56.34	46.06	60.18	52.05 (6.64)
Free/reduced lunch status (%)	38.00	79.33	88.92	79.02	98.65	47.22	98.18	82.50	76.48 (22.38)
School met AYP	Yes	Yes	No	No	Yes	Yes	No	No	—
Sample level									
Sample size (n)[b]	42[c]	66	44	88	66	37	49	89	60.13 (20.45)
Female (proportion)	0.45	0.45	0.45	0.47	0.55	0.57	0.59	0.48	0.50
Simpson's diversity index	0.31	0.32	0.51	0.56	0.47	0.57	0.10	0.32	0.40 (0.16)
African American (%)	—	—	63.64	42.05	1.52	2.70	—	84.27	29.52 (45.66)
Latino (%)	—	—	—	1.14	66.67	40.54	93.88	—	22.04 (41.49)
Native American (%)	78.57	80.30	2.27	3.41	—	2.70	—	2.25	19.33 (39.53)
White (%)	21.43	16.67	34.09	51.14	30.30	51.35	6.12	11.24	27.44 (44.67)
Other race or ethnicity (%)	—	3.03	—	2.27	1.52	2.70	—	2.25	1.66 (1.28)

Note. K-8 = Kindergarten through eighth grade; MS = middle school (Grades 6-8); AYP = adequate yearly progress.
[a]Includes all students in Grades K-8 or Grades 6 to 8 based on school configuration.
[b]Includes all students in "sixth-grade classrooms."
[c]In School 1, sixth-grade classrooms served students from other grades (e.g., Grades 5 and 7).

Simpson's Diversity Index (Simpson, 1949) was used to calculate peer group ethnic diversity in the fall of sixth grade (T2). The diversity index comes from the field of ecology and was developed as a means of identifying biological diversity; it accounts both for *richness* (i.e., the number of different ethnicities in a group) and *evenness* (i.e., the relative abundance of different ethnicities in a group). The formula is

$$D = 1 - \sum_{k} \left(\frac{n_k}{N} \right)^2,$$

where N is the total group size (e.g., peer group) and n_k is the number of youth in ethnic group k. Thus, n_k / N represents the proportion of youth from a given ethnic group; the proportion is squared and then summed across all ethnic groups. The result is a number between 0 and 1 representing the probability that any two randomly selected students will be from different ethnic groups. Groups that are very heterogeneous (i.e., high on richness and evenness) will have a higher diversity index than groups that are more homogeneous. The five racial/ethnic categories in the dataset (Black, Hispanic/Latino, Native American, White, and Other) were used to calculate diversity indices at T2.

Teacher-reported competencies. The Interpersonal Competence Scale–Teacher Report (ICS-T; Cairns, Leung, Gest, & Cairns, 1995) is an 18-item survey that teachers completed on each participating student in their class; the present study includes ICS-T scores from the spring of fifth grade (baseline), and fall and spring of sixth grade (outcome variables). Each item on the ICS-T is a descriptor of a specific social or behavior characteristic. For each item, teachers rate the student on a 7-point Likert-type scale with three anchors: one on each extreme and one in the middle (e.g., *never argues*, *sometimes*, *always argues*). The ICS-T has been used for assessing social development of children and adolescents through adult ratings (Cairns, Leung, et al., 1995). Items include indicators of social acceptance, antisocial behavior, academic performance, and internalizing problems. In the present study, scores from the scale's three primary factors were examined: *aggression* (e.g., argues, fights; α = .84), *popularity* (e.g., popular with boys/girls, lots of friends; α = .84), and *academics* (e.g., spelling and math; α = .77), along with an overall *interpersonal competence* rating (the mean of all 18 items, including the three primary and three subsidiary subscales with aggression items reverse-coded).

