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Considering Friends Within the Context of Peers in School for the Development of Ethnic/Racial Identity

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Abstract

The importance of ethnicity/race for adolescents' identity (i.e., centrality), and how that importance changes over time, may in part be a function of the social contexts that they inhabit. Although centrality has shown to be an adaptive component of ethnic/racial identity, little is known about how centrality changes during adolescence in relation to these social contexts. The current study examined the role of same-ethnic/racial peers and friends in the longitudinal development of ethnic/racial identity centrality. Drawing on four waves of data over 2 years collected with a diverse sample of 350 adolescents ($M_{\text{age at W1}} = 15.2$; 69 % female), the findings indicated that when adolescents had a greater proportion of same-ethnic/racial friends, they reported feeling that their ethnic/racial identity was more central to their sense of self six months later. However, this effect was strongest among adolescents with a low proportion of same-ethnic/racial peers in school, and weakest among adolescents with a high proportion of same-ethnic/racial peers in school. The implications of these findings for our understanding of the joint effects of peer and friend diversity in relation to ethnic/racial identity are discussed.

Keywords

Adolescence; Ethnic-racial identity; Friends; Peers

Introduction

The ethnic/racial diversity of the youth population in the United States is rapidly growing (Colby and Ortman 2015), and in turn ethnic/racial identity is an ever-salient component of

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Authors' Contributions SD participated in the study's conception and design, conducted the analyses, and led the drafting of the manuscript. SM participated in the interpretation of the data and helped draft the manuscript. TY designed the larger study from which data were drawn, participated in the conception and interpretation of the data, and provided feedback on the manuscript. All authors read and approved the final manuscript.

Conflicts of interest The authors report no conflict of interests.

Ethical Approval All procedures for the current study were approved by the Institutional Review Boards of Fordham University, Princeton University, and the New York City Department of Education.

Informed Consent Active parental consent was sought for participants in the current study, who were under the age of 18. Additionally, signed assent was obtained for all participants.

normative youth development (Umaña-Taylor et al. 2014). Schools are already reflecting these demographic changes; as of the fall of 2014, non-Hispanic White students were no longer the majority in U.S. public schools (U.S. Department of Education 2014). Research has long attempted to capture experiences of ethnic/racial representation in schools; however, in order to fully understand the impact of representation in schools on an individual, it may be necessary to examine more proximal processes taking place within that context, such as friendships (Graham et al. 2014). Therefore, the current study examines the concurrent influence of the ethnic/racial composition of friendships embedded within the peer ethnic/racial composition of schools on changes over time in ethnic/racial identity centrality among adolescents. While *friends* are defined as individuals with close relationships (Hartup 1992), *peers in school* are defined as all available peers whom adolescents have exposure to as a result of the shared school context (Thrupp et al. 2002).

Ethnic/Racial Identity

Ethnic/racial identity includes a broad array of constructs that capture how individuals think and feel about their ethnic/racial heritage (Umaña-Taylor et al. 2014). Understanding how ethnic/racial identity changes over time is based on developmental theories that discuss the degree to which individuals *explore* their ethnic/racial identity and make a *commitment* to this aspect of their identity (Erikson 1968; Marcia 1966; Phinney 1989). Drawing on this theoretical foundation, there is a large and robust empirical literature documenting these processes of ethnic/racial identity development, as well as *how, why, under what conditions, and for whom* this development occurs (for a review of the literature, see Rivas-Drake et al. 2014a; b). In the current study, we focus on one component of ethnic/racial identity *content* proposed in the multidimensional model of racial identity (MMRI; Sellers et al. 1998): centrality. Drawing in part on social identity theory (Tajfel and Turner 1986), centrality captures the degree to which individuals feel that their ethnicity/race is important to them. Although the MMRI and its dimensions are not explicitly focused on developmental processes of ethnic/racial identity, centrality has proven to be highly consequential for youth development and outcomes. For example, research has shown that centrality is linked with positive academic and mental health outcomes among youth (Fuligni et al. 2005; Sellers et al. 1998), and that high centrality can buffer the negative psychological and academic consequences of discrimination among adolescents (Chavous et al. 2008; Seaton 2009; Thomas et al. 2009). Despite the influence of centrality on key developmental outcomes, the majority of research in this area is cross-sectional (Rivas-Drake et al. 2014a; b). To our knowledge, no study has examined changes in centrality across high school. As a result, very little is known about if or how centrality changes during adolescence.

Should we expect developmental changes in centrality during adolescence? Neither the MMRI nor social identity theory offer developmental hypotheses regarding prescribed, normative changes in ethnic/racial identity content. However, Sellers et al. (1998) acknowledge that ethnic/racial identity content is not immutable, and may change over time as a result of developmental forces. Scholars have long recognized that increasing cognitive complexity allows adolescents to engage with identity *processes* during adolescence in qualitatively different ways than in childhood (Erikson 1968). However, there are also clear parallels between the advanced cognitive skills such as self-reflection and metacognition that

are emerging during adolescence (Quintana 1998) and the ability to consider the importance of one's ethnic/racial identity to their overall sense of self (i.e., centrality). As such, these developmental changes may also underpin changes in centrality.

Scholars have also acknowledged that centrality may change as a result of significant ethnic/racial life events (Shelton and Sellers 2000). Adolescence is also marked by increasing social awareness (Erikson 1968; Quintana 1998), and the transition into high school (i.e., ninth grade, for most students in the U.S.) means that adolescents are also thrust into new social environments (Benner and Graham 2006). Adolescents typically attend high schools that are larger and more ethnic/racially diverse than their middle schools (Frankenberg and Orfield 2007; Orfield 2001). As such, the beginning of high school can be a consciousness-raising experience with respect to ethnic/racial identity (French et al. 2000). Indeed, Cross (1971) suggested that the importance of ethnicity/race may increase as individuals encounter significant racial experiences and reflect on the meaning of their ethnicity/race. Therefore, centrality may undergo changes in the early years of high school, as adolescents are adjusting to this potentially new ethnic/racial context. In the current study we utilize four waves of data to examine changes in centrality among a diverse sample of adolescents over the first 2 years of high school. We examine this change in relation to the ethnic/racial composition of two important social contexts for adolescent development: peers in school settings and friendships.

Peers in Schools and Friends

Schools are prominent, influential settings for youth development (Duncan and Raudenbush 1999), and the ethnic/racial composition of schools is recognized as an important contextual feature for youth development (Eccles and Roeser 2011). In part, school composition is important because of the peer processes that result as a function of such composition (Thrupp et al. 2002). In the current study, peers are conceptualized as individuals of approximately the same age, whom adolescents have exposure to as a result of a shared context but do not necessarily have a relationship with (i.e., "ambient peers" and "acquaintances;" Price and Ladd 1986; Thrupp et al. 2002). Therefore, as others have done, we operationalize the ethnic/racial composition of peers as the ethnic/racial composition of students in a given school (e.g., Kiang et al. 2010). Previous research suggests that attending a school with a highly diverse ethnic/racial peer group has many psychological benefits. For example, middle school students in schools and classrooms with diverse peers report lower peer victimization than students who attend more segregated schools and learn in more segregated classrooms (Juvonen et al. 2006). Additionally, qualitative work has demonstrated that ethnicity/race can spontaneously become a salient and frequent topic of conversation among peers (Pollock 2004). Although research indicates that the ethnic/racial composition of peers in adolescents' schools is a meaningful aspect of their environment, research has not considered the influence of peer ethnic/racial composition on centrality.

