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EMPIRICAL RESEARCH

Identification with Multiple Groups in Multiethnic Middle Schools: What Predicts Social Ingroup Overlap?

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Abstract Self-definition becomes a central task during early adolescence, as youth identify with multiple social groups. Focusing on ethnic identification and identification with other salient social ingroups (e.g., those based on extracurricular activities), we examined predictors of perceived ingroup membership overlap among ethnically diverse adolescents ($n = 1264$; $M_{age} = 12.51$; 53 % female). Social ingroup overlap remained relatively stable, but decreased, across the seventh to eighth grade. The number of cross-ethnic classmates in seventh grade predicted lower overlap in the eighth grade, and cross-ethnic friendships by eighth grade mediated this association. Findings underscore the opportunities provided by multiethnic middle schools for youth to connect and befriend one another across ethnic lines, as well as to foster divergent social identities that are associated with positive intergroup attitudes.

Keywords Ethnic identification · Social identification · Cross-ethnic friendships · Multiethnic schools

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Introduction

During early adolescence, youth increasingly attend to their social worlds in an effort to assess to which groups they belong and where they fit into the social hierarchy (LaFontana and Cillessen 2010; Sani and Bennett 2004). Most come to identify with not just one group, but multiple social entities that each provide a sense of belonging and self-esteem (Tajfel and Turner 1979). While ethnic group membership is especially central for societal minority youth (e.g., Hitlin et al. 2006), belonging to a particular ethnic group or category is likely to become increasingly salient for most young adolescents when they move onto middle school, as middle schools are generally more ethnically diverse than elementary schools (Frankerberg et al. 2003). In early adolescence, identification with other social groups also becomes increasingly important. Specifically, school-based extracurricular activities (Dworkin et al. 2003; Fredricks et al. 2002), groups based on social status and popularity (Tanti et al. 2011), and religious groups (Davis and Kiang 2015) are integrally related to the social lives of youth. In the present study, we investigate the overlap between ethnic identification (i.e., self-categorization as Latino, Asian American, etc.) and identification with other social groups in middle school. Our main goal is to investigate the social-contextual antecedents of such overlap in multiethnic schools.

Relatively little research has examined how young adolescents come to identify with multiple groups concurrently, and even less has focused on how such groups (and their overlap) change over time. Early adolescence is a particularly critical time to study identification with multiple social groups or categories, because at this phase, youth have gained the cognitive prerequisite of multiple classification skills (Aboud 1988; Bigler and Liben 1992;

Harter 1999, 2012). Given the heightened salience of (e.g., Verkuyten and Kinket 1999) and changes in (e.g., Kindermann 2007) group affiliations, social ingroups are also likely to vary over time. We presume that in the context of multiethnic middle schools, both exposure to peers of other ethnicities and close cross-ethnic relationships potentially shape the perceived overlap between identification with one's ethnic group and other meaningful social ingroups. Considering the overlap among ingroups, and any changes in such overlap, is critical because greater divergence (i.e., lower overlap) among groups with which adolescents identify is related to more positive attitudes about other ethnic groups (e.g., Knifsend and Juvonen 2014), as described below.

Divergence of Self-Identified Social Ingroups

Our examination of the perceived overlap of adolescents' ethnic identification and identification with other social groups over a one-year span in middle school is guided by the social identity complexity construct. Social identity complexity refers to the perceived overlap of the social groups with which individuals align themselves, and it is commonly assessed by examining self-reported overlap in the memberships of multiple ingroups (Roccas and Brewer 2002). For example, a teenager who identifies as Asian American is likely to also identify with groups based on her activities at school, interests, or social status (e.g., soccer and "popular group"). When she perceives the members of the groups she identifies with to overlap substantially (e.g., most soccer players are Asian American), her social ingroups converge. In contrast, when she perceives only a few soccer players are Asian American, her social groups diverge. Such divergence in the members of multiple ingroups has been found to be linked with positive intergroup attitudes (e.g., Knifsend and Juvonen 2014). When youth identify with groups that do not overlap in their members, it is presumed that the boundaries between ingroup and outgroup members blur (as opposed to strengthen). That is, when strongly identifying as a soccer player, an Asian American student is likely to view her non-Asian American teammates as part of her central social ingroup. If the soccer team is composed mainly of other ethnic groups besides Asian Americans, the divergence between her ethnic identification and her identification as a soccer player is then presumed to account for lower prejudice towards ethnic outgroups represented on the soccer team.

