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Social Identity Complexity, Cross-ethnic Friendships, and Intergroup Attitudes in Urban Middle Schools

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Abstract

The current study investigated contextual antecedents (i.e., cross-ethnic peers and friends) and correlates (i.e., intergroup attitudes) of social identity complexity in seventh grade. Social identity complexity refers to the perceived overlap among social groups with which youth identify. Identifying mostly with out-of-school sports, religious affiliations, and peer crowds, the ethnically diverse sample ($N = 622$; M_{age} in seventh grade = 12.56) showed moderately high complexity. Social identity complexity mediated the link between cross-ethnic friendships and ethnic intergroup attitudes, but only when adolescents had a high proportion of cross-ethnic peers at school. Results are discussed in terms of how school diversity can promote complex social identities and positive intergroup attitudes.

Keywords

group membership; social identity complexity; intergroup attitudes; diversity

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Social self-definition becomes increasingly important during adolescence, as youth begin to understand the significance of group memberships to themselves and others (Harter, 2012; Sani & Bennett, 2004) and strive to understand with which groups they align themselves (Brown, 1990; Crosnoe, 2011; Newman & Newman, 1976). Most adolescents identify not only with groups that are ascribed or assigned (e.g., gender and ethnicity), but also with groups that are chosen (e.g., extracurricular activities and clubs; Aboud, 1988; Bernal, Knight, Garza, Ocampo, & Cota, 1990; French, Seidman, Allen, & Aber, 2006; Maccoby, 1998; Phinney, 1990; Tanti, Stukas, Halloran, & Foddy, 2011). Additionally, close friendships, cliques, and crowds become especially relevant during this period (e.g., Brown & Klute, 2003; Steinberg & Morris, 2001) and are likely to be internalized as part of one's identity. As youth identify with multiple social groups, their social self-definition can become increasingly complex. Relatively little is known, however, about how multiple social identities intersect (e.g., Kiang, Yip, & Fuligni, 2008; Rowley, Sellers, Chavous, & Smith, 1998). The goal of the current study is to examine the ways in which the multiple groups with which youth identify (e.g., ethnic, interest-based or activity groups) overlap, and how such structural overlap is related to cross-ethnic friendships and intergroup attitudes in an ethnically diverse sample of middle school students.

Studying the complexity of social identities in early adolescence is expected to be relevant for several reasons. By early adolescence, youth have mastered the prerequisite cognitive skills for simultaneous, multiple classification (Aboud, 1988; Bigler & Liben, 1992). Moreover, young adolescents begin to differentiate themselves into different roles (e.g., self with friends, parents, or classmates; Harter, 1999; 2012). Research examining the intersections of multiple self-aspects (e.g., self based on roles, as well as abilities and behavior) among adolescents suggests that youth vary in the degree to which their self-aspects are perceived to overlap, and that examination of such overlap provides insights about personal self-complexity (Evans, 1994; Linville, 1985). Although less research has focused on the complexity of social identities defined by group memberships (e.g., self as a school band member, as part of the popular group, or as an African-American), we presume that young adolescents also vary in how they view the overlap of their multiple social groups.

Social Identity Complexity

In the current study, we examine *social identity complexity* that refers to the perceived overlap of the groups with which a person aligns him- or herself (Roccas & Brewer, 2002). This construct is assessed by considering the overlap in the compositions of one's multiple ingroups (Brewer & Pierce, 2005; Miller, Brewer, & Arbuckle, 2009; Roccas & Brewer, 2002). For example, the question for an African-American teen who identifies herself as a member of the school band and as part of the popular crowd is to what degree the members of these groups overlap. When she perceives the members of her salient social ingroups to overlap (e.g., most band members are also popular and African-American), her social identity complexity is low because the same peers belong to each ingroup. That is, her social self consists of groups that converge into one relatively cohesive, or structurally less complex, social identity. In contrast, when she perceives only a few band members to be popular or African-American, her social identity complexity is high because ingroup members in one category can belong to outgroups across the other categories. In other words, when this popular, African-American band member strongly identifies with her school band, she is presumed to regard her non-African-American and not-so-popular band members as part of "her group," much like she regards her African-American peers. Thus, these distinct ingroups capture the structural complexity of her social identities.

Social identity complexity compliments other developmental social identity approaches that focus on single identities. For example, ethnic identity (i.e., group esteem) becomes increasingly important during middle school, especially among ethnic minority youth (French et al., 2006). Because one's ethnic identity emerges along with other social identities, however, the social identity complexity construct provides a way to understand how these different groups intersect. That is, youth with a strong ethnic identity can vary in how they see themselves as members of other social groups. If they identify with other social groups that consist of only a few same-ethnic peers, these other social identities should theoretically have no implications on their ethnic identity as to being weaker or less important. Rather, identifying with both one's ethnic group and other groups with small same-ethnic representations should further facilitate positive intergroup attitudes, inasmuch as youth can simultaneously consider multiple groups representing various aspects of their social identity.

Social Identity Complexity and Intergroup Attitudes

Considering that ingroup preference emerges as early as childhood (e.g., Bigler, Jones, & Lobliner, 1997; Dunham, Baron, & Carey, 2011), the ways in which social identity complexity can promote positive intergroup attitudes in relatively ethnically diverse middle schools are of particular concern. When social ingroups are largely overlapping (i.e., low

social identity complexity), boundaries between “us” versus “them” are reinforced. That is, if most other band members are also African-American and popular, one’s sense of their social identity is strong, but possibly exclusive. In contrast, when ingroups are largely non-overlapping, group boundaries are diffused. When outgroup members can belong to an ingroup (e.g., some or many band members are non-African-American), prejudice towards ethnic outgroups should be reduced (Roccas & Brewer, 2002).