Peer protective ecology. The middle school version of the Protective Peer Ecology Scale (Song, 2005) is used to measure three variables: *peer protection*, *peer encouragement of bullying*, and *peer protector*. In the present study,

scores from the spring of fifth grade are included as covariates, while scores from fall and spring sixth grade are used as outcomes. The Peer Protection and Peer Encouragement subscales ask students to respond on a 5-point scale (ranging from *never* to *always*) to the prompt "If I'm being bullied . . . " The Peer Protection subscale contains eight items that assess the extent to which students feel that peers would intervene if they were being bullied (e.g., "My peers would tell others to stop the bullying," α = .85). The Peer Encouragement subscale contains five items that assess the extent to which students feel that their peers would encourage the bully (e.g., "My peers would laugh," α = .85). The Peer Protector subscale contains five items that assess a student's inclination to protect others from bullying. In response to the prompt "If I know that someone in my school is being bullied . . .," students are asked the frequency with which they would protect the victimized student (e.g., "I would stick up for them," α = .91). Students rate their responses on a 5-point scale that ranges from *never* to *always*.

Covariates. All analyses included the following covariates: *intervention status* of the school (control = 0; treatment = 1), *school type* (Grades K-8 = 0; middle school = 1), and school-level demographics (*school diversity index*, *percentage of students receiving free/reduced lunch*, *percentage of minority students*, and *school size*). Student indicators included gender (female = 0, male = 1), ethnicity (dummy-coded with White students as reference group), *baseline score on the outcome variable*, and *proportion of same-race peers in a student's peer group*. At the peer group level, we controlled for peer group size. In addition, to account for a potential nonlinear association between peer group diversity and outcomes (e.g., Moody, 2001), a quadratic peer diversity term (i.e., diversity index squared) was also included as a peer group–level covariate.

Analyses

First, we examined correlations between the peer diversity index at T2 and all dependent variables (T2 and T3) both for the full sample and for each ethnic group. We also compared peer group characteristics (i.e., diversity index, size) across the four ethnic groups using one-way ANOVAs, followed by Fisher's least significant difference tests to identify specific group differences. The remaining analyses were conducted using multilevel modeling in MPlus version 7 (Muthén & Muthén, 1998-2012). Unconditional models were run to determine the proportion of variance attributable to differences between peer groups and schools for each outcome. This variance is represented by the intraclass correlation coefficient (ICC); an ICC of .25 would indicate that 25% of

the variance in an outcome is attributable to differences between the clustering variable (e.g., peer groups). Given the small number of schools in the sample ($n = 8$), we did not estimate three-level models as it can potentially result in biased estimates of standard errors (Maas & Hox, 2005; also see Brown et al., 2008); however, as discussed below, the ICC suggested that the proportion of variance between schools was quite small and generally not significant. Thus, for conditional models, two-level models were estimated (students nested in peer groups); student and school characteristics were included at the individual level, while peer group characteristics were entered at Level 2.

The Level 2 peer group diversity index from T2 was used to predict individual outcomes, conditioned on the Level 1 and 2 covariates. Finally, to determine if the relations between peer group diversity and outcomes varied by ethnic group, cross-level interactions were calculated between peer group diversity and student ethnicity. The interaction term revealed whether or not there was a significant difference between White students and African American, Latino, or Native American students in the diversity-outcome slope. In order to determine if peer group diversity related to outcomes within ethnic groups, simple slopes were also estimated for all models, even when the interaction term was nonsignificant (Robinson, Tomek, & Schumacker, 2013). The first set of models estimated concurrent relations between peer group diversity and outcomes at T2 (i.e., fall of sixth grade); the second set estimated associations between fall peer group diversity and outcomes at T3 (i.e., spring of sixth grade). Given the high stability of teacher ratings during the school year (i.e., correlations between T2 and T3 scores ranged from .73 to .82), baseline scores were used as covariates in models estimating T3 teacher-reported outcomes (Glymour, Weuve, Berkman, Kawachi, & Robins, 2005). Student-reported outcomes (i.e., peer protective ecology measures) were moderately correlated between T2 and T3 ($r = .52$-$.58$); however, model results for these variables were nearly identical regardless of whether T1 or T2 scores were included as covariates.

Results

The average diversity index for the 97 peer groups at T2 was 0.22 ($SD = 0.20$), with scores ranging from 0 to 0.63. The ANOVA showed significant ethnic group differences in peer group diversity, $F(3, 466) = 2.71$, $p = .04$; main effects are reported in Table 2. Post hoc analyses showed that this difference was attributable to Native American students having a slightly smaller peer group diversity index compared with White students ($M_{diff} = 0.08$, $p < .01$). There were also significant ethnic group differences in peer group size, $F(3, 469) = 14.8$, $p < .001$. Post hoc tests revealed that Black and Latino students' peer groups were significantly larger than those of their White and Native

Table 2. Descriptive Statistics and ANOVA Results for Peer Network Characteristics Across Ethnic Groups.