The ways in which such overlap is operationalized varies across studies and is driven by the research question at hand. For example, some studies assess the overlap between specific national and religious social groups (e.g., Catholics and Irish; Schmid et al. 2009), while other research relies on open-ended methods of multiple self-identified social ingroups (Brewer and Pierce 2005). Thus, overlap can be understood anywhere from the perceived divergence between two particular groups, or among all possible pairings of many social ingroups. Given the psychological meaning and relevance of ethnic group membership to peer relationships in early adolescence (e.g., Hamm et al. 2005; Way and Chen 2000), we focus specifically on ethnic self-categorization (cf. Brewer et al. 2012; Verkuyten and Martinovic 2012) and its overlap with three other social groups. Rather than using the term social identity complexity, used to refer to the overlap between all possible pairings of groups youth identify with in adolescent samples (Knifsend and Juvonen 2014), we refer here specifically to the overlap between ethnic identification and self-identified social ingroups.

Exposure to Cross-Ethnic Peers at School and Cross-Ethnic Friendships

Extensive research has demonstrated the importance of ethnic contexts in shaping intergroup interactions among youth (for a review, see: Rutland and Killen 2015). In particular, intergroup contact theory (Allport 1954; Brown and Hewstone 2005; Pettigrew 1998; Pettigrew and Tropp 2006) makes predictions about attitudes towards outgroups and about the ways in which contact impacts evaluations of ingroups as divergent (or convergent). Intergroup contact is hypothesized to increase divergence among social ingroups, as greater exposure to and experience with a diverse set of individuals underscores that one's social identities can include "different" others. For example, living in diverse neighborhoods is associated with more divergent social identities among adults (Miller et al. 2009; Schmid et al. 2013). For adolescents, we expect that attending schools with a higher proportion of cross-ethnic peers will serve a similar function in fostering divergence between one's ethnic group and other social ingroups.

Extending the analyses from the proximal social context—the ethnic composition of one's school—we also investigate personal relationships with available peers as another important antecedent of ingroup divergence (e.g., Meeus et al. 2002). It appears that close cross-ethnic relationships may amplify contact effects, over and above exposure to cross-ethnic peers (Turner et al. 2007), because positive affect generalizes from personal relationships to a whole group (Pettigrew 1998). Indeed, friendships with outgroup peers are associated concurrently with greater divergence of social ingroups among adolescents (Knifsend and Juvonen 2014) and adults (Schmid et al. 2009). Predicated on the opportunity to interact with ethnic outgroup members, it seems likely then that cross-ethnic friendships could help account for the association between exposure to

cross-ethnic peers and perceived ingroup overlap by functioning as a mediator. Studying the role of friendships is a developmentally relevant question as close, intimate friendships become especially important during early adolescence (Berndt 1982; Brown and Larson 2009; Buhrmester and Furman 1987).

Current Study and Hypotheses

The current study investigates changes in, as well as predictors of, the overlap among ethnic identification and identification with other important social groups across the seventh and eighth grades in multiethnic middle schools. Four aims guide the current study. First, the frequency and importance of different social groups with which youth identify are explored. Second, we describe changes in social ingroup membership overlap over a one-year span. Presuming that the extent to which one's social groups diverge reflects in part the cross-ethnic opportunities of the school social environment, the correlation between seventh to eighth grade overlap scores should remain relatively stable. When examining mean differences in the scores over time, there are competing hypotheses. As youth likely get more involved with activities and form close relationships with a range of classmates over time in the same school context, social ingroups should diverge. Alternatively, given that friendships tend to become increasingly ethnically segregated across adolescence (Hallinan and Teixeira 1987), social ingroups may converge by the end of middle school.

Our third, and main, aim is to test the role of the school social environment and friendships in predicting the perceived overlap between one's ethnic self-categorization and identification with other important social groups. We hypothesize that greater exposure to cross-ethnic classmates in the seventh grade predicts more cross-ethnic friendships by the eighth grade, which in turn is expected to be associated with greater divergence between ethnic and other social ingroups in eighth grade. That is, earlier opportunities to interact with peers from multiple ethnic backgrounds are presumed to promote friendships with these peers. Because close friendships are likely to be formed in the context of common activities and interests, friendships with peers from other ethnic groups should then predict lower social ingroup overlap at eighth grade, controlling for seventh grade overlap scores. We test these links through a mediational model where eighth grade cross-ethnic friendships are expected to account for the association between the cross-ethnic affordances of the school (i.e., proportion of cross-ethnic peers in one's grade at seventh grade) and perceived social ingroup overlap at eighth grade.

Given our large, ethnically diverse sample, we also examine possible ethnic differences in the proposed mediational model as part of our final fourth aim. Associations between cross-ethnic peers, cross-ethnic friendships, and the overlap between one's social groups may vary depending on whether one belongs to a minority or majority ethnic group (Brewer et al. 2012). Specifically, ethnic minority (i.e., Asian) college students rated their ingroups as more convergent than ethnic majority group students (i.e., White), a finding Brewer et al. (2012) attributed to possible differences in ethnic enclaving or collectivistic values among minority students. Although such explanations have not yet been tested among adolescents, the findings highlight the need to consider ethnic group differences in investigations of social ingroup overlap. Therefore, we examine whether or not ethnic self-categorization (i.e., identification as African American, Asian, Latino, or White) moderates the hypothesized paths and indirect effects of our proposed model.