In line with these predictions, Brewer and Pierce (2005) found that greater social identity complexity was related to more similar feelings of warmth towards ingroup and outgroup members (i.e., lower ingroup preference). We are aware of only one small-scale study in a middle school sample, which demonstrated that predominantly European-American middle school students with more complex social identities reported less apprehension about, and greater benefits of, interacting with peers from other ethnic groups (Knifsend & Juvonen, 2012). Whether social identity complexity is associated with positive intergroup attitudes among ethnic minority youth is unknown. Moreover, relatively little is known about what gives rise to complex social identities. That is, what environmental factors, or what we refer to as contextual antecedents, might help us to understand the development of complex social identities?

Contextual Antecedents of Social Identity Complexity

According to Roccas and Brewer (2002), objective social experiences are likely to influence social identity complexity. Testing this hypothesis cross-sectionally in a predominantly European-American adult sample, Miller et al. (2009) found that individuals living in ethnically diverse areas demonstrated higher levels of social identity complexity, relative to those who lived in more homogenous areas. Thus, environments with multiple, partially overlapping groups (e.g., neighbors can be ethnic ingroup or outgroup members) likely reinforce the idea that groups can overlap in various ways (Roccas & Brewer, 2002). We presume that ethnically diverse schools function similarly to neighborhoods, especially if there are substantial opportunities for different ethnic groups to affiliate with one another.

While diverse environments may strengthen social identity complexity, Roccas and Brewer (2002) note that the quality of outgroup contact may be especially influential to social identity complexity. In a study of Irish college students, high quality contact with religious outgroup members (i.e., conversing with people of a different faith in neighborhood or in social settings, and having friends of a different religious background) was associated with greater social identity complexity (Schmid, Hewstone, Tausch, Cairns, & Hughes, 2009). In ethnically diverse middle schools where there are opportunities for cross-ethnic affiliation, this may mean that adolescents who have close cross-ethnic friendships are particularly likely to realize that the boundaries between ingroup and outgroup members are fluid.

Social Identity Complexity as a Mediator

Given the respective associations between cross-ethnic interaction, social identity complexity, and intergroup attitudes, it is pertinent to examine whether social identity complexity mediates the association between cross-ethnic interaction and ethnic intergroup attitudes. According to intergroup contact theory, cross-group contact under certain conditions (e.g., equal status between groups) can minimize prejudice (Allport, 1954; Pettigrew, 1998; Pettigrew & Tropp, 2006). Studies of children and adolescents suggest that greater cross-group contact is associated with higher perceived wrongfulness of race-based exclusion (Crystal, Killen, & Ruck, 2008; Ruck, Park, Killen, & Crystal, 2011), less ingroup bias (Aboud, Mendelson, & Purdy, 2003), and more positive outgroup attitudes (Tropp & Prenovost, 2008). In particular, cross-ethnic friendships may be especially influential to intergroup attitudes because they fulfill many of the conditions of contact theory (Davies,

Tropp, Aron, Pettigrew, & Wright, 2011; Pettigrew, 1998). For instance, in a study of German and Turkish children, cross-ethnic friendships were associated with more positive outgroup attitudes (i.e., outgroups rated as friendly, smart, and polite; Feddes, Noack, & Rutland, 2009). Thus, taking advantage of opportunities for cross-ethnic friendships in diverse settings may be especially important to intergroup attitudes.

While affective and cognitive mechanisms underlying the association between outgroup affiliation and intergroup attitudes (e.g., anxiety about intergroup interactions; Brown & Hewstone, 2005) have been investigated, to our knowledge only one study has examined social identity complexity as a mediator of this link. In their study of Irish adults, Schmid et al. (2009) found that social identity complexity mediated the association between positive interaction with outgroup members (e.g., conversing with religious outgroup members and having outgroup friendships) and perceived affective distance (i.e., warmth) between religious ingroup and outgroup members. Whether social identity complexity might help account for the association between cross-ethnic friendships and ethnic outgroup attitudes among young adolescents attending diverse schools is one of the main questions guiding the current study.

Current Study

Extending past research on social identity development by examining the intersections of multiple social groups, the current study investigates how cross-ethnic affiliation is associated with social identity complexity, and how identity complexity in turn is linked with ethnic intergroup attitudes, in seventh grade. Self-definition through groups should be especially relevant in the middle school context. Middle schools are less structured and on average seven times larger than neighborhood elementary schools, making the school social context increasingly challenging for young adolescents to navigate (Eccles & Midgley, 1989; Juvonen, Le, Kaganoff, Augustine, & Constant, 2004). We presume that identification through various school-based groups can help adolescents navigate within this expanding social scene, because of their heightened need to fit in and to belong with peer groups (Brown, 1990; Crosnoe, 2011).