	T2 diversity index M (SD)	T2 group size M (SD)
African American	0.21 (0.20)[a,b]	6.80 (2.47)[a]
Latino	0.23 (0.21)[a,b]	7.09 (3.43)[a]
Native American	0.18 (0.19)[a]	5.51 (1.83)[b]
White	0.25 (0.21)[b]	5.22 (2.54)[b]
All Students	0.22 (0.20)	6.17 (2.74)
F ratio (df = 3)	2.71*	14.77***

Note. T2 = Time 2, fall of sixth grade.
[a,b]Mean scores sharing a superscript are not significantly different at the $p < .05$ level.
*$p < .05$. **$p < .01$. ***$p < .001$.

American peers. Across the eight schools, there were no significant correlations between peer group diversity and outcome variables (Table 3); however, some differences emerged when the sample was divided by ethnic group (not shown). In particular, for Native American youth, diversity was positively correlated with popularity ($r = .25$, $p = .04$) and interpersonal competence ($r = .31$, $p = .01$) in the fall, and with academic ($r = .29$, $p = .02$) and interpersonal competence in the spring ($r = .31$, $p = .01$); diversity was negatively correlated with aggression in the fall ($r = -.26$, $p = .03$), and with peer encouragement of bullying in the fall ($r = -.30$, $p = .02$) and spring ($r = -.43$, $p = .001$).

Table 4 provides the means and standard deviations for outcome variables in the fall and spring of sixth grade. ICCs, representing the percentage of variance in each outcome across peer groups and schools, are also reported. In general, only a small percentage of variance in scores on the outcomes occurred between schools ($M_{T2} = 3.46\%$; $M_{T3} = 4.10\%$); furthermore, variance between schools was only significant for teacher ratings of aggression at T2 (ICC = .11, $p < .05$). In contrast, the average percentage of variance between peer groups in the outcome variables was 17.91% at T2 and 22.31% at T3. There were only two variables for which between-peer group variance was not significant: fall scores on peer protection from bullying and peer encouragement of bullying. Because this variance was not significant, models were not estimated for these two variables.

Multilevel Models, Fall of Sixth Grade

There were no main effects of T2 peer group diversity for any fall outcome; however, significant effects did emerge in the cross-level interactions between

Table 3. Bivariate Correlations for Peer Group Diversity and Outcome Variables.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Peer group diversity, T2	1													
2. Aggression, T2	-.03	1												
3. Academic competence, T2	-.00	-.32**	1											
4. Popularity, T2	.09	-.21**	.32**	1										
5. Interpersonal competence, T2	.05	-.65**	.69**	.74**	1									
6. Protect peers from bullying, T2	-.04	-.13*	.05	-.11*	.03	1								
7. Peer protection from bullying, T2	-.06	-.21**	.09	.14*	.17**	.41**	1							
8. Peer encouragement of bullying, T2	-.02	.25**	-.18**	-.20**	-.25**	-.13*	-.45**	1						
9. Aggression, T3	.03	.78**	-.25**	-.08	-.46**	-.08	-.12*	.15**	1					
10. Academic competence, T3	.01	-.31**	.82**	.33**	.60**	-.00	.11*	-.21**	-.32**	1				
11. Popularity, T3	.03	-.13*	.31**	.73**	.60**	-.09	.11*	-.16**	-.14*	.34**	1			
12. Interpersonal competence, T3	.02	-.51**	.57**	.58**	.79**	-.00	.15**	-.21**	-.61**	.69**	.74**	1		
13. Protect peers from bullying, T3	.02	-.19**	.06	-.05	.10	.55**	.32**	-.15*	-.16**	.07	-.04	.10	1	
14. Peer protection from bullying, T3	-.01	-.26**	.03	.08	.16**	.28**	.52**	-.27**	-.18**	.05	.09	.13*	.41**	1
15. Peer encouragement of bullying, T3	-.11	.26**	-.16**	-.10	-.21**	-.09	-.32**	.58**	.22**	-.21**	-.14*	-.22**	-.17**	-.45**

Note. T2 = Time 2, fall of sixth grade; T3 = Time 3, spring of sixth grade.
*p < .05. **p < .01.