Method

The current study relies on data from a larger, longitudinal study of adolescents' social, emotional, and academic experiences across 26 public middle schools in California that vary systematically in ethnic composition, collected from 2009 to 2014 in three cohorts. Analyses for the current study rely on data from 13 schools ($n = 2784$; see Table 1, California Department of Education 2015) where it was possible to return for 2 days of data collection in both the seventh and eighth grades, necessary for collecting individualized social ingroup data. The current study extends earlier published cross-sectional analyses in a seventh grade sample based on four schools ($n = 622$; Knifsend and Juvonen 2014), by including data from additional schools at 7th grade and again at 8th grade, and by focusing on the predictors of social ingroup overlap change, over a one-year span. Schools in the current analyses varied in free or reduced lunch eligibility from 26 to 86 %.

Participants

Complete data were available for 1679 students from the 13 schools. Analyses were restricted to the four major pan-ethnic groups to be able to test whether the predicted associations are moderated by ethnicity ($n = 414$ omitted, while one additional participant did not report gender). The final analytic sample ($n = 1264$, 53 % female), based on self-reported ethnic group, was 48 % Latino ($n = 602$), 25 % White ($n = 315$), 14 % Asian American ($n = 181$), and 13 % African American/Black ($n = 166$). Table 1 lists the ethnic composition of the four pan-ethnic groups for

Table 1 School ethnic compositions

School	School ethnic representation			
	African American/Black (%)	Asian American (%)	Latino (%)	White (%)
1	14	10	31	40
2	21	5	51	19
3	22	11	41	23
4	57	0	41	<1
5	27	0	62	9
6	23	4	67	2
7	1	54	41	2
8	3	4	46	40
9	64	2	22	9
10	10	9	28	51
11	<1	22	14	60
12	1	45	19	29
13	60	0	40	0

each of the 13 schools (California Department of Education 2015).

Procedure

Sixth graders were recruited to participate in a study examining what school and life are like. After a short presentation about the study, students brought home parent consent forms and informational letters explaining the study. Students returning the consent form were entered into two separate raffles of $50 gift cards and Apple iPods. Only students who returned a consent form permitting participation (81 % of students at 26 schools) and assented to participate were included in the study, and 95 % of the students surveyed in seventh grade in this sample also completed the survey in eighth grade, indicating low attrition.

Data were collected during two class sessions each in the seventh and in the eighth grade, approximately one year later. Principal investigators, graduate students, or trained undergraduate students read most items aloud to the students, and students completed the survey privately. Students received $10 for their participation in each grade.

Measures

Demographic Variables

Students self-reported their gender in the fall of sixth grade. Ethnic identification was assessed, based on a list with 13 options, in the seventh and eighth grade. Options for ethnic group consisted of: American Indian, Black/African American, Black/other country of origin, East Asian, Latino/other country of origin, Mexican/Mexican–American, Middle Eastern, Pacific Islander, South Asian, Southeast Asian, White/Caucasian, Multiethnic/biracial, and Other. Due to a small *n* for some groups, seventh grade ethnic groups were collapsed in our main analyses as Latino (i.e., Latino/other country of origin and Mexican/Mexican–American), White (i.e., White/Caucasian), Asian American (i.e., East and Southeast Asian), and African American/Black (i.e., Black/other country of origin and Black/African American) to use as controls and as moderators. Both seventh and eighth grade ethnic self-identification were used to generate the social ingroup overlap measure (as described below). Consistent with other investigations of ethnic self-categorization (Nishina et al. 2010), seven percent of students changed their self-reported ethnic group across seventh to eighth grade.

Exposure to Cross-Ethnic Peers

Exposure to cross-ethnic peers in one's grade at school was calculated by dividing the number of seventh grade peers in ethnic outgroups by the total number of seventh grade peers (California Department of Education 2015). Ethnic outgroups (i.e., those other than same-ethnic) were defined based on self-reported ethnic self-categorization in the seventh grade. Reflecting the relatively high level of school diversity, on average over half of one's grademates represented other ethnic groups ($M = .57$, $SD = .17$).

Cross-Ethnic Friendship Choices

Students provided unlimited nominations of their "good friends" at their school in both the seventh grade and in the eighth grade. For each friend nominated, students indicated whether their friend was the same ethnicity as they.