Youth have little to no control over the ethnic/racial composition of peers in their schools, since neighborhoods of residence and educational policies determine these demographics. However, the composition of peers in school does provide adolescents with opportunities to

exert agency in the selection of their friendships. For example, in schools with few to no same-ethnic/racial peers, adolescents do not have opportunities to form same-ethnic/racial friendships. On the other hand, in diverse school settings, adolescents are afforded opportunities to form both same and different ethnic/racial friendships. Therefore, in conjunction with the ethnic/racial composition of peers in school, we considered the influence of ethnic/racial composition of friendships.

In the current study, friends are defined as individuals with an existing relationship, and with whom one feels a sense of closeness. During adolescence, friendships are proximal and crucial contexts for development (Bagwell and Schmidt 2011). The development of friendships in high school may have consequences for current and future psychological outcomes (Bukowski et al. 2009; Marion et al. 2013), as well as identity formation (Jones et al. 2014). Recent research has suggested that the ethnic/racial composition of friendships in particular is highly consequential for youth. For example, adolescents with more same-ethnic friendships reported feeling more positively about their ethnic/racial identity (Graham et al. 2014). However, research has not examined the influence of friendship ethnic/racial composition on changes in centrality over time.

Friends in the Context of Peers

The influences of peers in school and friends function concurrently, and are necessarily related to each other (Hallinan and Smith 1985). However, these social contexts also vary considerably: by definition, the quantity of direct contact, the qualitative content of that contact, the agency adolescents have in initiating and maintaining relationships, and the degree of intimacy with the general population of peers in school are very different than with friends. Because of these important differences, the influence of peers in school and friends on centrality may also differ. Indeed, perspectives from intergroup contact theory (Pettigrew and Tropp 2006) suggest that mere exposure to people functions differently than close, prolonged, and interactive experiences with people of varying ethnic/racial backgrounds. While the former better characterizes experiences of peers in schools, the latter better characterizes experiences of friendship. Therefore, it is likely that being exposed to peers of different ethnic/racial backgrounds and being friends with people of different ethnic/racial backgrounds is differentially influential for the development of centrality. Below, we outline the different bodies of literature which suggest that the ethnic/racial composition of peers in school and friends may be differentially related to changes in centrality.

First, research suggests that the proportion of same-ethnic-/racial peers would be negatively related to growth in centrality. According to self-categorization theory, greater diversity in the ethnic/racial composition of a peer group (i.e., lower availability of same-ethnic/racial others) would make individuals more aware of their own ethnicity/race (Turner et al. 1987). Relatedly, scholars examining experiences of “solo status” have argued that minority status at a structural level increases the importance of one’s ethnicity/race to self-construal. For example, African American women reported higher levels of centrality during an experimental manipulation when they anticipated being the only minority participant versus being in a racially balanced group (Sekaquaptewa et al. 2007). Thus, when adolescents are in the numerical minority with respect to ethnicity/race, they may confront and consider

their ethnic/racial identity more frequently, in turn making it a more important part of their identities. In comparison, when adolescents share such a social identity with many of their peers in schools, their ethnic/racial identity may become less important to them over time. Therefore, it is likely that the proportion of same-ethnic/racial peers in school is negatively related to growth in adolescents' centrality over time.

Second, research suggests that the proportion of same-ethnic/racial friends would be positively related to growth in centrality. In contrast to their available peers in school, adolescents exert agency over their friendship choices; the active decision to interact and spend time with those who are ethnically/racially similar or different may reflect adolescents' value system and sense of self (Kiang et al. 2011). Prior research has suggested that seeking out friends who share an ethnic/racial background is normative and developmentally healthy for minority youth (Tatum 2003). In addition to ethnic/racial considerations as a basis for selection, friends convey important messages about what it means to be a member of an ethnic/racial group, and this socialization influences how adolescents form an ethnic/racial sense of self (Hughes et al. 2011). Consistent with this perspective, research suggests that youth who share an ethnic/racial background may be more likely to discuss aspects of their ethnic/racial heritage (e.g., shared socio-cultural context, similar family experiences), engage in ethnic/racial behaviors (e.g., participating in cultural traditions), and seek support for ethnic/racial stressors (e.g., discrimination) (Haslam et al. 2005; Kao and Joyner 2004; Syed and Juan 2012). Indeed, Kiang and colleagues found that Chinese American adolescents were more likely to express their ethnic/racial identity when with same-ethnic/racial friends compared to Caucasian peers, and that this expression was a function of feeling more ethnic/racial support from these friends (Kiang et al. 2007). In a separate study, Kiang and colleagues also found that Asian American adolescents who had more same-ethnic/racial friends also reported that being Asian was more important for their identity (Kiang et al. 2011). Taken together, this research suggests that same-ethnic/racial friends may increase the importance of ethnicity/race for adolescents through both explicit and implicit socializing experiences.

Little research has examined the ethnic/racial composition of peers in school and friends in tandem, but the limited evidence available suggests that the importance of friends depends in part upon peer demographics at the school level (Kawabata and Crick 2011; Yip et al. 2010). Therefore, consideration of these competing hypotheses presents two distinct possibilities.

First, it is possible that the positive effect of same-ethnic/racial friends on centrality is stronger than the negative effect of same-ethnic/racial peers in school on centrality; in this case, peers in school would serve to diminish the positive effect of friendship on centrality. For example, an Asian American adolescent with a high proportion of Asian American friends who was attending a school with a high proportion of Asian American peers would have slower growth in centrality than an Asian American adolescent with a high proportion of Asian American friends who was attending a school with a low proportion of Asian American peers. Second, it is possible that the negative effect of same-ethnic/racial peers in school on centrality is stronger than the positive effect of same-ethnic/racial friends on centrality; in this case, friends would serve to diminish the negative effect of peers on centrality. For example, a Latino adolescent attending a school with a high proportion of

Latino peers would have slower decline in centrality when they had a high proportion of Latino friends than when they had a low proportion of Latino friends. Given that friendships are a more proximal context than peers in school, and proximal processes should have a stronger impact than distal contexts (Bronfenbrenner 1979), we would expect that the ethnic/racial composition of friends should be a stronger influence on centrality than the ethnic/racial composition of peers in school. Therefore, we expected that the influence of same-ethnic/racial friends on centrality would be less positive among adolescents with many same-ethnic/racial peers in school compared to adolescents with few same-ethnic/racial peers in school.

The Current Study

The current study examines how the ethnic/racial composition of schools and friends relate to changes in ethnic/racial identity centrality over the first 2 years of high school among a diverse sample of Asian, Latino, White, and Black adolescents. The inclusion of these multiple ethnic/racial groups is supported by research indicating that ethnic/racial identity is relevant, psychologically important, and changes over time among ethnic/racial minority and majority groups (Syed and Azmitia 2008; Syed and Juang 2014). In order to first understand how peer and friendship contexts operate, we examined possible changes in these settings. Given that school demographics are largely stable from 1 year to the next, we expected that the proportion of same-ethnic/racial peers in school in adolescents' high schools would not change significantly across 9 and 10th grade, thus indicating a stable (i.e., between-person) effect. Consistent with research showing that friendships change over the course of adolescence (Marsh et al. 2006), we also expected that the proportion of adolescents' same-ethnic/racial friends would change across 9 and 10th grade, thus indicating a time-varying (i.e., within-person) effect. In turn, the primary aim of the study was to examine how stable peer and varying friendship contexts influence centrality over time. First, we expected that that the proportion of same-ethnic/racial friends would be positively related to centrality, but that the proportion of same-ethnic/racial peers in school would be negatively related to centrality. However, we also expected that the effect of friendship on centrality would be stronger than the effect of peers such that peers would serve to diminish the positive effect of friendship on centrality.