Two main goals guide the present study. Our first goal is to preface our main analyses by describing the groups with which adolescents identify during middle school, and by analyzing ethnic differences in cross-ethnic friendships, social identity complexity, and ethnic intergroup attitudes (i.e., measured as social distance between ethnic ingroups and outgroups; Brewer & Pierce, 2005). Second, our main goal is to investigate the associations between cross-ethnic friendships, social identity complexity, and ethnic intergroup attitudes. We hypothesized that social identity complexity (i.e., overlap in compositions of four social groups, including ethnic group) would mediate the link between cross-ethnic friendships and ethnic intergroup attitudes when adolescents have many cross-ethnic peers at school. Given that our study is the first to investigate social identity complexity in ethnically diverse schools, which vary in opportunities for cross-ethnic interaction in ways that can affect cross-ethnic friendships (Hallinan & Teixeira, 1987), we expected that the link between cross-ethnic friendships and social identity complexity may be stronger when there is ample choice of peers with whom to form such friendships. Hence, we tested a moderated mediation model in which the association between cross-ethnic friendships and social identity complexity (i.e., *a* path in Figure 1) is presumed to vary depending on the availability of cross-ethnic peers.

Method

Data for the current study were collected as part of a larger, longitudinal study of middle schools located in California. Analyses for the current study relied on data collected in the

spring of seventh grade (during the 2010–2011 school year) from four schools. Each of the schools were selected because they were ethnically diverse, providing opportunities for cross-ethnic interaction. Relying on Simpson's Index of Diversity (i.e., ranging from 0–1; Simpson, 1949), the four schools ranged from .61 to .70, suggesting that schools were fairly comparable in terms of their high ethnic diversity. The percentage of students receiving free or reduced lunch ranged from 26% to 57% across the schools (Ed-Data, 2012).

Participants

Participants ranged in age at seventh grade data collection from 11 to 14 years old ($M = 12.56$, $SD = 0.54$). Based on self-reports, the final sample ($N = 622$) was 41% Latino or Mexican-American ($n = 257$), 34% European-American ($n = 212$), 14% African-American ($n = 90$), and 10% East or Southeast Asian-American ($n = 63$), with 53% female. Adolescents who identified as Other (e.g., Middle Eastern) or as belonging to two or more ethnic groups were excluded from the current analyses because our ethnic intergroup attitudes measure only considered the four major ethnic or racial groups (i.e., asked about attitudes towards Asian, Black, Latino, and White youth). Representations of each ethnic group in our sample varied across the four schools (Latino or Mexican-American: 25%–51%; European-American: 19%–48%; African-American: 14%–22%; Asian-American: 5%–11%).

Procedure

In fall of sixth grade, adolescents brought home parent consent forms and informational letters explaining the study. To increase the number of returned consent forms (either allowing or not allowing study participation), adolescents and parents returning the consent form were entered into a raffle of \$50 gift cards. Eighty percent of distributed consent forms were returned, and of those 17% did not grant permission to participate in the study. Only those who returned parent consent forms permitting participation and assented to participate were included in the study. Seventh grade data were collected across two class periods. Researchers read most items aloud. Participants received \$10 for completing the questionnaire.

Measures

Availability of cross-ethnic peers—Availability of cross-ethnic peers in one's grade at school was calculated using California Department of Education statistics on the number of seventh grade students from each ethnic group (see Table 1; California Department of Education, 2011). For each ethnic group within each of the four schools, we computed a score reflecting the proportion of seventh grade peers who belong to ethnic outgroups (i.e., number of seventh grade students of all other ethnic backgrounds divided by the total number of seventh grade students, minus oneself). Overall, adolescents in our sample had a mean availability score of .68 ($SD = .14$; range = .49–.95), suggesting an average of 68% of one's grade mates belonging to a different ethnic group than their own. This value is consistent with the relatively high diversity of the schools.

Proportion of cross-ethnic friendships—Participants provided an unlimited number of nominations of their "good friends" who were in the seventh grade and attended the same school. Cross-gender friendship nominations were permitted. We relied on friendship choices, rather than reciprocal nominations, because we presumed that one's perceptions of their friendships are most relevant to their self-definition. For each friend listed, participants responded to one item asking whether the friend belongs to the same or a different ethnic group. Consistent with prior studies on social identity complexity (Schmid et al., 2009), we employed a subjective measure of cross-ethnic friendships because perceptions of cross-

ethnic friendships were expected to be most relevant to perceived social identity complexity. To control for friendship network size, the proportion of cross-ethnic friendships was calculated by dividing the number of cross-ethnic friends by the total number of friends nominated. Reflecting the diversity of the settings, half ($M = .50$, $SD = .33$) of listed friends were rated as belonging to a different ethnic group, on average.

Social identity complexity—The adolescent social identity complexity measure, measuring the degree to which ingroups are perceived to overlap, was adapted from an adult version used by Brewer and Pierce (2005) and an adolescent version used by Knifsend and Juvonen (2012). Data collection was administered on two days in order to implement the social identity complexity measure. On the first day of data collection in seventh grade, participants were asked to list three social groups that described them as a person. Before identifying themselves with their groups, participants were provided with types of groups that could describe them (e.g., extracurricular activities, sports, religious groups, or social groups) and with four to five examples of each. Participants were then asked to imagine that they were filling out a new Facebook page describing themselves to people who do not know them, and to list three groups that best describe them as a person. We provided examples of groups, in addition to general categories of possible groups (e.g., religious groups or social groups; Brewer & Pierce, 2005), to ensure that young adolescents understood the types of groups to which they may belong.