Table 4. Descriptive Statistics and Intraclass Correlations for Outcome Variables at Time 2 and Time 3.

Variable	M (SD)	Between peer groups		Between schools	
		ICC	Variance component	ICC	Variance component
Time 2					
Aggression	2.90 (1.55)	.26	**	.11	*
Popularity	4.69 (1.25)	.33	***	.00	ns
Academic competence	4.55 (1.49)	.15	***	.00	ns
Interpersonal competence	4.80 (0.91)	.23	***	.04	ns
Peer protection from bullying	3.66 (1.01)	.11	ns	.00	ns
Peer encouragement of bullying	1.75 (1.04)	.07	ns	.02	ns
Protect peers from bullying	3.69 (1.02)	.11	*	.07	ns
Time 3					
Aggression	2.97 (1.59)	.29	***	.06	ns
Popularity	4.75 (1.35)	.27	***	.02	ns
Academic competence	4.55 (1.54)	.20	***	.00	ns
Interpersonal competence	4.82 (0.93)	.21	***	.03	ns
Peer protection from bullying	3.56 (1.09)	.26	***	.08	ns
Peer encouragement of bullying	1.79 (1.05)	.21	**	.05	ns
Protect peers from bullying	3.59 (1.07)	.14	***	.05	ns

Note. ICC = intraclass correlation coefficient.
*p < .05. **p < .01. ***p < .001.

peer group diversity and ethnic group membership (Table 5). Specifically, there was a significant difference in the association between peer group diversity and interpersonal competence for Native American youth relative to their White peers (b = 1.12, p < .05). An estimation of simple slopes revealed a positive association between diversity and competence for Native American students (b = 1.86, p = .03), but the slope for White youth was not significant (b = 0.74, p = .35). The peer diversity slope for protecting peers from bullying

Table 5. Hierarchical Regression Results for Time 2 Interpersonal Competence and Bullying.

	Interpersonal competence, T2		Protect peers from bullying, T2	
	Estimate	SE	Estimate	SE
Intercept	2.44***	0.60	3.19**	0.92
Level 1				
Intervention status	−0.05	0.12	−0.01	0.16
School configuration	0.05	0.15	−0.12	0.14
School diversity	1.25**	0.44	−0.11	0.78
Free-reduced lunch	−0.003	0.004	0.01	0.01
AYP	0.05	0.21	−0.57	0.44
School N	−0.002	0.001	−0.003	0.002
Gender	−0.13	0.10	0.02	0.10
Proportion of same-race peers	−0.37†	0.20	−0.42†	0.22
Baseline score on outcome	0.57***	0.05	0.53***	0.05
Level 2				
Group size	0.02	0.03	−0.06*	0.03
Diversity index	0.74	0.79	1.83*	0.84
Diversity index squared	−2.90†	1.70	−2.30†	1.36
Cross-level interactions				
Diversity Index × African American	0.53	0.59	−0.71	0.67
Diversity Index × Latino	0.71	0.51	−2.45*	0.95
Diversity Index × Native American	1.12*	0.55	−0.84	0.69
Level 1 residual variance	0.35***	0.04	0.54***	0.07
Level 2 residual variance	0.05	0.07	0.001	0.05
Level 2 ICC	.08		.06	

Note. T2 = Time 2, fall of sixth grade. AYP = adequate yearly progress; ICC = intraclass correlation coefficient.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

differed significantly between Latino and White youth (b = −2.45, p = .01). For White students, peer group diversity was positively related to protecting peers (b = 1.83, p = .03), but the simple slope for Latino students was not significant (b = −0.62, p = .64).