Methods

Participants

Participants included in this study are a subset of 350 adolescents ($M_{age} = 15.20$, $SD = .67$, 224 females) drawn from the Youth Experiences Study (Yip et al. 2013; Yip 2014) who self-identified as Asian (including Asian or Asian American; 38 %), Hispanic (including Hispanic or Latino; 26.6 %), White (23.7 %), or Black (including Black, African American, or West Indian; 11.7 %). The majority of these participants (82.3 %) reported being born in the U.S.; of those born outside of the U.S., age of immigration ranged from 6 months to 14 years, and the largest proportion emigrated from China (7 %). With respect to maternal education, participants reported that their mothers completed high school or less (22 %), completed some college or vocational school (7 %), graduated from a two-year college (5 %), graduated from a 4-year college (14 %), or completed a graduate degree (16 %).

Many participants did not know their mothers' highest level of education (36 %). With respect to paternal education, participants reported that their fathers completed high school or less (25 %), completed some college or vocational school (7 %), graduated from a 2-year college (3 %), graduated from a 4-year college (11 %), or completed a graduate degree (12 %). Many participants did not know their fathers' highest level of education (42 %). As part of the survey procedure, participants indicated their middle school; from students who provided valid information ($n = 329$), 80 middle schools were identified (i.e., could be confirmed), of which 62 schools had publically available information on the ethnic/racial composition of students. On average, the proportion of same-ethnic/racial peers in middle school was 40.66 % ($SD = 22.50$ %, range = 2.6–93.5 %). There was a significant difference in the proportion of same-ethnic/racial peers in *middle school* based on high school attendance [$F(3, 304) = 13.31$, $p < .001$] such that adolescents in the predominantly Latino school came from middle schools where they had a higher proportion of same-ethnic/racial peers ($M = .55$) than participants in the predominantly Asian ($M = .43$), predominantly White ($M = .36$), and heterogeneous ($M = .35$) school. Overall, this is consistent with the high levels of heterogeneity in academic trajectories that characterizes the NYC public education system (i.e., school choice, out-of-zone attendance, etc.), but also indicates that there were significant differences among our sample in the availability of same-ethnic/racial peers in middle school.

Procedure

Participants in the larger study ($n = 405$) were recruited from five similarly-sized and academically comparable public high schools of varying ethnic/racial composition in a large urban area. These included a predominantly Asian school, a predominantly White school, a predominantly Hispanic school, and two racially heterogeneous schools. In light of the relative diversity of the NYC area, “predominantly” is defined by a single group representing at least 40 % of the school's population. In the heterogeneous schools, no single group represented more than 40 % of the school's population (see Table 1 for the ethnic/racial composition of each school). The percentage of students in poverty at these schools, as indicated by qualifying for free/reduced lunch, ranged from 13.6 to 58.9 % ($M = 34.9$ %, $SD = 15.11$).

Of the initial five schools recruited for the study, one of the heterogeneous schools dropped out of the study after the first year due to administrative changes precluding longitudinal analyses; therefore, these participants ($n = 36$) were not included here. Additionally, a small number of participants in Cohort 1 ($n = 19$) were excluded from the current study because their self-identification (e.g., “Mixed”) could not be matched to one of the major ethnic/racial categories that are reported by the Department of Education (i.e., Black, Hispanic, Asian, or White). Therefore, the proportion of same-ethnic/race students in each school could not be determined for these participants.

All freshmen in the targeted schools were invited to participate in the study. Students who returned both parental consent and assent completed surveys after school in small groups (ranging from 10 to 30 students) led by a research assistant once every 6 months. Recruitment took place across 2 years: participants in Cohort 1 ($n = 121$) were followed for

3 years, resulting in six waves of data; participants in Cohort 2 ($n = 248$) were followed for 2 years, resulting in four waves of data. W1 and W2 were collected during the fall and spring of 9th grade, respectively, and W3 and W4 were collected in the fall and spring of 10th grade. For Cohort 1, W5 and W6 were collected in the 11th grade; these data were not included in the current analyses.

Due to the longitudinal nature of the study, there was moderate attrition of participants; 93 % of participants completed W2, 85 % completed W3, and 82 % completed W4. Reasons for attrition included moving out of the school system, moving out of the country, and not responding to follow-up recruitment attempts. There were no significant differences on any of the key study variables at W1 between participants who completed all waves of the study and those who did not. Additionally, there were no significant differences between the two cohorts in any of the key study variables during the first four waves, when data were available from both cohorts.

Measures

Demographic Information—At W1, participants reported gender (0 = female; 1 = male) and nativity status (0 = non-U.S. born; 1 = U.S. born). Participants' self-reported ethnic/racial self-identification was also used to determine ethnic/racial minority status (0 = ethnic/racial minority, including Asian, Hispanic, or Black; 1 = White).¹

Ethnic-Racial Identity Centrality—At all waves (W1–W4), the centrality subscale of the MIBI (Sellers et al. 1997) was adapted for a multi-ethnic sample. The centrality subscale includes seven items measuring the importance of ethnicity/race to overall self-concept (e.g., “In general, my race/ethnicity is an important part of my self-image”). Participants responded on a 7-point scale ranging from “strongly disagree” to “strongly agree” where higher scores indicate more agreement. Cronbach's alphas ranged from .70 to .77.

Proportion of Same-Ethnic/Racial Peers in School—Publically available data on the Department of Education website about the percentage of Asian, Hispanic, White, and Black students in each school were gathered for each year of the study and matched to the self-identification of each participant (i.e., if a student self-identified as Black, the proportion of Black students attending that student's school in that year was used). Because the multi-ethnic sample was distributed across schools with multi-ethnic populations, the proportion of same-ethnic/racial peers is not a static feature of the school, but rather a dynamic interaction of adolescents from a particular ethnic/racial group in a particular school. As a result, each participant had unique values that indicated their proportion of same-ethnic/racial peers in school during 9th grade (i.e., W1–2) and 10th grade (i.e., W3–4); for youth who shared an ethnic/racial group and who attended the same school, these values were the same. There were 28 unique values of same-ethnic/racial peers in school across the sample, and the range of the variable was .07 to .68 (i.e., 7–68 %, out of a total possible range from 0 to 100 %).

¹This covariate was included to account for possible differences based on societal status. This approach was more statistically powerful than separating each ethnic/racial group in the sample, and was more parsimonious since we did not have expectations about specific differences between ethnic/racial minority groups.

Proportion of Same-Ethnic/Racial Friends—At all waves (W1–W4), participants were asked to list the initials and ethnicity/race of their five closest friends in an open-ended format. Consistent with previous research (e.g., Ennett et al. 2006), participants were asked to list five friends in order to limit the responses to close friendships (Hallinan 1980), and due to time constraints in large-scale data collection. Also consistent with previous research, participants on average reported just under five close friends ($M_{W1-W4} = 4.47$, $SD_{W1-W4} = .99$, range $W1-W4 = 1-5$; Ennett et al. 2006; Joyner and Kao 2000). The prompt did not specify that the friends had to attend the same school; therefore friendship nominations were not limited to the adolescent's school context. Mirroring the reporting categories of the Department of Education (i.e., Asian, Hispanic, White, and Black), open-ended responses were coded into larger pan-ethnic/racial categories. Two research assistants independently coded these responses ($kappa = .92$), and discrepancies were resolved by the first author. For each participant, the ethnic/racial category of each friend was then coded as belonging to the same-ethnic/racial group (1) or a different ethnic/racial group (0); the number of friends belonging to the same ethnic/racial group was summed and divided by the total number of reported friends, resulting in the proportion of same-ethnic/racial friends. The range of the variable for the sample was .00 to 1.00 (i.e., 0–100 %, representing the total possible range).