After identification of social groups on the first day of data collection, research assistants individualized each participant's questionnaire with their four group memberships (i.e., the three social identity groups listed on the first day, in addition to self-reported ethnic group). Ethnicity was used as the fourth group membership because we expected the overlap between one's ethnic group with their other social groups to be particularly relevant to ethnic intergroup attitudes. To ensure that ethnicity was indeed as salient as the other three social groups listed, we also obtained importance ratings for each of the four groups (see below). During this second day of data collection, participants then rated the group membership overlap of each bidirectional pairing of their four groups. To orient them to the task, an example was provided where they estimated "How many soccer players are seventh graders?" and "How many seventh graders are in soccer?" on a five point scale (1 = *almost all*; 5 = *hardly any*). Relying on the same five point scale, participants then rated the 12 pairings of their own social groups (e.g., "How many people in [Group A] are in [Group B]? How many people in [Group B] are in [Group A]?"). Social identity complexity scores were calculated as the mean of the 12 ratings reflecting the overlap of the four groups listed. A high score indicates little perceived membership overlap among groups (i.e., high social identity complexity). On average, adolescents in our sample perceived between about half and a few members of one ingroup to belong to another ingroup ($M = 3.27$, $SD = 0.61$), suggesting a moderate degree of social identity complexity.

Reliability was calculated using a Spearman-Brown split-half coefficient. The 12 ratings were divided into two subsets, such that bidirectional pairings were in different subsets (i.e., "How many people in [Group A] are in [Group B]?" in one subset, "How many people in [Group B] are in [Group A]?" in the other subset). The Spearman-Brown reliability coefficient was .88, suggesting that the social identity complexity measure has good internal consistency.

Importance of social identities—Because social identity complexity is based on social ingroups that are personally meaningful (Roccas & Brewer, 2002), participants were asked to rate the importance of their four groups on the second day of data collection in seventh grade. Specifically, they rated the importance of their three social groups and their ethnic

group (e.g., “How important is it to you that you are a [Group A] member?”). Responses were on a five point scale (1 = *definitely not important*; 5 = *definitely important*).

Intergroup attitudes—Items assessing the degree to which seventh grade students wanted to associate with ethnic ingroup and outgroup members were used to calculate social distance (Bogardus, 1933; Brewer, 1968; Jones, 2004; Marsden, 1988). Participants were first provided with an example where they were asked to rate if they would like to eat lunch, get together at their house, dance together at a party, or sit together on a school bus with kids who were in the eighth grade (i.e., outgroup based on grade), on a five point scale (1 = *no way!*; 5 = *for sure yes!*). After completing the example, participants responded to the same four items for Asian, Black, Latino, and White youth (e.g., “Now think about doing these things with kids who are [Ethnic Group]. Would you want to eat lunch with...”), for a total of 16 items. Blocks of the four items within each ethnic group were presented in four different orders that were randomly assigned to the participants. We chose to focus on these developmentally relevant behavioral items assessing social distance (included as part of a larger battery of intergroup attitudes measures), to expand on prior research on social identity complexity that has relied mainly on affective measures of ingroup bias (e.g., Schmid et al., 2009).

Consistent with adult studies of social identity complexity (e.g., Brewer & Pierce, 2005), we relied on an aggregated measure of social distance from all three ethnic outgroups, rather than examining distance from specific ethnic groups. Social distance was calculated by subtracting the average of 12 items for three ethnic outgroups from the average of four items for members of one’s own ethnic group. Thus, higher social distance scores indicate greater ingroup preference, whereas lower social distance scores indicate that ethnic outgroups are rated more similarly to one’s ingroup. On average, adolescents in our sample preferred their ethnic ingroup over outgroups ($M = 0.41$, $SD = 0.66$). Cronbach’s alphas calculated among four ingroup items ($\alpha = .86$) and twelve outgroup items ($\alpha = .94$) indicated very high internal reliability.

Results

The results section consists of three parts. To preface our main analyses, we first describe the social groups listed by young adolescents in our sample. The second part presents analyses of ethnic group differences in cross-ethnic friendships, social identity complexity, and ethnic intergroup attitudes (i.e., measured as perceived social distance from ethnic outgroups). In the third part, we describe results of regression analyses testing the links between cross-ethnic friendships, social identity complexity, and ethnic intergroup attitudes. Specifically, we test whether social identity complexity mediates the association between cross-ethnic friendships and ethnic intergroup attitudes when youth have a high availability of cross-ethnic peers at school.

Social Identities

To describe the types of groups with which youth identify, trained research assistants categorized social groups into nine categories with high inter-rater reliability, $\kappa = .97$. As reflected in Table 2, out-of-school sports (e.g., club soccer or swimming) were the most common groups listed, followed by groups based on religious affiliation (e.g., Christian or Jewish), peer crowds (e.g., popular people or nerds), out-of-school performing arts (e.g., ballet or theater), gaming (e.g., video gamer), school-based clubs (e.g., Cooking Club or National Junior Honor Society), special interests (e.g., robotics or environmental groups), out-of-school visual arts (e.g., animation or photography), and academic orientation (e.g., good students or overachievers), respectively. Descriptive statistics of the importance ratings

of each social ingroup suggested that on average, the groups listed were regarded as important ($M = 3.87$, $SD = 1.06$, range = 3.22–4.58 on a five point scale). The average importance of ethnicity (i.e., the only group identity not self-nominated) was similar to the overall importance ratings ($M = 3.91$, $SD = 1.17$), suggesting that it was as important as the three other social groups. Although we could not compare group importance ratings statistically because specific groups varied across individuals, groups based on academic orientation and school clubs received particularly high importance ratings ($M_s > 4.20$), in spite of their relative infrequency.