Multilevel Models, Spring of Sixth Grade

Peer group diversity at T2 was positively associated with T3 teacher ratings of interpersonal competence (b = 1.99, p = .03) and academic competence

(b = 3.60, *p* = .02) for the full sample. Additional associations emerged when ethnic group was examined as a moderator (Table 6). For interpersonal competence (Figure 1), there were significant, positive associations with peer group diversity for Native American students (b = 2.86, *p* = .02) and Black students (b = 2.28, *p* = .04); the slope for Latino students trended toward significance (b = 3.09, *p* = .09) while the slope for White youth was not significant (b = 1.40, *p* = .20). Similarly, peer diversity was positively related to teacher-rated academic competence (Figure 2) for Native American (b = 4.38, *p* = .01) and Latino youth (b = 5.33, *p* = .01). For this outcome, there were also trend-level positive associations with diversity for Black (b = 3.50, *p* = .06) and White students (b = 2.98, *p* = .07). Finally, there was a trend-level difference in the association between peer group diversity and protecting peers from bullying for Black youth relative to their White peers (b = 1.38, *p* < .07); however, neither group's slope was significant.

Discussion

Racial/ethnic diversity in schools continues to be a critical issue in the midst of two important trends: young people in the United States are increasingly from ethnic minority backgrounds, but many school districts are becoming increasingly segregated (Orfield & Frankenberg, 2014). These changes require a better understanding of how diversity operates in the context of youth social experiences in school. The present study's focus on peer group diversity reveals that it is beneficial in some domains; however, it may play a different role for youth of color relative to their White peers. Specifically, being in a more diverse peer group was related to higher teacher ratings of student academic and interpersonal competence for ethnic minority youth, with the most consistent associations emerging for Native American students. White youth in more diverse groups were more likely to protect peers from bullying in the fall; however, this association was not retained over the school year.

Being part of an ethnically diverse peer group appears to be beneficial for students as it relates to teacher perceptions of competence. Youth from ethnic minority backgrounds, especially Native American students, were rated favorably on scales of academic and overall interpersonal competence when they were in groups that included students from other ethnic backgrounds. Given that the two largest groups in the eight schools in this sample were students from one ethnic minority group (Black, Latino, or Native American) and White students, a "diverse" peer group was typically made up of a mix of White youth and youth of color. This raises some important questions about the mechanism through which the diversity effects operate. On the one hand, network diversity may benefit students because it reflects, either through

Table 6. Hierarchical Regression Results for Time 3 Social and Academic Competence.

	Interpersonal competence, T3		Academic competence, T3	
	Estimate	SE	Estimate	SE
Intercept	3.21***	0.50	2.91**	1.10
Level 1				
Intervention status	−0.15	0.17	−0.38	0.25
School configuration	0.26	0.20	0.23	0.27
School diversity	0.94	0.65	−0.49	1.13
Free-reduced lunch	−0.007	0.006	0	0.009
AYP	−0.20	0.28	0.22	0.54
School N	−0.002	0.002	0.001	0.003
Gender	−0.18†	0.11	−0.52**	0.19
Proportion of same-race peers	−0.25	0.30	−0.13	0.40
Baseline score on outcome	0.57***	0.05	0.56***	0.04
Level 2				
Group size	−0.001	0.03	−0.09†	0.05
Diversity index	1.40	1.08	2.98†	1.67
Diversity index squared	−4.85**	1.75	−5.40†	2.95
Cross-level interactions				
Diversity Index × African American	0.89	0.65	0.52	1.11
Diversity Index × Latino	1.70	1.39	2.35†	1.28
Diversity Index × Native American	1.46	0.98	1.39	1.29
Level 1 residual variance	0.42***	0.03	1.18***	0.14
Level 2 residual variance	0.002	0.07	0.07	0.12
Level 2 ICC	.03		.06	