Results

Preliminary Data Screening

Correlations among all study variables are reported in Table 2. Preliminary data screening was used to examine whether the proportion of same-ethnic/racial peers in school and friends changed over time. With respect to the proportion of same-ethnic/racial peers in school, the correlation between 9th and 10th grade was very high ($r = .99$), which was expected since participants attended the same school in those 2 years. The average change in the proportion of same-ethnic/racial peers in school was less than 1 % ($M = -.5$ %), and the complete range of this change across adolescents was ± 3 %. Therefore, we concluded that the peer composition of adolescents' high schools should be considered a time-invariant predictor, and the proportion of same-ethnic/racial peers in school assessed in 9th grade was used in all subsequent analyses.

In contrast to peers, there was more variability in friendship compositions over the 2 years and correlations among the proportion of same-ethnic/racial friends across waves were more modest, ranging from .61 to .76. A repeated measures ANOVA indicated that the proportion of same-ethnic/racial friends differed significantly across time [$F(3, 780) = 7.988$, $p < .001$]. Descriptively, the average change in proportion of same-ethnic/racial friends across time was 4 %, and the range was ± 100 %, indicating that while some adolescents experienced only minor changes in their friendship networks, others reported a complete overhaul of their friendships from the 9th to 10th grades while remaining in the same school settings. Consistent with our hypothesis, adolescents' proportion of same-ethnic/racial friends changed over the first 2 years of high school, and as such should be considered a time-varying predictor.

Analytic Plan

Unconditional Latent Growth Curve Model—A latent growth curve model (LGCM) for centrality was conducted in Mplus Version 6 (Muthén and Muthén 2010) using a structural equation modeling framework. In the current study, we applied a structural equation modeling approach to growth modeling by using the four measurements of centrality (W1–W4) as indicators of the latent intercept and growth (i.e., slope) (Muthén and Muthén 2010). In the unconditional LGCM, in which only the indicators of the latent intercept and slope are used, the significance and variance of the slope determine whether there is average growth in centrality across the sample, and whether this growth differs between participants. Specifically, a significant slope would indicate that, on average, there is growth in centrality across Waves 1–4. A significant variance of the slope would indicate that there are significant individual differences in the extent to which adolescents' centrality changes over time. The rate of missing data for variables in the current study was 8.8 %; all missing data were handled using full information maximum likelihood.

Conditional LGCM—In order to address the primary aims of the study, a conditional LGCM was conducted in which variables were added to the model to predict centrality over time (Fig. 1). We were interested in understanding (a) how the stable peer ethnic/racial composition influenced centrality over time, (b) how the time-varying friendship ethnic/racial composition influenced centrality over time, and (c) how these two contextual factors interacted to influence centrality over time. Therefore, we conducted a growth model with a time-invariant covariate (i.e., peers), and time-varying covariates (i.e., friends) with random slopes (Muthén and Muthén 2010; see Fig. 1). The details of this model are explained below.

Peers—The influence of peer ethnic/racial composition on centrality over time was treated as a time-invariant contextual factor due to the extremely high stability in the proportion of same-ethnic/racial peers in school between the 9th and 10th grade. Therefore, the intercept and slope for centrality were regressed on the proportion of same-ethnic/racial peers in school at W1 (Fig. 1, Path 5 and 6, respectively). In this approach, the time-invariant effect of same-ethnic/racial peers in school is treated as a fixed, or *between-person*, effect in the model (Muthén and Muthén 2010). Therefore, these effects capture whether adolescents who attended schools with a low proportion of same-ethnic/racial peers in school have different patterns of change in centrality than adolescents who attended schools with a high proportion of same-ethnic/racial peers in school.

Friends—The influence of friend ethnic/racial composition on centrality over time was treated as a time-varying contextual factor because the proportion of same-ethnic/racial friendships were only modestly correlated across 9th and 10th grade. In the Mplus LGCM framework, the effect of time-varying predictors in a growth model is treated as a random effect that represents *within-person* variation in the influence of time-varying covariates on outcomes (Muthén and Muthén 2010). In the current model, the manifest centrality variables were regressed on the proportion of same-ethnic/racial friends 6 months earlier (i.e., centrality_{W_x} on same-ethnic/racial friends_{W_{x-1}}), resulting in three lagged pathways (Fig. 1, Paths 1–3). Consistent with a standard multilevel modeling approach, each of these paths contribute equally to the random slope of centrality on friend ethnic/racial composition (Fig.

1, Path 4) which represents the within-person effect of centrality on same-ethnic/racial friends over time. Therefore, this effect captures how friendship composition is related to centrality six months later, taking into account that friendship composition is also changing over time. As an example, this effect enables us to capture how an adolescents' centrality is influenced over time if he or she has a low proportion of same-ethnic/racial friends in the fall of 9th grade (i.e., at W1), and then has a high proportion of same-ethnic/racial friends in the spring of 9th grade (i.e., at W2).

Friends in the Context of Peers—A final goal of the current study was to examine how the influence of friend ethnic/racial composition varies based on the peer ethnic/racial composition of an adolescents' school. To examine this effect, the random slope of centrality on friend ethnic/racial composition was regressed on the time-invariant effect of peer ethnic/racial composition (Fig. 1, Path 7). This captures a cross-level interaction that includes both within- and between-person effects; that is, it allows us to examine whether the influence of same-ethnic/racial friends on changes in centrality (i.e., within-person, random effect) varies based on the proportion of same-ethnic/racial peers in school (i.e., between-person, fixed effects; Muthén and Muthén 2010). Therefore, we are able to examine whether having a certain proportion of same-ethnic/racial friends influences centrality differently for adolescents who attend a school with a low proportion of same-ethnic/racial peers compared to adolescents who attend a school with a high proportion of same-ethnic/racial peers.

Covariates—In addition to the conceptual relations of interest, a number of covariates were included in the model. Based on previous research and characteristics of the current sample, gender, nativity status, and ethnic/racial minority status were included (see Fig. 1, Paths 8–13); because these are demographic characteristics of participants, they were treated as time-invariant covariates predicting the intercept and slope of centrality. Additionally, the concurrent effects of friendship ethnic/racial composition on centrality were included in the model (i.e., W1 proportion of same-ethnic/racial friends predicting W1 centrality; W2 proportion of same-ethnic/racial friends predicting W2 centrality; W3 proportion of same-ethnic/racial friends predicting W3 centrality; W4 proportion of same-ethnic/racial friends predicting W4 centrality). Because the concurrent effects were included in the model to isolate the predictive effect of friendship ethnic/racial composition on centrality, concurrent proportions of same-ethnic/racial friends are modeled as time-invariant covariates on the manifest variables of centrality, and therefore each of the paths produces a separate between-person estimate.

Unconditional LGCM

Results from the unconditional LGCM included a non-significant slope of centrality ($b = -.007$, $SE = .019$, $p = .69$) and significant variance around the slope [$\text{var}(b) = .04$, $SE = .01$, $p < .001$]. The non-significant slope suggests that in the sample as a whole, there was not a significant change in centrality across the four waves of data. However, the significant variance suggests notable individual differences in the patterns of longitudinal change in centrality between adolescents; that is, it suggests that among some adolescents, centrality is changing over time.

Conditional LGCM

To explore these individual differences, a conditional LGCM including between-person effects was conducted. Results from the covariates included in the LGCM are reviewed first. Neither gender nor nativity status were significant predictors of the intercept or slope for centrality, indicating that initial levels and change in centrality did not significantly differ between males and females, nor between adolescents born in the U.S. and adolescents born outside the U.S. Ethnic/racial minority status was a significant predictor of the intercept but not the slope for centrality (Fig. 2); these results indicate that in the fall of 9th grade, White adolescents reported lower centrality on average than ethnic/racial minority adolescents; however, the rates of change in centrality over 9th and 10th grade did not differ between White and ethnic/racial minority adolescents. Finally, the proportion of same-ethnic/racial friends did not significantly predict concurrent centrality at any wave.