Consistent with prior research (Knifsend and Juvonen 2014), we relied on this subjective measure of friends' ethnic group membership because it is presumed to be psychologically meaningful. Subjective judgment also allowed students themselves to determine whether friends who are multiethnic/biracial, or those from a different country of a particular pan-ethnic group, are of same ethnicity as they (e.g., whether a friendship between Japanese and Korean students is perceived as same-ethnic). The proportion of cross-ethnic friendships was calculated by dividing the number of cross-ethnic friends by the total number of friends nominated. Consistent with high exposure to cross-ethnic peers, an average of 44 % of listed friends were perceived to represent another ethnic group ($SD = .33$) in the seventh grade (quartile 1, $Q_1 = .17$; $Q_2 = .40$; $Q_3 = .67$). Twenty-one percent of seventh grade youth had all same-ethnic friends and 14 % reported all cross-ethnic friends. In eighth grade, 43 % of friends were cross-ethnic on average ($SD = .34$; $Q_1 = .14$; $Q_2 = .40$; $Q_3 = .67$), with 23 % of youth listing all same-ethnic friends and 14 % with all cross-ethnic friends.

Social Ingroup Overlap

The degree to which one's ethnic identification is perceived to overlap with other social ingroups was examined in the seventh and eighth grades using a measure from Knifsend and Juvonen (2013, 2014), based on an adult version (Brewer and Pierce 2005; Roccas and Brewer 2002). Data collection took place over 2 days because subsequent ratings of overlap were based on groups identified by each participant. To elicit relevant social ingroups on the first day, students were asked to imagine that they were filling out a Facebook page describing themselves to people who do not know them by identifying themselves as members of three social groups. Examples of in-school and out-of-school categories that could describe them, with four to five specific groups within each category, included sports, performing and visual arts, religious, and social status-based groups. Given that ethnic identification (measured separately) was included for all youth as their fourth group, students were encouraged to name their interest- and activity-related social groups. After the first day, research assistants individualized each student's survey with the group labels named by each participant, in addition to their self-reported ethnic category as reported from 13 options on their demographic checklist (see Demographic Variables). On the second day of data collection, students then rated the importance of their four ingroups, as well as the membership overlap amongst 12 bidirectional pairings of the four groups (Brewer and Pierce 2005) out of all the peers they know. The overlap ratings were conducted on a five-point scale. In these analyses, items were coded to reflect the extent of overlap of one's groups ranging from low (1 = *hardly any*) to high (5 = *almost all*). For the current analyses that focus specifically on the overlap between ethnic identification and other social ingroups (cf. Brewer et al. 2012; Verkuyten and Martinovic 2012), we include the six bidirectional pairings of concurrent ethnic self-categorization with the other three unique social ingroups named by each participant (e.g., How many [Latinos] are [video gamers]?; How many [video gamers] are [Latinos]?). Social ingroup overlap was calculated as the mean of these six ratings, where a higher score reflects greater convergence between the student's ethnic group and other social ingroups. Reliability, calculated using a Spearman-Brown split-half coefficient by separating bidirectional pairings into two subsets (e.g., "How many [Latinos] are [video gamers]?" in one subset, and "How many [video gamers] are [Latinos]?" in the other subset), indicated good internal consistency of the measure ($\rho = .82$).

To measure social ingroup overlap in the eighth grade, students were provided with a list of their three unique seventh grade social groups. First, they were prompted to assess whether one or more groups ceased to describe them. In those cases, they were asked to replace the group name with a new one. Fifty-four percent of youth changed at least one social ingroup from the seventh to eighth grade. Research assistants then individualized each student's social ingroup measure for the second day of data collection, based on their revised groups and self-reported ethnic group in the eighth grade. Data collection on the second day and the calculation of overlap scores followed the procedures described above. Eighth grade overlap items were also internally consistent ($\rho = .83$).

Importance Ratings

Overlap scores are based on social ingroups that are presumed to be personally meaningful (Roccas and Brewer 2002). Therefore, youth were asked to rate the importance of each of their three social groups, in addition to their self-reported ethnic group (e.g., "How important is it to you that you are a(n) [Latino], [video gamer], etc.?"). Responses were on a five-point scale (1 = *definitely not important*; 5 = *definitely important*). Although we cannot statistically compare the scores across emerging categories because the specific groups varied across individuals, the ratings allow us to estimate the relative importance of one's ethnic group (included for each participant) compared to other social groups unique to each student.

Analytic Plan

Our descriptive analyses involved *t*-tests and correlational analyses. To describe the frequency and importance of the different groups with which youth identified (Aim 1), we

calculated frequencies of the types of groups listed and computed their mean importance ratings. Given our focus on ethnic group membership, a one-way analysis of variance with post hoc independent samples *t*-tests, accounting for six planned comparisons ($p = .008$), was conducted to examine differences among African American/Black, Asian American, Latino, and White students in the importance of their ethnic group membership. A Pearson's correlation and a dependent-samples *t* test were used to test stability and change in social ingroup overlap over a one-year span (Aim 2). To determine if such change varied by ethnic group, a one-way analysis of variance investigated group differences in an overlap difference score computed from seventh to eighth grade.