Note. T3 = Time 3, spring of sixth grade; AYP = adequate yearly progress; ICC = intraclass correlation coefficient.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

selection or socialization effects, a collection of students with more cognitive and social flexibility, who are in turn rated favorably on these dimensions by teachers. However, if this were the only mechanism at play, then we should expect these benefits to appear for White students along with their peers. Instead, the effects emerged largely for youth of color, which suggests that being in a group with White peers could be beneficial to the extent that it facilitates access to particular kinds of social and cultural capital that are valued in a school context (Carter, 2005; Yosso, 2005).
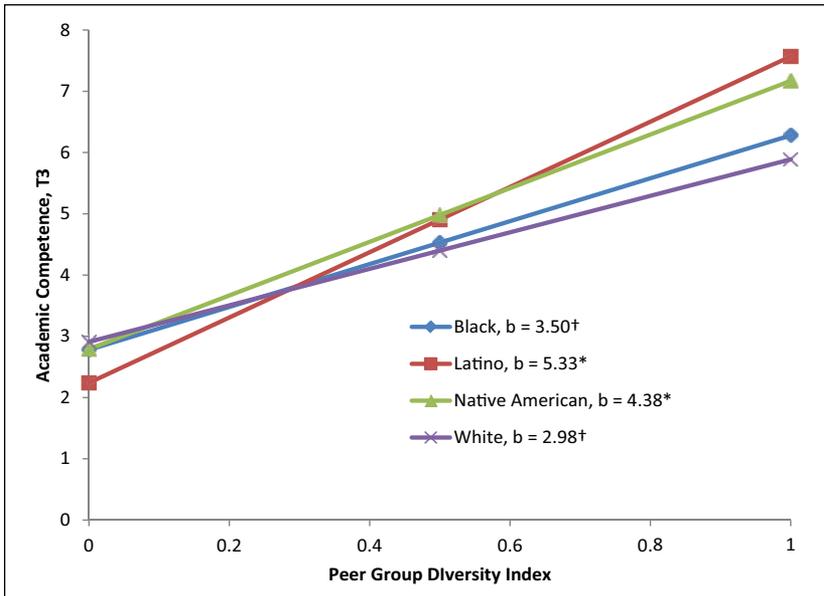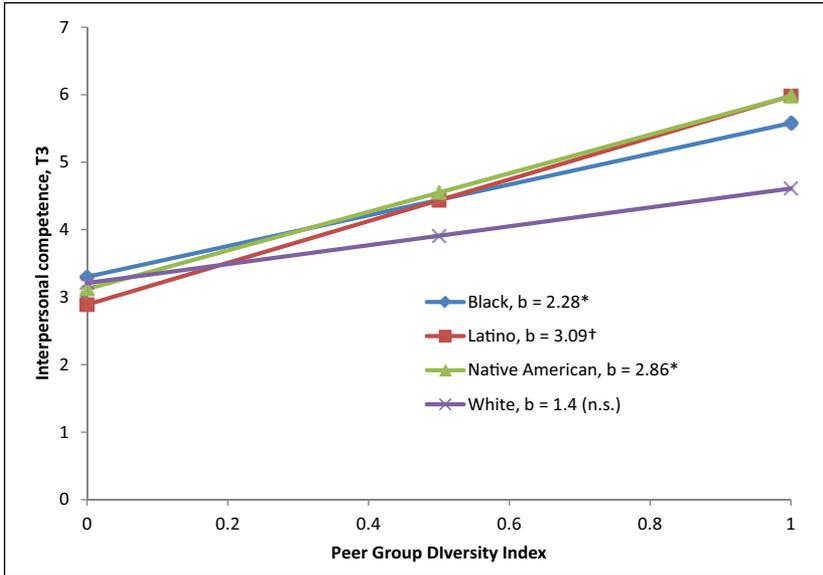
Figure 1. Peer diversity and Time 3 academic competence by ethnic group.
Note. T3 = Time 3, spring of sixth grade.
†*p* < .10. *p* < .05.

Youth of color whose networks consist of same-ethnic peers may be viewed differently by their teachers relative to students who interact across racial/ethnic boundaries (Tatum, 1997). We included the proportion of same-race peers as a covariate in all analyses, and there were no significant main effects. Given the possibility that having same-race peers might be uniquely negative for students of color as it relates to teacher perceptions, we ran a series of post hoc analyses examining interactions between same-race peer proportion and student's racial/ethnic background. There were two trend-level findings, which only emerged for Latino students. Specifically, relative to their White peers, Latino students with more same-ethnicity peers had higher teacher-reported aggression (b = 1.85, *p* = .08; simple slope = 1.63, *p* = .08) and lower teacher-reported academic competence (b = −1.36, *p* = .10; simple slope = −1.37, *p* = .06) in the spring of sixth grade. While the direction of these trends suggests a potentially costly "penalty" of peer group ethnic homophily, they were not consistent across the sample and should be interpreted with caution. Ultimately, the extent to which peer network ethnic diversity also reflects access to dominant and nondominant social and academic capital remains an important question for future investigation.