With respect to the effects of interest, the proportion of same-ethnic/racial peers in school was a significant between-person predictor of the intercept ($b = 1.36$, $SE = .27$, $p < .001$) and slope ($b = -.29$, $SE = .14$, $p < .05$; Fig. 2) for centrality. The significant effect for the intercept indicates that adolescents with a high proportion of same-ethnic/racial peers in school had higher centrality in the fall of 9th grade than adolescents with a low proportion of same-ethnic/racial peers in school. The significant effect for the slope indicates that adolescents with a high proportion of same-ethnic/racial peers in school decreased in centrality at a faster rate over 9th and 10th grade than adolescents with a low proportion of same-ethnic/racial peers in school. Additionally, the random slope of same-ethnic/racial friends was a significant within-person predictor ($b = .52$, $SE = .04$, $p < .001$; Fig. 2) for centrality. These results indicate that when an adolescent had a high proportion of same-ethnic/racial friends, he or she had higher centrality 6 months later compared to when he or she had a low proportion of same-ethnic/racial friends.

Finally, the proportion of same-ethnic/racial peers in school was a significant between-person predictor of the within-person random effect of the proportion of same-ethnic/racial friends for centrality ($b = -.50$, $SE = .21$, $p < .05$; Fig. 2). These results indicate that there was a significant interaction between same-ethnic/racial peers in school and same-ethnic/racial friends over time for growth in centrality over time. Specifically, the results indicate that same-ethnic/racial peers in school diminish the positive effect of same-ethnic/racial friends on growth in centrality.

We use a number of figures to illustrate these findings. First, Fig. 3 depicts the within-person effect of same-ethnic/racial friends at a given point in time on centrality 6 months later, differentiated by low (7 % same-ethnic/racial peers in school; the lowest proportion represented in the sample) and high (64 % same-ethnic/racial peers in school; the highest proportion represented in the sample) school peer composition. While the effect of same-ethnic/racial friends for centrality is always positive, it is stronger among adolescents with fewer same-ethnic/racial peers in school than among adolescents with more same-ethnic/racial peers in school. Indeed, simple slope analyses indicate that among adolescents with few (i.e., 7 %) same-ethnic/racial peers in school, a 10 % increase in the proportion of same-ethnic/racial friends is associated with a .05 increase in centrality 6 months later. Among adolescents with many (i.e., 64 %) same-ethnic/racial peers in school, a 10 % increase in the

proportion of same-ethnic/racial friends is associated with a .02 increase in centrality 6 months later (Table 3). Therefore, the influence of increasing same-ethnic/racial friends on subsequent change in centrality is more than twice as strong among adolescents with a low proportion of same-ethnic/racial peers in school than among adolescents with a high proportion of same-ethnic/racial peers in school. For example, as shown in Table 3, among adolescents with a low proportion of same-ethnic/racial peers in school, having 60 % same-ethnic/racial friends at any given time point results in a .30 increase in centrality 6 months later; among adolescents with a high proportion of same-ethnic/racial peers in school, having 60 % same-ethnic/racial friends results in just a .12 increase in centrality 6 months later.

In order to examine how these effects play out across the full spectrum of time captured in the study (i.e., 9th and 10th grade), Fig. 4 depicts growth in centrality across all four waves based on the three modal patterns of friendship composition found in the data. Although there were many different patterns of how adolescents' friendship composition changed over time, the three modal patterns were chosen to represent typical experiences within the sample. These patterns each depict a different scenario of same-ethnic/racial friend composition at W1, W2, and W3; together, these patterns capture 10 % of the sample, which indicates the high level of variation in friendship composition over time found in the sample. Of note, because we lagged the analyses (i.e., centrality_{W_x} on same-ethnic/racial friends_{W_{x-1}}), these are the three variables that contributed to the random, within-person effect of centrality on same-ethnic/racial friends; W4 same-ethnic/racial friends was only used as a covariate. *Pattern A* represents adolescents who had high and increasing levels of same-ethnic/racial friends over time. Specifically, these adolescents reported 80 % same-ethnic/racial friends at W1, 100 % same-ethnic/racial friends at W2, and 100 % same-ethnic/racial friends again at W3. *Pattern B* represents adolescents who had relatively moderate, yet unstable levels of same-ethnic/racial friends with 40 % same-ethnic/racial friends at W1, 60 % at W2, and 40 % at W3. *Pattern C* represents adolescents who had relatively low, yet increasing proportions of same-ethnic racial friends: 20 % same-ethnic/racial friends at W1, 20 % at W2, and 40 % at W3. Figure 4 depicts the corresponding growth in centrality for each of these patterns for adolescents with a high (i.e., 64 %) versus low (7 %) proportion of same-ethnic/racial peers in school. This figure illustrates that adolescents with many same-ethnic/racial peers in school had higher centrality in the fall of 9th grade than adolescents with few same-ethnic/racial peers in school. However, the patterns of growth in centrality vary drastically. In the case of Pattern A, where the adolescent has high proportions of same-ethnic/racial friends over time, the adolescent with few same-ethnic/racial peers in school increases in centrality at a sufficiently fast rate that the initial difference disappears by the spring of 10th grade (W4). In other words, irrespective of the composition of peers in schools, by W4, all adolescents in Pattern A reported similarly high levels of centrality. In the case of Pattern B, where the adolescent has a middling proportion of same-ethnic/racial friends over time, the adolescent with few same-ethnic/racial peers in school makes some gains relative to his/her counterpart with many same-ethnic/racial peers in school, but not enough to make up for the initial difference. In the case of Pattern C, where the adolescent has relatively low proportions of same-ethnic/racial friends over time, the adolescent with few same-ethnic/racial peers in school once again shows greater growth in centrality than

his/her counterpart with many same-ethnic/racial peers in school, but still remains much lower in centrality over time.

Sensitivity Analyses

Additional analyses were conducted to assess the sensitivity of the results by examining whether the results would change with the addition of covariates to the model. Specifically, ethnic/racial identity exploration and commitment, two aspects of the developmental process of ethnic/racial identity, were added to the model as time-varying covariates (i.e., W1 exploration and W1 commitment predicting W1 centrality; W2 exploration and W2 commitment predicting W2 centrality, etc.). Additionally, the proportion of same-ethnic/racial peers in school *in middle school* was added as a time-invariant predictor of the intercept and slope for centrality. By including these controls, we were able to examine whether peer and friend composition were related to changes in centrality above and beyond (a) developmental changes in ethnic/racial identity, and (b) previous peer contexts, which may both also be related to changes in centrality.

First, results indicated that exploration was significantly and positively related to centrality at W2 only (W2: $b = .28$, $SE = .10$, $p = .007$; for W3, W4, W5, all $ps > .11$), indicating that adolescents who had explored their ethnic/racial identity also felt that their ethnicity/race was more central to their sense of self, but this relation only held true at one time point. Second, commitment was significantly and positively related to centrality at all waves (W1: $b = .67$, $SE = .17$, $p < .001$; W2: $b = .45$, $SE = .14$, $p = .002$; W3: $b = .57$, $SE = .11$, $p < .001$; W4: $b = .67$, $SE = .13$, $p < .001$), indicating that adolescents who had a stronger sense of commitment to their ethnic/racial identity also felt that their ethnicity-race was more central to their sense of self during the first 2 years of high school. Third, the proportion of same-ethnic/racial peers in school in middle school was not a significant predictor of the intercept ($b = .18$, $SE = .20$, $p = .37$) or slope ($b = -.04$, $SE = .08$, $p = .67$) of centrality, indicating that adolescents' peer composition in middle school was not related to their initial rates or growth in centrality during the first 2 years of high school. Finally, the addition of these covariates to the model did not affect the results of interest; that is, same-ethnic/racial peers in school remained a significant between-person predictor of the within-person random effect of the proportion of same-ethnic/racial friends for centrality ($b = -.73$, $SE = .21$, $p < .001$), indicating that the developmental processes of ethnic/racial identity and previous peer contexts did not account for the current findings.