To examine predictors of change in social ingroup overlap, and specifically, whether cross-ethnic friendships mediate the link between exposure to cross-ethnic peers in one's grade at school and such overlap (Aim 3), analyses were conducted using the PROCESS macro for SPSS Statistics version 23 (Hayes 2013). Model 4, specifically, tests the following mediational links, in addition to providing tests of the indirect effect. Following procedures outlined by MacKinnon (2008), the associations tested were: (1) the effect of the predictor on the mediator (i.e., *a* path), (2) the effect of the mediator on the outcome (i.e., *b* path), and (3) the effect of the predictor on the outcome (i.e., *c*' path). The *a* path was investigated in a model regressing eighth grade cross-ethnic friendships on seventh grade exposure to cross-ethnic peers in one's grade at school. The *b* and *c*' paths were tested simultaneously in a model regressing eighth grade overlap scores on eighth grade cross-ethnic friendships (*b*) and exposure to cross-ethnic peers in seventh grade (*c*'). Exposure to cross-ethnic peers, cross-ethnic friendships, and social ingroup overlap were grand-mean centered. All analyses controlled for dummy-coded gender (comparison group: female) and ethnic group (comparison group: White), as well as cross-ethnic friendships and social ingroup overlap in seventh grade, which allowed us to model change over the one-year span. Bootstrapping was employed to investigate the indirect effect (i.e., $a \times b$) of cross-ethnic friendships on this association. The bootstrapping method computes bias-corrected, 95 % confidence intervals of estimates of the indirect effect calculated from 10,000 resamples of the data. A confidence interval that does not include zero suggests a significant indirect effect at $\alpha = .05$ (Bollen and Stine 1990; Shrout and Bolger 2002). The ratio of the indirect effect to the total effect of exposure to cross-ethnic peers on social ingroup overlap (P_M), a measure of effect size, was computed to reflect the percentage of the total effect attributed to the mediator, cross-ethnic friendships. Analyses were also replicated using the general overlap score among all 12 pairs of groups in the original measure (cf. Knifsend and Juvonen 2014; see Social Ingroup Overlap section).

Models 7, 14, and 58 from the PROCESS macro were used to explore conditional indirect effects by ethnic group, to determine if the associations and indirect effects examined in our main analyses varied by ethnic group membership (Aim 4). Model 7 investigates the role of seventh grade ethnic self-categorization as a moderator of the *a* path. Model 14 examines ethnic group as a moderator of the *b* path. Model 58 tests ethnic group as a moderator of both the *a* and *b* paths, simultaneously. Each of these models were tested to determine which provides the best fit. Ethnic groups were rotated such that each ethnic group (e.g., Asian American) was compared with the rest of the sample in aggregate (e.g., African American/Black, Latino, and White), and a Bonferroni correction for four planned comparisons (one per ethnic group) were employed to identify significant interactions, $\alpha = .01$. Analyses controlled for gender, as well as cross-ethnic friendships and social ingroup overlap in seventh grade. Simple slopes were tested for significant interactions using linear regression. Conditional indirect effects were further analyzed using bootstrapping within each group, and additionally, the index of moderated mediation tests the equality of the conditional indirect effects within the two groups compared.

Results

Importance of Social Ingroups

Table 2 shows the frequencies of the different types of social groups identified at the seventh and eighth grades, overall and by all four pan-ethnic groups. Students most commonly named sports (e.g., soccer), followed by religious groups (e.g., Catholic), performing arts activities (e.g., drama), and social status (e.g., popular) groups. Identification with academic groups (e.g., smart kids) and visual arts (e.g., drawing) was least common. Ethnic and other social groups, on average, were rated as highly important on a five-point scale (ethnic group: $M_{7th} = 4.04$, $SD_{7th} = 1.09$; $M_{8th} = 3.97$, $SD_{8th} = 1.09$; other social groups: $M_{7th} = 3.91$, $SD_{7th} = .72$; $M_{8th} = 3.78$, $SD_{8th} = .76$).