Figure 2. Peer diversity and Time 3 interpersonal competence by ethnic group.
Note. T3 = Time 3, spring of sixth grade.
†*p* < .10. **p* < .05.

Another domain where additional research is needed is on the peer networks of Native American students. To date, there are few studies examining the social experiences of Native American youth in schools, and a lack of representation of Native American adolescents in developmental research more broadly (Spicer et al., 2012). In the present study, Native American students in more diverse peer groups were rated more favorably by teachers in overall interpersonal competence in both the fall and spring of sixth grade, and in academic competence in the spring. Thus, there appear to be benefits of cross-group interactions in schools for Native American youth. However, existing research also suggests that Native American youth who are more connected to their culture are more resilient than peers with lower levels of enculturation (LaFromboise, Hoyt, Oliver, & Whitbeck, 2006), and integrating and promoting cultural perspectives of Native Americans into school curricula is beneficial for Native American students' school success (Demmert, Grissmer, & Towner, 2006; Demmert & Towner, 2003; Ewing & Ferrick, 2012). Our study findings raise questions about whether or not teacher ratings of Native American students' academic and social abilities are linked to

perceptions of student levels of enculturation and assimilation and student expression of dominant verses nondominant cultural values (Carter, 2005).

In addition to emergent questions about the mechanism through which diversity benefits Native American students and other students of color, we may also need to better understand when and how ethnic diversity promotes positive development for White youth. As a point of comparison, studies of cross-ethnic friendships present mixed findings about the benefits as a function of a student's own ethnic background. For instance, Hamm and colleagues (2005) found that having cross-ethnic friendships was negatively associated with academic orientation (e.g., grade point average, educational aspirations) among White youth, whereas the association for Black and Latino youth was positive. Conversely, Kawabata and Crick (2015) found that having fewer cross-ethnic friendships created vulnerability for peer rejection among White youth while having more cross-ethnic friendships buffered risk for internalizing in the context of peer victimization. In the present study, White students with more diverse peer groups reported more frequent protection of their peers from bullying compared with those in less diverse groups. This may indicate that in some instances, being part of a diverse group promotes an allegiance that increases a student's willingness to stand up for their peers. However, the association did not last throughout the school year, nor was it significant for ethnic minority youth. This was also the only case in which a student self-reported indicator of peer bullying norms was significantly related to network diversity.

Thus, our findings do not strongly suggest that more diverse peer groups differ from homogeneous groups when it comes to endorsing or rejecting bullying behavior. Importantly, the peer protective ecology measures we used in this study only assess youth's perceptions of their own and their peers' likelihood of bullying or protective behavior. It is possible that peer group diversity does promote tolerance in a manner that extends to direct experiences with bullying or victimization, which should be considered in future research. In addition, the number of peer groups within each school was not large enough to permit analyses of peer network structural features by school; however, this is an important consideration for future research as it may provide insight into broader aspects of school climate that are manifested in the peer social ecology. Specifically, in a school setting, social prominence may be afforded to students from some racial/ethnic backgrounds but not others (Way, Santos, Niwa, & Kim-Gervey, 2008), which may affect social behaviors youth engage in to gain or maintain social power and status in ways that intersect with peer group racial/ethnic composition (Wilson, Karimpour, & Rodkin, 2011).

The present study has several strengths, including the use of nested data collected across multiple time points from a sample of students in rural schools. In particular, the study provides insights into the experiences of Native American youth who are grossly underrepresented in studies on peer relationships and studies on diversity. Likewise, having Black and Latino rural youth in the sample is important given that they are more traditionally represented in studies of youth from urban schools. We had comprehensive peer group data on students from all of these groups and attended to a dimension of peer group structure, racial/ethnic diversity, which may have particular relevance for students of color. Finally, we were able to capitalize on the longitudinal study design; in all models, students' baseline scores on the outcome variable were taken into account, lending confidence that peer diversity effects were not simply a reflection of students' pre-existing characteristics.