Ethnic Group Differences

To explore group differences in cross-ethnic friendships, social identity complexity, and perceived distance from ethnic outgroups, a series of Analysis of Variance (ANOVA) models were employed. Possibly reflecting relative group size, ethnic groups differed in proportions of cross-ethnic friendships, $F(3, 618) = 7.00$, $p < .001$, $\eta^2_p = .03$. Post hoc independent samples t -tests with a Bonferroni correction suggested that Latino or Mexican-American adolescents ($M = .45$, $SD = .34$) had a smaller proportion of cross-ethnic friends than Asian-American adolescents ($M = .63$, $SD = .33$), $t(318) = 3.95$, $SE = 0.05$, $p < .001$, and African-American adolescents ($M = .56$, $SD = .33$), $t(345) = 2.76$, $SE = 0.04$, $p < .01$. There were also significant differences in social identity complexity across ethnic groups, $F(3, 618) = 4.72$, $p < .01$, $\eta^2_p = .02$. Post hoc t -tests with a Bonferroni correction indicated that Latino or Mexican-American adolescents ($M = 3.20$, $SD = 0.64$) perceived lower social identity complexity than Asian-American adolescents ($M = 3.45$, $SD = 0.60$), $t(318) = 2.73$, $SE = 0.09$, $p < .01$. Lastly, ethnic groups differed in their social distance from ethnic outgroups, $F(3, 618) = 6.40$, $p < .001$, $\eta^2_p = .03$. Post hoc t -tests revealed that Latino or Mexican-American youth ($M = 0.53$, $SD = 0.72$) reported greater outgroup distance (i.e., greater ingroup preference) relative to African-American adolescents ($M = 0.25$, $SD = 0.58$), $t(345) = 3.31$, $SE = 0.08$, $p < .01$, and European-American adolescents ($M = 0.31$, $SD = 0.60$), $t(467) = 3.48$, $SE = 0.06$, $p < .01$.

In sum, Latino or Mexican-American youth had a smaller proportion of cross-ethnic friends, lower social identity complexity, and greater ethnic outgroup distance compared to other ethnic groups in our sample. In contrast, Asian-American adolescents had a high proportion of cross-ethnic friendships and relatively high social identity complexity. In the next section, the associations between cross-ethnic friendships, social identity complexity, and ethnic outgroup distance are tested in a moderated mediation model.

Moderated Mediation Model

Our main goal was to test the links between cross-ethnic friendships, social identity complexity, and ethnic intergroup attitudes by relying on a moderated mediation model investigating whether the indirect effect was especially strong when adolescents had a high availability of cross-ethnic peers in their grade at school. Correlations of the main model variables are presented in Table 3. Regression models were run using the PROC REG procedure and the PROCESS macro in SAS version 12.1 (Hayes, 2013). Analyses controlled for ethnicity and school attended using dummy coding to account for group differences in these variables. In addition to the ethnic differences discussed in the prior section, youth at School 1 perceived less outgroup distance than adolescents at Schools 2 and 4, $F(3, 618) = 6.96$, $p < .001$, $\eta^2_p = .03$. Given that most research on social identity complexity focuses on European-American samples, the school with the highest percentage of European-American students, School 4, was chosen as the comparison school. Similarly, European-American adolescents were chosen as the comparison group for ethnicity. Considering that availability of cross-ethnic peers and cross-ethnic friendships were entered separately and as an interaction term in our regression models, each variable was centered around its mean to

reduce multicollinearity. Centered variables were used to compute the product of the two variables to test the moderator hypothesis.

Because we expected that availability of cross-ethnic peers would moderate the *a* path in our mediational model (see Figure 1), our first objective was to examine availability of cross-ethnic peers as a moderator of the association between cross-ethnic friendships and social identity complexity, using a three step method (Baron & Kenny, 1986). First, proportion of cross-ethnic friendships was entered separately as a predictor of social identity complexity. Cross-ethnic friendships were a significant predictor of social identity complexity, $b = 0.21$, $SE = 0.07$, $p < .01$. Second, availability of cross-ethnic peers was entered into the model to test its effect over and above cross-ethnic friendships. Availability of cross-ethnic peers was not associated with social identity complexity, $b = 0.25$, $SE = 0.27$, $p = .35$. Third, the product of the two predictor variables was entered. Results of this regression model revealed a significant interaction over and above the effects of the two predictors, $b = 1.35$, $SE = 0.56$, $p < .05$. As reflected in Figure 2, a greater proportion of cross-ethnic friendships significantly predicted higher social identity complexity, but only when availability of cross-ethnic, same-grade peers at school was at its mean ($b = 0.19$, $SE = 0.08$, $p < .05$) or greater than one standard deviation above its mean ($b = 0.37$, $SE = 0.10$, $p < .001$). Consistent with our hypothesis, this finding may be explained by greater proportions of cross-ethnic friendships when there is a moderate to high availability of cross-ethnic peers in one's grade at school (95% CI of friendships when availability is one standard deviation below mean is [.35, .44], 95% CI of friendships when availability at mean is [.49, .55], 95% CI of friendships when availability is one standard deviation above the mean is [.54, .68]).