Consistent with prior research (e.g., Douglass et al. 2014), the importance of ethnic identification varied across ethnic groups, and the differences were similar across the seventh and eighth grades (seventh grade: $F(3,1251) = 115.81$, $p < .001$, $\eta_p^2 = 0.22$; eighth grade: $F(3,1251) = 79.56$, $p < .001$, $\eta_p^2 = 0.16$). At seventh grade, White students ($M = 3.18$, $SD = 1.15$) reported their ethnic group as less important than Asian American students, ($M = 4.07$, $SD = 0.97$), $t(1251) = 9.81$, $p < .001$, 95 %

Table 2 Percentage of self-identified social ingroups

Social ingroup	Seventh grade					Eighth grade				
	Overall (%)	African American/Black (%)	Asian American (%)	Latino (%)	White (%)	Overall (%)	African American/Black (%)	Asian American (%)	Latino (%)	White (%)
Sports	26	25	20	29	26	27	26	20	29	26
Religious affiliation	17	15	16	20	14	16	14	15	19	13
Performing arts	15	22	13	11	18	14	20	12	10	18
Social status	14	15	17	13	14	14	15	17	14	12
Special interest	9	6	10	8	12	9	7	10	8	12
Gaming	8	7	10	8	6	8	6	10	8	6
Visual arts	4	3	6	4	4	4	3	6	4	5
Academic	4	3	6	3	4	4	3	7	3	5

Percentages are calculated as the number of groups listed within that category divided by the total number of groups, overall ($n = 3792$ groups; three groups for each of 1264 students) and within African American/Black ($n = 498$ groups), Asian American ($n = 543$ groups), Latino ($n = 1806$ groups), and White ($n = 945$ groups)

CI [.65, 1.13], $d = .84$, who reported their ethnic group as less important than both Latino students, ($M = 4.36$, $SD = 0.88$), $t(1251) = 3.60$, $p < .001$, 95 % CI [.08, .51], $d = .31$, and African American/Black students, ($M = 4.48$, $SD = .88$), $t(1251) = 3.92$, $p < .001$, 95 % CI [.13, .68], $d = .44$, who did not differ from one another, $t(1251) = 1.33$, $p = .18$, 95 % CI [−.34, .11], $d = .14$.

Change in Overlap from Seventh to Eighth Grade

Our second aim was to examine the overlap between ethnic and other social ingroups across the seventh to eighth grade. As shown in Table 3, overlap scores were moderately stable across ($r = .47$, $p < .001$), but reflected greater divergence (i.e., less overlap) over the one-year span, $t(1263) = 4.61$, $p < .001$. Change scores did not differ by ethnic group, $F(3, 1260) = .90$, $p = .44$, $\eta_p^2 = 0.002$. Hence, the divergence in social ingroups was robust across all four pan-ethnic groups.

Predicting Change in Overlap

Correlations and descriptive statistics of main model variables are shown in Table 3. Figure 1 shows the path coefficients and Table 4 shows results of the model estimating the *b* and *c*' paths, predicting eighth grade overlap. Using bootstrapping, the indirect effect was significant ($b = -.09$, $SE = .03$, 95 % CI [−.16, −.03]). The ratio of the indirect effect to the total effect (P_M) was .13 ($SE = .06$, 95 % CI [.05, .26]), reflecting that 13 % of the total effect was explained partially by cross-ethnic friendships in eighth grade. These main analyses were also replicated using the general overlap score among all 12 pairs of groups in the original measure (cf. Knifsend and Juvonen 2014) with similar (albeit somewhat weaker) findings.

Moderation by Ethnic Group

Using Model 7 of the PROCESS macro, a significant interaction was revealed when comparing the link between exposure to seventh grade cross-ethnic peers and eighth grade cross-ethnic friendships (*a* path) for Asian students versus all other youth, ($b = .28$, $SE = .12$, $p = .01$, 95 % CI [.06, .51]). Regressions testing simple slopes among Asian students versus the rest of the sample suggested that the association of cross-ethnic peers at school and cross-ethnic friendships was larger for Asian students ($b = .72$, $SE = .12$, $p < .001$, 95 % CI [.49, .96]) than it was for the rest of the sample ($b = .32$, $SE = .06$, $p < .001$, 95 % CI [.21, .43]), albeit each were significant. Testing mediational effects, the index of moderated mediation was significant for the conditional indirect effect on the *a* path for Asian American students versus other youth in our sample ($(a_3 i b_i)\delta = -.05$, $SE = .03$, 95 % CI [−.12, −.01]). The mediational effect was larger for Asian American students ($(a_3 i b_i)\delta = -.14$, $SE = .05$, 95 % CI [−.25, −.05]) relative to youth from other ethnic backgrounds overall ($(a_3 i b_i)\delta = -.08$, $SE = .03$, 95 % CI [−.14, −.03]), although each were significant. Interactions comparing other ethnic groups (e.g., Latino vs other groups) across the *a* path and/or the *b* path (Models 7 and 14 of the PROCESS