However, there are also important limitations to be considered. First, having only eight schools in the sample limited the ability to estimate three-level models (i.e., students nested in peer groups nested in schools). To address this, models took multiple school-level indicators into account by including them as Level 1 covariates; moreover, most variance in outcomes was at the level of the peer group rather than the school. Second, the schools in the sample had very specific kinds of diversity; for the most part, there were only two major racial/ethnic groups in each school. While this constrained the range of peer group diversity indices, it still provides a fairly accurate picture of what might be expected in rural schools which are generally more homogeneous than urban and suburban schools given high levels of racial/ethnic segregation in rural locales (Aud et al., 2013; Provasnik et al., 2007). Likewise, the high rate of occurrence of same-race peer networks is in keeping with other studies of peer group diversity (e.g., Graham et al., 2014; Hamm et al., 2005); however, the nature of the sample does not permit us to generalize the findings to youth attending urban or suburban schools. Similarly, there may be important regional variation (e.g., sociohistorical dynamics of race relations in the southeast verses the southwest) and ethnic group variation (e.g., ethnic and/or tribal diversity within the pan-racial/ethnic categories) that we were not able to take into account.

While our longitudinal models estimated the associations of fall peer group composition with fall and spring outcomes, peer groups may change over time so future work is needed to assess how peer group compositional changes may relate to changes in social and academic competencies (Faircloth & Hamm, 2011). We also used pan-racial/ethnic categories to construct our diversity indices, which may mask diversity in cases where students in the

same peer group fall into one broad category (e.g., Latino) but multiple sub-categories (e.g., Mexican- and Dominican-origin). Finally, the number of peer groups in the sample did not permit an investigation of structural associations between peer diversity other peer network features (i.e., hierarchy/egalitarianism) as a function of student ethnic background.

Overall, our findings suggest a need to delve further into the proximal processes that connect school diversity to students' psychosocial and academic outcomes. There appear to be benefits associated with being part of an ethnically diverse peer group; however, the mechanisms underlying these associations are unclear. We found few main effects of diversity, and while the effects that did emerge were positive, the lack of consistency suggests that a "diversity hypothesis" predicting cognitive and social benefits for all youth is an oversimplification of this construct. However, positive correlates of diversity emerged more consistently when teacher-reported competencies were examined by racial/ethnic group. This lends some credibility to social capital explanations of the benefits of diversity; however, the lack of negative associations for youth of color with more same-race/ethnicity peers raises additional questions about how and why diversity (vs. homophily) is beneficial for some youth but not others. Studies incorporating assessments of students' perceptions of diversity and inclusion, cultural flexibility, and racial/ethnic identity can provide insight into how individual characteristics factor into peer group compositions. Likewise, further investigations of how peer group diversity relates to enhanced or constrained access to classroom and school resources via social network equity (i.e., Carter, 2005; Neal, 2014) are needed to determine how social capital may perpetuate inequalities in early adolescence. There is an ongoing need for researchers, practitioners, and policy makers to understand the social aspects of youth's school experiences, as these "informal processes" can dramatically impact youth's academic trajectories through secondary school and beyond (Crosnoe, 2011); thus, understanding how the ethnic context of schools is experienced at the peer group level may provide critical insight into processes related to students' feelings of belongingness as well as academic and behavioral outcomes. Finally, there is compelling evidence suggesting that attending racially integrated schools is beneficial; however, formal policies around school desegregation may be underinformed if we fail to understand how school-level ethnic diversity is mediated by peer group processes in adolescence.

Declaration of Conflicting Interests

Funding

Note

1. We recognize that "race" and "ethnicity" are not the same and that definitions can vary as a function of the levels at which the concept is being defined (e.g., federal government vs. an individual's lived experiences). Because our study includes members of groups historically considered "racial" (e.g., African American, White) and groups historically considered "ethnic" (e.g., ethnic groups within the broader Latino diaspora), we use both terms together. We use the term *historically stigmatized* to refer to groups in our sample who have experienced ongoing oppression and marginalization in the United States (i.e., African Americans, Native Americans, and Latino Americans).

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