Discussion

Prior work has suggested that the development of ethnic/racial identity represents an important task for adolescents, and that centrality (i.e., the importance of one's ethnic/racial group; Smith et al. 1998) both directly predicts positive outcomes (Fuligni et al. 2005; Sellers et al. 1998) and buffers the negative effects of discrimination (Chavous et al. 2008; Seaton 2009; Thomas et al. 2009) for youth. However, the development of centrality during adolescence remains largely unexplored, particularly within the contexts of same-ethnic/racial peers in schools and friends. Although peers in school and friends jointly influence adolescents, the ways in which these contexts influence centrality may differ due to their

proximity in line with prior research (Pettigrew and Tropp 2006). The current study examined the differential influence of the ethnic/racial composition of peers in schools and friends on changes in ethnic/racial identity centrality during the first 2 years of high school in a diverse sample of adolescents. Given the complexity of the research question, an unconditional latent growth curve model for centrality was conducted to determine whether there was change in centrality over time and a conditional latent growth curve model was conducted to determine the fixed effect of same-ethnic/racial peers in school, the time-varying effect of same-ethnic/racial friends, and their joint influence on centrality across the four waves of data. Although there was no significant change in centrality, on average, for the overall sample, there was significant variability in change in centrality. That is, our findings indicate that while some adolescents' centrality remains stable, many adolescents are experiencing significant changes in centrality during the first 2 years of high school. Further, those significant changes are differentially related to their proportion of same-ethnic/racial peers in school and friends. Our results indicate that while the proportion of same-ethnic/racial peers in school was negatively related to growth in centrality, the proportion of same-ethnic/racial friends was positively related to growth in centrality. Indeed, the positive effect of same-ethnic/racial friends is strongest among adolescents who attended schools with a low proportion of same-ethnic/racial peers in school. Further, regardless of peers, friends appear to be the real driving force for centrality for adolescents who have friendship networks that are at least 80 % same-ethnicity/race, pointing to not only the developmental importance of friends, but also adolescents' own agency in their development.

Peers in School

With respect to peers, our findings indicate that the ethnic/racial composition of schools remained stable for the adolescents in our sample, as most experienced year-to-year changes of less than 1 % in the proportion of same-ethnic/racial peers in school. Although unusual and drastic policy changes can result in significant and immediate changes in the ethnic/racial composition of public schools, relative consistency in the ethnic/racial composition of school settings is typical of most adolescents' experiences in high school. As a stable context, our results indicate that the proportion of same-ethnic/racial peers in school was meaningful for adolescents' centrality over time. These results suggest that the proportion of same-ethnic/racial peers in school was positively related to initial levels of centrality (i.e., intercept), and negatively related to growth in centrality (i.e., slope). Taken together, adolescents with a high proportion of same-ethnic/racial peers in school reported higher centrality during the fall of 9th grade compared to adolescents with a low proportion of same-ethnic/racial peers in school; however, these adolescents also showed a more rapid decline in centrality. Although we did not expect that adolescents in schools with a high proportion of same-ethnic/racial peers in school would report higher initial levels of centrality, it is possible that the transition to high school plays a role in this finding. Previous research has indicated that youth are very sensitive to changes in the ethnic/racial composition of their schools as they transition from middle to high school (Benner and Graham 2007, 2009); consistent with educational literature showing that youth generally transition into more diverse high schools (Frankenberg and Orfield 2007; Orfield 2001), post hoc analyses indicated that, on average, adolescents in this sample experienced a significant

decrease in the proportion of same-ethnic/racial peers from middle to high school [$t(307) = -31.55, p < .001$; $M_{\text{difference}} = -40.31\%$]. Initial assessments of centrality in this study were gathered during the fall of freshman year of high school, just after adolescents' transition into a new school setting and as students are just getting to know their peers. In schools where there are many same-ethnic/racial peers in school, a shared social identity of ethnicity/race among peers may be a way for youth to initially connect with each other, both explicitly and implicitly. Perspectives from intergroup contact suggest that coalescing around a shared identity often and most easily takes place during initial contact, when individuals are highly sensitive to intergroup divisions (Brewer 1979; Hewstone 2003). It may be that, as youth are first connecting with their peers, they are highly sensitive to a shared social category such as ethnicity/race, which in turn reflects on their own self-concept. If this was the case, we would indeed expect that adolescents with many same-ethnic/racial peers in school available would feel that their ethnicity/race was more central to their identity.

In contrast, the experience of having many same-ethnic/racial peers in school may play out very differently over time with respect to the development of centrality. Consistent with our hypotheses, we also found that the proportion of same-ethnic/racial peers in school was negatively related to growth in centrality. Optimal distinctiveness theory (Brewer 1991) suggests that when individuals share a given social identity such as ethnicity/race, they will seek out other identities to distinguish themselves from their peers. Among adolescents in schools with high proportions of same-ethnic/racial peers in school, being surrounded by many peers who share an ethnic/racial background may render this aspect of identity less and less relevant over time. In turn, while their ethnic/racial identity is becoming less central to their sense of self, other social identities that better satisfy their desire for distinctiveness may become increasingly important.

Friends

With respect to friends, our findings indicated that the ethnic/racial composition of adolescents' five closest self-nominated friends changed significantly across the first 2 years of high school. More importantly, these changes had strong developmental significance for adolescents' centrality; the proportion of same-ethnic/racial friends was positively related to centrality 6 months later, even controlling for the current proportion of same-ethnic/racial friends. These results suggest that in highly proximal and intimate contexts of friendship, ethnic/racial composition influences changes in ethnic/racial identity very differently than it does at the peer level. In considering salience (i.e., awareness of ethnicity/race, which has been conceptualized as a situational measure of centrality; Sellers et al. 1998), previous research using experience sampling methods has shown that salience is responsive to interactions with others. For example, analyses using a subset of Asian, Black, and Latino adolescents from the the larger study have shown that adolescents reported higher ethnic/racial identity salience on days when they interacted with same-ethnic/racial others (Yip 2014). Further, research has found that youth report greater exploration of and belongingness to their ethnic/racial group when interacting with same-ethnic/racial others versus different-ethnic/racial others (Kiang and Fuligni 2009). Scholars have suggested that youth whose close friends are predominantly in-group members may be more likely to have

social interactions that revolve around their ethnic/racial commonalities (Yip 2005); therefore, such interactions may facilitate adolescents' engagement with this aspect of their identity. Over time, with repeated exposure to these intimate social interactions, ethnic/racial identity may become an increasingly important aspect of one's overall identity. Preference for same-ethnic/racial others (i.e., homophily) is a principle that has long been recognized as a social catalyst (McPherson et al. 2001). Our findings extend this work to suggest that having many same-ethnic/racial friends promotes increases in centrality among adolescents.