Table 3 Correlations and descriptive statistics of main model variables

	1.	2.	3.	4.	5.	6.	7.	*M*	*SD*
1. Importance of ethnic identification—7th	–							4.04	1.09
2. Exposure to cross-ethnic peers—7th	−0.03	–						0.57	0.17
3. Cross-ethnic friendships—7th	−0.08**	0.32***	–					0.44	0.33
4. Social ingroup overlap—7th	0.18***	−0.21***	−0.24***	–				2.97	0.75
5. Importance of ethnic identification—8th	0.54***	−0.08*	−0.09**	0.14***				3.97	1.09
6. Cross-ethnic friendships—8th	−0.14***	0.37***	0.55***	−0.25***	−0.13***	–		0.43	0.34
7. Social ingroup overlap—8th	0.13***	−0.24***	−0.20***	0.47***	0.21***	−0.26***	–	2.87	0.76

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

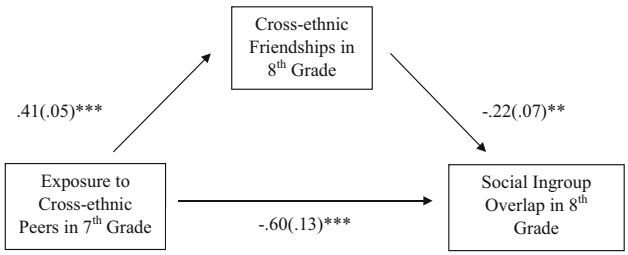

Fig. 1 Final mediation model. Model reflects *b*'s with standard errors in parentheses. **$p < .01$; ***$p < .001$

macro) were not significant, suggesting omnibus mediational effects. Model 58 of the PROCESS macro (testing conditional indirect effects on the *a* path and the *b* path simultaneously) mostly corroborated these findings, with the exception that the index of moderated mediation did not reach significance with both paths modeled ($(a_{3i}b_i)\delta = -.18$, $SE = .10$, 95 % CI [−.41, .01]). In sum, results suggest that opportunities to interact with peers from other backgrounds in schools are linked with divergence of one's social ingroups over time, in part through a greater proportion of cross-ethnic friendships.

Discussion

Complementing developmental research on identification with a single social group or category, this study was designed to examine the intersections between ethnic self-categorization and identification with other important social groups in multiethnic middle schools. Given cognitive advances relevant to multiple classification skills (Aboud 1988; Bigler and Liben 1992; Harter 1999, 2012) and increases in the salience of group affiliations (e.g., Verkuyten and Kinket 1999), we focused on early adolescence to address this question. Presuming that ethnic group is an especially salient group membership in multiethnic middle schools (Bellmore et al. 2007), we specifically examined its overlap with other social groups, as well as the social-contextual antecedents of such overlap.

Our findings show that perceived ingroup overlap, while relatively stable, decreased over the seventh to eighth grade, reflecting greater divergence of one's social ingroups over the one-year span. Both the exposure to cross-ethnic grademates and cross-ethnic friendships uniquely predicted this divergence across time. More specifically, cross-ethnic friendships at eighth grade

Table 4 Regression model predicting social ingroup overlap in 8th grade

Predictors	*b*	*SE b*	95 % CI of *b*	*t*	*p*
Intercept	2.92***	0.04	[2.84, 3.00]	68.33	<.001
Female	−0.07	0.04	[−0.14, 0.00]	−1.84	.065
African American/Black	0.14*	0.06	[0.01, 0.27]	2.19	.029
Asian American	−0.02	0.06	[−0.14, 0.10]	−0.32	.747
Latino	−0.06	0.05	[−0.15, 0.03]	−1.26	.207
Exposure to cross-ethnic peers—7th grade	−0.60***	0.13	[−0.85, −0.35]	−4.75	<.001
Cross-ethnic friendships—7th grade	−0.03	0.07	[−0.17, 0.11]	−0.44	.663
Social ingroup overlap—7th grade	0.42***	0.03	[0.36, 0.47]	15.62	<.001
Cross-ethnic friendships—8th grade	−0.22**	0.07	[−0.35, −0.08]	−3.15	.002
R^2	0.26***				<.001

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

mediated the link between greater exposure to cross-ethnic peers at seventh grade and decreased social ingroup overlap at eighth grade. Findings of these analyses are robust, given that we controlled for seventh grade overlap scores. Together, these results suggest ways in which opportunities for cross-ethnic contact, and subsequent relationships, shape how youth come to see their social ingroups as inclusive of different others in multiethnic schools. While previous research based on a smaller number of schools revealed that cross-ethnic friendships are concurrently related to greater social identity complexity (i.e., less overlap among multiple social ingroups) only when there is adequate exposure to cross-ethnic peers (Knifsend and Juvonen 2014), the current findings suggest that greater exposure might enable formation of cross-ethnic friendships, which are then the more proximal predictors of social ingroup overlap. Consistent with contact theory (Allport 1954; Brown and Hewstone 2005; Pettigrew 1998; Pettigrew and Tropp 2006), cross-ethnic friendships serve as a mechanism through which multiethnic settings enable youth to identify with fairly separate groups. Thus, the extent to which one perceives divergent social ingroups may be contingent upon both opportunities for, and the development of, cross-ethnic friendships.