To test the moderated mediation model, our subsequent objectives were to examine the direct effect of cross-ethnic friendships on ethnic outgroup distance, as well as how both cross-ethnic friendships and social identity complexity relate to outgroup distance (Baron & Kenny, 1986). First, analyses of the direct effect of cross-ethnic friendships on ethnic outgroup distance suggested that a greater proportion of cross-ethnic friendships was associated with less outgroup distance (i.e., *c* path in Figure 1; $b = -0.51$, $SE = 0.08$, $p < .001$). Second, cross-ethnic friendships and social identity complexity were tested as predictors of outgroup distance in the same model. As shown in Table 4, greater proportions of cross-ethnic friendships (i.e., *c'* path in Figure 1; $b = -0.48$, $SE = 0.08$, $p < .001$) and more complex social identities (i.e., *b* path in Figure 1; $b = -0.12$, $SE = 0.04$, $p < .01$) were each associated with less distance from ethnic outgroups.

Given that there was a direct link between cross-ethnic friendships and ethnic outgroup distance, and that social identity complexity was associated with outgroup distance, the next set of analyses followed procedures outlined by Preacher, Rucker, and Hayes (2007) to test conditional indirect effects. Conditional indirect effects refer to mediational effects at different levels of the moderator (i.e., availability of cross-ethnic peers in one's grade). Bootstrapping was used to investigate the role of social identity complexity as a mediator at various values of cross-ethnic availability (Bollen & Stine, 1990; Shrout & Bolger, 2002). The bootstrapping method produced 95% bias-corrected confidence intervals of estimates of the indirect effect from 1,000 resamples of the data. Confidence intervals that do not contain zero indicate that the conditional indirect effect is significant at $\alpha = .05$.

As reported in Table 5, conditional indirect effects were first examined at three levels of cross-ethnic availability that were one standard deviation below the mean (.54), at the mean (.68), and one standard deviation above the mean (.81). Social identity complexity was a significant mediator only when cross-ethnic availability was at or one standard deviation above its mean. To further investigate the exact level of cross-ethnic availability at which social identity complexity is a significant mediator, conditional indirect effects were

examined at each possible level of cross-ethnic availability in our sample. As shown in Table 5, these results suggest an indirect effect of social identity complexity when adolescents have 69% or greater cross-ethnic peers in the seventh grade at their school. That is, consistent with our hypothesis, social identity complexity mediated the association between cross-ethnic friendships and distance from ethnic outgroups when adolescents had a high proportion of cross-ethnic peers in the seventh grade at their school.

Discussion

Complementing research on social identity development which focuses primarily on single social identities (e.g., ethnic), we examine multiple social identities and the ways in which they intersect in an early adolescent sample. By capturing the perceived overlap among multiple social groups with which youth identify, the social identity complexity construct can help us understand ingroup and outgroup distinctions (or the lack thereof), and is therefore particularly applicable to the study of intergroup attitudes. To study these constructs in the context of existing relationships within schools, it is also critical to consider cross-ethnic friendships and the availability of cross-ethnic peers within the school when relating social identity complexity to intergroup attitudes.

One of our main objectives was to investigate the link between social identity complexity and ethnic intergroup attitudes. Consistent with prior research (e.g., Brewer & Pierce, 2005), young adolescents with high social identity complexity reported less distance from ethnic outgroups. Social identity complexity likely minimizes the distinctions between ingroups and outgroups, which can promote positive intergroup attitudes (Brewer & Pierce, 2005). Alternatively, social identity complexity may function similarly to the common ingroup identity model and dual identity approach (Gaertner & Dovidio, 2000; Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993), which posits that connecting ingroups and outgroups through a common, superordinate ingroup extends positive ingroup attitudes to all members of the larger group. Although social identity complexity differs in that it considers specifically perceptions of multiple, lateral ingroups, individuals with high social identity complexity define their ingroups across one category as including both ingroups and outgroups across other categories (e.g., members of the school band can be African-American or European-American).

Given that high social identity complexity was associated with more positive attitudes towards ethnic outgroups, we were particularly interested in investigating the contextual antecedents associated with complex social identities. Consistent with our hypothesis, we documented that close cross-ethnic friendships are associated with social identity complexity, and that this effect is especially strong when youth have ample opportunities to form such relationships at school (i.e., availability of cross-ethnic classmates is at or greater than its mean). These findings are consistent with research based on adult samples suggesting that individuals who share interpersonal relationships with outgroup members may be especially aware of malleable boundaries between ingroups and outgroups (Schmid et al., 2009). Moreover, the role of cross-ethnic availability as a moderator of the link between cross-ethnic friendships and social identity complexity underscores the importance of having a range of opportunities to form cross-ethnic friendships. While prior research did not account for cross-group availability, possibly because opportunities for outgroup affiliation were comparable across groups (e.g., Catholics and Protestants in Ireland; Schmid et al., 2009), cross-ethnic availability was considered in the current study because opportunities for outgroup interaction varied across the four schools for youth from different ethnic groups. Considering that most adolescents with low availability of cross-ethnic peers reported that less than half of their friends belonged to other ethnic groups, it is possible that having only one or a couple of cross-ethnic friends is not enough to influence social identity

complexity. That is, consistent with prior research suggesting that adults with the greatest social identity complexity have an extremely high degree of cross-group interaction (e.g., all of one's friends belong to an outgroup; Schmid et al., 2009), social identity complexity is promoted most strongly when adolescents with many options for cross-ethnic affiliation avail themselves of these opportunities.