Friends in the Context of Peers

Importantly, our results also demonstrate the importance of considering the influence of both friends and peers in school. Consistent with our hypotheses, this interaction effect indicates that the proximal effect of same-ethnic/racial friends was stronger than the effect of same-ethnic/racial peers in school; however, peers in school still played an important role. Specifically, our results indicated that the positive influence of same-ethnic/racial friends on centrality was stronger among adolescents who attended schools with a low proportion of same-ethnic/racial peers in school, and was weaker among adolescents who attended schools with a high proportion of same-ethnic/racial peers in school. These findings indicate that having a large number of same-ethnic/racial friends is most influential when same-ethnic/racial peers in school are not as available. Likewise, same-ethnic/racial friends become less influential when same-ethnic/racial peers in school are more readily available. Our findings support prior work by Kiang et al. (2011) wherein Asian American adolescents in the ethnic/racial minority in high school reported greater ethnic/racial centrality when they had more same-ethnic/racial friends. The current study extends their work in two important ways: considering adolescents of diverse backgrounds and assessing longitudinal change. Our findings can also be considered in tandem with prior work suggesting that African American adolescents with many same-ethnic/racial friends in diverse schools reported less change in ethnic/racial exploration and commitment (Yip et al. 2010). In comparing the current study with those findings, it may be that contextual influences operate differently on ethnic/racial identity development (i.e., exploration and commitment) in comparison to ethnic/racial identity content (i.e., centrality). For teachers, parents, school personnel, and in particular, school counselors, the findings of this study emphasize the importance of both proximal and distal contexts for the development of ethnic/racial identity centrality. Given the many positive outcomes associated with ethnic/racial identity, it is imperative that these stakeholders understand individual differences in the development of ethnic/racial centrality and that they situate these youth within their specific school environments (Holcomb-McCoy 2005; Yeh and Hwang 2000). In light of increasing school diversity and the need for cultural sensitivity, counselors should note the diversity at various levels for adolescents and how these changes may influence how adolescents feel about their importance of their own ethnic/racial group over time.

Limitations and Future Directions

Although the current study offers a significant contribution to our understanding of contextual influences on ethnic/racial identity content, there are a number of limitations. Since we were interested in adolescent friendships more broadly, we did not limit the friendship nominations solicited from participants to the school setting. Therefore, the

measurement of friends may not be entirely embedded within the school context. We believe that a more encompassing measurement of friendships reflects the potentially broad domains in which adolescents can form friendships. Since the goal of the present study was to explore the synergistic influences of friends and in-peers in school, we do not believe that the more general friendship measure undermines the importance of the study. Further, the measure of friendship used in this study was unidirectional; while our participants indicated who they perceived to be a friend, previous research has shown that assessing friendships through reciprocated measures (i.e., peer nominations) provides a more detailed picture of adolescents' social landscapes (e.g., Vaquera and Kao 2008). Finally, while the current study extends our knowledge of the differential influences of peer and friend composition for ERI, we do not examine the nature of the interactions. That is, schools of varying ethnic/racial compositions may have very different climates (e.g., discrimination, microaggressions), and the subjective nature of interactions between friends (e.g., conversations about ethnicity/race) may impact how adolescents feel about their ethnicity/race. Thus, although we assess the quantity of contact with same-ethnic/racial peers in school and friends we do not explore the quality of this contact in the current study.

Conclusion

This study offers the first examination of how the ethnic/racial composition of peers and friends independently and jointly influence changes in adolescents' centrality over time. This composition of both peers in school and friends differentially influenced centrality such that same-ethnic/racial friends promoted growth in centrality while same-ethnic/racial peers in school diminished it. Further, this study is the first to our knowledge to quantitatively examine the changing influence of friends within the context of peers in school. These results revealed that when adolescents attended schools with a high proportion of same-ethnic/racial peers in school, the positive influence of same-ethnic/racial friends on centrality was mitigated. Taken together, this research suggests that the developmental significance and meaning of ethnic/racial composition depends upon the confluence of contexts in which it is experienced.

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References

- Benner AD, Graham S. Navigating the transition to multi-ethnic urban high schools: Changing ethnic congruence and adolescents' school-related affect. *Journal of Research on Adolescence*. 2007; 17(1):207–220.
- Benner AD, Graham S. The transition to high school as a developmental process among multiethnic urban youth. *Child Development*. 2009; 80(2):356–376. [PubMed: 19466997]
- Brewer MB. In-group bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin*. 1979; 86(2):307.
- Bronfenbrenner U. *The ecology of human development* Cambridge, MA: Harvard University Press; 1979

- Bukowski WM, , Motzoi C, , Meyer F. Friendship as process, function, and outcome. In: Rubin KH, Bukowski WM, , Larson B, editors *Handbook of peer interactions, relationships, and groups* 2009 217231
- Chavous TM, Rivas-Drake D, Smalls C, Griffin T, Cogburn C. Gender matters, too: The influences of school racial discrimination and racial identity on academic engagement outcomes among African American adolescents. *Developmental Psychology*. 2008; 44(3):637. [PubMed: 18473633]
- Colby SL, , Ortman JM. US Census Bureau Projections of the size and composition of the U.S. population: 2014 to 2060 2015 251143
- Duncan GJ, Raudenbush S. Assessing the effects of context in studies of child and youth development. *Educational Psychologist*. 1999; 34(1):29–41.
- Eccles J, , Roeser RW. School and community influences on human development. In: Bornstein MH, , Lamb ME, editors *Developmental science: An advanced textbook* 6. Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers; 2011 503554
- Ennett ST, Bauman KE, Hussong A, Faris R, Foshee VA, Cai L, DuRant RH. The peer context of adolescent substance use: Findings from social network analysis. *Journal of Research on Adolescence*. 2006; 16(2):159–186.
- Erikson EH. *Identity: Youth and crisis* New York, NY: W. W. Norton & Company Inc; 1968
- Frankenberg E, , Orfield G, editors *Lessons in integration: Realizing the promise of racial diversity in American schools* University of Virginia Press; 2007
- Fulgini AJ, Witkow M, Garcia C. Ethnic identity and the academic adjustment of adolescents from Mexican, Chinese, and European backgrounds. *Developmental Psychology*. 2005; 41(5):799–811. [PubMed: 16173876]
- Graham S, Munniksma A, Juvonen J. Psychosocial benefits of cross-ethnic friendships in urban middle schools. *Child Development*. 2014; 85(2):469–483. [PubMed: 24063663]
- Hallinan MT. Patterns of cliquing among youth. In: Foot HC, Chapman AJ, , Smith JR, editors *Friendship and social relations in children* New Brunswick, NJ: Transaction Publishers; 1980 321342
- Hallinan MT, Smith SS. The effects of classroom racial composition on students' interracial friendliness. *Social Psychology Quarterly*. 1985; 48(1):3–16.
- Hartup WW. Friendships and their developmental significance. In: McGurk H, editor *Childhood social development: Contemporary perspectives* East Sussex, UK: Lawrence Erlbaum Associated Ltd; 1992 175205
- Haslam SA, O'Brien A, Jetten J, Vormedal K, Penna S. Taking the strain: Social identity, social support, and the experience of stress. *British Journal of Social Psychology*. 2005; 44(3):355–370. [PubMed: 16238844]
- Hewstone M. Intergroup contact: Panacea for prejudice. *The Psychologist*. 2003; 16(7):352–355.
- Holcomb-McCoy C. Ethnic identity development in early adolescence: Implications and recommendations for middle school counselors. *Professional School Counseling*. 2005; 9(2):120–127. DOI: 10.5330/prsc.9.2.21q8m2724r545414
- Hughes D, , McGill RK, , Ford KR, , Tubbs C. Black youths' academic success: The contributions of racial socialization from parents, peers, and schools. In: Hill N, Moran TL, , Fitzgerald HE, editors *African American Children and Mental Health: Volume 1, Context and Development* Santa Barbara, CA: ABC-CLIO; 2011 95120
- Jones RM, Vaterlaus JM, Jackson MA, Morrill TB. Friendship characteristics, psychosocial development, and adolescent identity formation. *Personal Relationships*. 2014; 21(1):51–67.
- Joyner K, Kao G. School racial composition and adolescent racial homophily. *Social Science Quarterly*. 2000; 81(3):810–825.
- Juvonen J, Nishina A, Graham S. Ethnic diversity and perceptions of safety in urban middle schools. *Psychological Science*. 2006; 17(5):393–400. [PubMed: 16683926]
- Kao G, Joyner K. Do race and ethnicity matter among friends? *The Sociological Quarterly*. 2004; 45(3):557–573.
- Kawabata Y, Crick NR. The significance of cross-racial/ethnic friendships: Associations with peer victimization, peer support, sociometric status, and classroom diversity. *Developmental Psychology*. 2011; 47(6):1763. [PubMed: 21910536]