Exploratory analyses suggested that the association between cross-ethnic peers at school and cross-ethnic friendships, and the indirect effect of cross-ethnic friendships, was strongest for Asian American youth. These findings corroborate adult studies suggesting ethnic group differences in social ingroup overlap (Brewer et al. 2012), underscoring the need to investigate group differences further in future research. It is important to know why exposure to cross-ethnic peers was especially predictive of the development of cross-ethnic friendships among Asian American youth. Interestingly, Asian American students' friendship groups tend to be particularly segregated (Chen and Graham 2015; Currarini et al. 2010), and yet they report their cross-ethnic friendships as especially personally valuable (Currarini et al. 2010). Thus, although relatively rare, close relationships with cross-ethnic peers are particularly impactful for Asian American youth.

Our study provides insight into salient groups with which young adolescents identify, and the stability of such groups, over a one-year span. Consistent with past research (Douglass et al. 2014; French et al. 2006), ethnic identification was rated as highly important, particularly among African American/Black and Latino youth. Mean ratings of other social ingroups were also relatively high, suggesting that groups based on interests, activities, and religion are also central during middle school. These types of groups likely foster close relationships, as well as common preferences, beliefs, and experiences among their members (e.g., Dworkin et al. 2003; Furrow et al. 2004). In spite of their importance at each time point, affiliations with specific social groups are not necessarily permanent or long-lasting. More than half of youth in this sample changed at least one social ingroup between seventh and eighth grade. These results highlight the fluidity of identification and exploration of a variety of social groups and identities, thereby providing a new way of conceptualizing how adolescents come to see themselves as members of not only one social entity or unit, but of multiple groups.

Further research is needed in several areas to address limitations of the methods and analytic approach in the current study. Regarding our measure of social ingroup overlap, information about ingroups was collected differently for ethnic group (i.e., forced-choice based on a list of 13 options) than for the other social groups (i.e., open-ended), and as such, this measure may not fully capture the salience of ethnic identification. Future studies should assess whether ethnic self-categorization emerges as one of the spontaneous social self-definitions. The divergence of social groups with which youth identify, and its predictors, should also be further examined. Other social-contextual predictors, such as neighborhood diversity or academic tracking, may also account for greater divergence and should be explored in future studies. Ultimately, analyses of various social-contextual factors ought to be conducted using multilevel modeling. Given our main focus on mediational analyses, the limited number of schools ($n = 13$), and the limited range of potentially meaningful school-level indicators, such analytic methods were precluded in the current investigation. In addition, longer-term longitudinal data (e.g., extending into the beginning of high school) would elucidate how much social ingroups and their overlap change as a function of a new social environment and relationships. For instance, exposure to greater diversity has been shown to be linked with a lower proportion of cross-ethnic friendships shortly after the transition to middle school (Munniksma et al. 2016), so it would be important to understand how social ingroup overlap is affected during school transitions. Finally, although our theoretical presumption was that close relationships inform the degree to which one's multiple groups are seen as overlapping (Roccas and Brewer 2002), cross-lagged panel analyses using multiple waves of data would elucidate the directionality of such associations.

Conclusion

Our findings bolster the assertion that multiethnic school contexts provide critical opportunities for youth from different backgrounds to interact, make friends, and connect in group settings. Classroom and extracurricular settings promoting collaboration and shared interests (e.g., through

working with peers from different ethnic backgrounds on a project) are particularly likely to facilitate the formation of divergent, inclusive social ingroups in middle school. The current results highlight the opportunities multiethnic middle schools provide for young adolescents to connect and befriend one another across ethnic lines, and to foster social identities that can blur the lines between ingroups and outgroups. The present analyses provide a dynamic and social-contextually sensitive conceptualization of the development of adolescents' social ingroups that complements prior work focusing on the development of single social ingroups and identities (e.g., Davis and Kiang 2015; French et al. 2006). Supplementing research examining the overlap of multiple social ingroups at one time point (e.g., Brewer et al. 2012; Brewer and Pierce 2005; Knifsend and Juvonen 2014), to our knowledge this study is the first to examine the change in the overlap of multiple social ingroups over a one-year span in early adolescence.

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Author Contributions CK conceived of the current study, participated in its design, conducted the main analyses, and wrote the first draft of the manuscript. AB conceived of the current study, participated in its design, analyses, and interpretation of the data, as well as contributed to the write-up of the manuscript. As the co-principal investigator of the larger UCLA MSDP Project, JJ participated in the study design and interpretation of the data, as well as contributed to the write-up of the manuscript. All authors approved the final manuscript.

Conflicts of Interest The authors report no conflict of interests.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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