Due to the moderating effect of cross-ethnic availability, social identity complexity mediated the link between cross-ethnic friendships and ethnic outgroup distance only when cross-ethnic availability was relatively high (i.e., 68%). That is, the mediational model was supported when ethnic ingroup representation was at or below 32% within one's school. Similar to results of our moderation analyses, opportunities for cross-ethnic affiliation must be present and taken advantage of for social identity complexity to account for the link between cross-ethnic friendships and ethnic intergroup attitudes. Extending research in adult samples investigating social identity complexity as a mediator of this association (Schmid et al., 2009), this study contributes to research on the link between cross-ethnic affiliation and outgroup attitudes among children (e.g., Aboud et al., 2003; Feddes et al., 2009) by suggesting a mediational role of social identity complexity for young adolescents, especially when there are many cross-ethnic peers with whom to affiliate at school.

Limitations and Future Directions

In the current study, we relied on a sample derived from four urban middle schools that were ethnically diverse. However, because relative ethnic representation was similar across the four ethnic groups in each school (e.g., Latino or Mexican-American youth were one of the largest groups, and Asian-American students were the smallest group), the degree to which cross-ethnic peers were available may have affected ethnic groups in our sample in different ways. For example, Latino or Mexican-American youth (who had the lowest probability of cross-ethnic contact) had few cross-ethnic friends, low social identity complexity, and demonstrated the greatest perceived distance from ethnic outgroup members. In contrast, the smallest ethnic group (Asian-American youth) had more cross-ethnic friends and higher social identity complexity than Latino or Mexican-American adolescents. In light of these systematic differences across groups, it is critical to avoid inferences about ethnic group differences without considering the relative size of each ethnic group. Conducting future studies using samples in which the relative size of ethnic groups varies across schools is imperative. Moreover, additional research in which the overall ethnic diversity of schools varies is important. Adolescents who belong to a relatively small ethnic group in schools with one majority ethnic group may not avail themselves to opportunities for cross-ethnic contact to the same extent as small ethnic groups in our highly diverse sample (Moody, 2001).

Although our data were collected as part of a larger longitudinal study beginning in sixth grade, we were not able to conduct longitudinal analyses because social identity complexity was measured beginning in seventh grade. The social identity complexity measure was not implemented during the first year of middle school because earlier pilot data suggested that a substantial proportion of sixth grade students experienced difficulty naming three groups with which they identify. Because to our knowledge no study on social identity complexity has relied on longitudinal data, additional research is needed to examine stability (or change) in social identity complexity, and the causal associations of our variables of interest, over time. For instance, considering that youth develop a greater ability to compare and contrast conflicting, multiple selves during middle adolescence (e.g., taking on different roles with parents compared to peers; Harter, 2012), it is possible that social identities also become more complex and differentiated during this period. While prior research proposes possible causal links (e.g., Miller et al., 2009; Schmid et al., 2009), moreover, little is known about

whether earlier outgroup contact can predict later social identity complexity, or whether social identity complexity can affect subsequent intergroup attitudes.

Lastly, additional research linking social identity complexity to other important outcomes is needed. While social identity complexity was associated with positive ethnic intergroup attitudes, such complexity may also be associated with psychological well-being. Self-complexity theory predicts that considering oneself to have multiple, unique self-aspects (i.e., high self-complexity) buffers against psychological maladjustment (Linville, 1985). Because social identity complexity is similar to self-complexity in that it considers the degree of differentiation between multiple social ingroups that contribute to self-definition, we predict that high social identity complexity is associated with better mental health. For individuals with convergent social groups (i.e., low social identity complexity), threats to one group should more easily compromise personal well-being. In contrast, largely separate ingroups (i.e., high social identity complexity) buffer against negative reactions when one social group is threatened, because failure in one domain does not imply failure in every domain (Roccas & Brewer, 2002). While theoretically social identity complexity should be related to psychological adjustment, to our knowledge no study has tested this hypothesis. As declines in psychological well-being may be especially common during early adolescence (e.g., Chung, Elias, & Schneider, 1998), examining how social identity complexity is associated with psychological adjustment during this period may be a crucial future direction.

Conclusions and Implications

Consistent with prior research (e.g., Bartko & Eccles, 2003; LaFontana & Cillessen, 2010; Smith, Denton, Faris, & Regnerus, 2002), many adolescents in our sample identified with groups based on out-of-school sports, religious affiliation, and peer crowds. Although fewer adolescents listed academic orientation and school-based clubs, these groups were rated as highly important to self-definition. While sports, religion, and peer crowds are typical groups through which many youth identify with their peers, social groups that promote connections with school may be especially important to self-definition for young adolescents. Connecting to others and finding one's niche in school is expected to be particularly important during early adolescence, as youth transition to middle schools that are larger and less structured compared to neighborhood elementary schools (Juvonen et al., 2007). Investigating how to make school-based clubs and academic activities more accessible to all students to promote identification with school is particularly important.

Finally, the current study contributes to discourse about the benefits of ethnically diverse schools. While the school-aged population in the United States is becoming increasingly ethnically diverse, many adolescents attend schools with a high proportion of same-ethnic peers (Orfield & Lee, 2007). Results of the current study, however, highlight the importance of attending schools with a high proportion of cross-ethnic peers to the development of cross-ethnic friendships, complex social identities, and positive ethnic intergroup attitudes. Diverse schools may be in the position to facilitate cross-ethnic friendships and complex social identities by providing opportunities for students of different ethnic backgrounds to interact in ways that facilitate friendships. For example, collaborative extracurricular activities in which students from various backgrounds can interact and form friendships may be especially important to social identity complexity (Brown, Brown, Jackson, Sellers, & Manuel, 2003; Knifsend & Juvonen, 2012). Thus, this study suggests that ethnically diverse school contexts, when possible, may be able to play a vital role promoting complex social identities and positive intergroup attitudes.

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Figure 1.
Moderated mediation model.

Figure 2. Availability of cross-ethnic peers in the seventh grade as a moderator of the association between cross-ethnic friendships and social identity complexity.

Table 1

Distributions of Ethnic Groups in the Seventh Grade at Each School

School	African-American	Asian-American	European-American	Latino or Mexican-American	Other
School 1	40 (14%)	30 (10%)	118 (40%)	91 (31%)	15 (5%)
School 2	62 (21%)	16 (5%)	58 (19%)	155 (52%)	10 (3%)
School 3	117 (22%)	61 (11%)	122 (23%)	211 (41%)	17 (3%)
School 4	117 (16%)	70 (10%)	343 (48%)	177 (25%)	15 (2%)

Note. While students categorized as “Other” were not included in our current sample, they were accounted for in calculations of availability of cross-ethnic peers at school. The Other group consisted of students identified as American Indian or Alaskan Native, Pacific Islander, Filipino, or as belonging to two or more ethnic groups.

Table 2

Number and Percentage of Adolescents Reporting Common Social Identities

Social identity	<i>n</i> (% of adolescents)	<u>Importance</u>	
		<i>M</i>	<i>SD</i>
Out-of-school sports	353 (57%)	3.97	0.96
Religious affiliation	325 (52%)	4.17	0.98
Peer crowds	286 (46%)	3.41	1.10
Out-of-school performing arts	211 (34%)	4.01	1.00
Gaming	162 (26%)	3.22	1.13
School-based clubs	156 (25%)	4.24	0.88
Special interests	91 (15%)	3.92	1.07
Out-of-school visual arts	58 (9%)	4.15	0.87
Academic orientation	39 (6%)	4.58	0.83
Other	9 (1%)	4.00	1.12

Note. Importance of social groups was measured on a five point scale, where 1 = *definitely not important*, 5 = *definitely important*.

Table 3

Pearson Correlations of Cross-ethnic Availability, Friendships, Social Identity Complexity, and Ethnic Outgroup Distance

	1	2	3	4
1. Availability of cross-ethnic peers	–	.25***	.07	–.03
2. Cross-ethnic friendships		–	.13**	–.28***
3. Social identity complexity			–	–.15***
4. Ethnic outgroup distance				–

**
 $p < .01$.

 $p < .001$.

Table 4

Regression Models Predicting Mediator and Dependent Variable in Moderated Mediation Model

Mediator variable model (DV = Social identity complexity)		
Predictors	<i>b</i>	<i>SE</i>
Constant	3.34***	0.05
African-American	−0.24**	0.09
Asian-American	−0.03	0.11
Latino or Mexican-American	−0.12*	0.06
School 1	0.00	0.08
School 2	−0.01	0.08
School 3	0.01	0.06
Cross-ethnic friendships	0.19*	0.08
Availability	0.29	0.27
Cross-ethnic friendships x availability	1.35*	0.56

Dependent variable model (DV = Ethnic outgroup distance)		
Predictors	<i>b</i>	<i>SE</i>
Constant	0.84***	0.15
African-American	−0.04	0.08
Asian-American	0.23**	0.09
Latino or Mexican-American	0.18**	0.06
School 1	−0.29***	0.08
School 2	−0.06	0.08
School 3	−0.18**	0.06
Cross-ethnic friendships	−0.48***	0.08
Social identity complexity	−0.12**	0.04

*
 $p < .05$,**
 $p < .01$,***
 $p < .001$.

Table 5

Conditional Indirect Effect at Different Levels of Cross-ethnic Availability

Conditional effect at availability = mean $\pm$ 1 SD (DV = Ethnic outgroup distance)				
Availability	$(a_1 + a_3W)b_1$	SE	Lower 95% CI	Upper 95% CI
.54	−0.00	0.01	−0.03	0.03
.68	−0.02	0.01	−0.06	−0.01
.81	−0.05	0.02	−0.10	−0.01

Conditional effect at range of values of availability (DV = Ethnic outgroup distance)				
Availability	$(a_1 + a_3W)b_1$	SE	Lower 95% CI	Upper 95% CI
.49	0.01	0.02	−0.02	0.05
.53	0.00	0.02	−0.02	0.04
.59	−0.01	0.01	−0.04	0.01
.69	−0.03	0.01	−0.06	−0.01
.76	−0.04	0.02	−0.08	−0.01
.81	−0.04	0.02	−0.10	−0.01
.84	−0.05	0.02	−0.11	−0.01
.90	−0.06	0.03	−0.14	−0.02

Note. Availability scores are centered about mean availability across the sample. The conditional indirect effect is $(a_1 + a_3W)b_1$, where a_1 is the association of the predictor, cross-ethnic friendships, with the mediator, social identity complexity, a_3 is the association of the interaction of cross-ethnic friendships and availability of cross-ethnic peers with social identity complexity, W is availability of cross-ethnic peers, and b_1 is the association of social identity complexity with ethnic outgroup distance. For brevity, only a subset of the range of values of availability are presented.