- Kiang L, Fuligni AJ. Ethnic identity in context: Variations in ethnic exploration and belonging within parent, same-ethnic/racial peer, and different-ethnic peer relationships. *Journal of Youth and Adolescence*. 2009; 38(5):732–743. [PubMed: 19636767]
- Kiang L, Harter S, Whitesell NR. Relational expression of ethnic identity in Chinese Americans. *Journal of Social and Personal Relationships*. 2007; 24(2):277–296.
- Kiang L, Witkow MR, Baldelomar O, Fuligni AJ. Change in ethnic identity across the high school years among adolescents with Latin American, Asian, and European backgrounds. *Journal of Youth and Adolescence*. 2010; 39:683–693. [PubMed: 20422353]
- Marcia JE. Development and validation of the ego-identity status. *Journal of Personality and Social Psychology*. 1966; 3(5):551–558. [PubMed: 5939604]
- Marion D, Laursen B, Zettergren P, Bergman LR. Predicting life satisfaction during middle adulthood from peer relationships during mid-adolescence. *Journal of Youth and Adolescence*. 2013; 42(8): 1299–1307. [PubMed: 23771820]
- McPherson M, Smith-Lovin L, Cook JM. Birds of a feather: Homophily in social networks. *Annual Review of Sociology*. 2001; 27:415.
- Muthén LK, , Muthén BO. Version 6 Mplus user's guide Los Angeles, CA: Muthén & Muthén; 2010
- Orfield G, editor Diversity challenged: Evidence on the impact of affirmative action Cambridge, MA: Harvard Education Publishing Group; 2001
- Pettigrew TF, Tropp LR. A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*. 2006; 90(5):751–783. [PubMed: 16737372]
- Phinney JS. Stages of ethnic identity development in minority group adolescents. *The Journal of Early Adolescence*. 1989; 9(1):34–49.
- Quintana SM. Children's developmental understanding of ethnicity and race. *Applied and Preventive Psychology*. 1998; 7:27–45.
- Rivas-Drake D, Seaton EK, Markstrom C, Quintana S, Syed M, Lee R, et al. Ethnic and racial identity in adolescence: Implications for psychosocial, academic, and health outcomes. *Child Development*. 2014a; 85(1):40–57. [PubMed: 24490891]
- Rivas-Drake D, Syed M, Umaña-Taylor AJ, Markstrom C, French S, Schwartz SJ, Lee R. Feeling good, happy, and proud: A meta-analysis of positive ethnic/racial affect and adjustment. *Child Development*. 2014b; 85(1):77–102. [PubMed: 24490893]
- Seaton EK. Perceived racial discrimination and racial identity profiles among African American adolescents. *Cultural Diversity and Ethnic Minority Psychology*. 2009; 15(2):137. [PubMed: 19364200]
- Sekaquaptewa D, Waldman A, Thompson M. Solo status and self-construal: Being distinctive influences racial self-construal and performance apprehension in African American women. *Cultural Diversity and Ethnic Minority Psychology*. 2007; 13(4):321–327. [PubMed: 17967100]
- Sellers RM, Rowley SA, Chavous TM, Shelton JN, Smith MA. Multidimensional Inventory of Black Identity: A preliminary investigation of reliability and construct validity. *Journal of Personality and Social Psychology*. 1997; 73(4):805.
- Sellers RM, Smith MA, Shelton JN, Rowley SA, Chavous TM. Multidimensional model of racial identity: A reconceptualization of African American racial identity. *Personality and Social Psychology Review*. 1998; 2(1):18–39. [PubMed: 15647149]
- Syed M, Azmitia M. A narrative approach to ethnic identity in emerging adulthood: Bringing life to the identity status model. *Developmental Psychology*. 2008; 44(4):1012–1027. [PubMed: 18605831]
- Syed M, Juan MJD. Birds of an ethnic feather? Ethnic identity homophily among college-age friends. *Journal of Adolescence*. 2012; 35(6):1505–1514. [PubMed: 22100784]
- Tajfel H, , Turner JC. The social identity theory of intergroup behavior. In: Worchel S, , Austin LW, editors *Psychology of intergroup relations* Chicago: Nelson-Hall; 1986 724
- Tatum BD. "Why are all the Black kids sitting together in the cafeteria?": and other conversations about race Basic Books; 2003
- Thomas ON, Caldwell CH, Faison N, Jackson JS. Promoting academic achievement: The role of racial identity in buffering perceptions of teacher discrimination on academic achievement among

- African American and Caribbean Black adolescents. *Journal of Educational Psychology*. 2009; 101(2):420.
- Thrupp M, Lauder H, Robinson T. School composition and peer effects. *International Journal of Educational Research*. 2002; 37(5):483–504. DOI: 10.1016/S0883-0355(03)00016-8
- Turner JC, , Hogg MA, , Oakes PJ, , Reicher SD, , Wetherell MS. *Rediscovering the social group: A self-categorization theory* Basil Blackwell; 1987
- Umaña-Taylor AJ, Quintana SM, Lee RM, Cross WE, Rivas-Drake D, Schwartz SJ, et al. Ethnic and racial identity revisited: An integrated conceptualization. *Child Development*. 2014; 85:21–39. [PubMed: 24490890]
- U.S. Department of Education Common core of data (CCD), National Center for Education Statistics National Elementary and Secondary Enrollment Projection Model, 1972 through 2023 2014
- Yeh CJ, Hwang MY. Interdependence in ethnic identity and self: Implications for theory and practice. *Journal of Counseling and Development*. 2000; 78(4):420–429. DOI: 10.1002/j.1556-6676.2000.tb01925.x
- Yip T. Sources of situational variation in ethnic identity and psychological well-being: A palm pilot study of Chinese American students. *Personality and Social Psychology Bulletin*. 2005; 31(12): 1603–1616. [PubMed: 16254082]
- Yip T. Ethnic identity in everyday life: The influence of identity development status. *Child Development*. 2014; 85(1):205–219. DOI: 10.1111/cdev.12107 [PubMed: 23581701]
- Yip T, Douglass S, Shelton JN. Daily intragroup contact in diverse settings: Implications for Asian American adolescents' ethnic identity. *Child Development*. 2013; 84:1424–1441.
- Yip T, Seaton EK, Sellers RM. Interracial and intraracial contact, school-level diversity, and change in racial identity status among African American adolescents. *Child Development*. 2010; 81(5): 1431–1444. [PubMed: 20840232]

Fig. 1.

Conditional growth model for ethnic/racial identity centrality. *Note* W1 = Wave 1; W2 = Wave 2; W3 = Wave 3; W4 = Wave 4. Paths of conceptual interest are depicted in **bold**; covariates are depicted in *grey*. **Bold dotted lines** are the paths that contribute to the latent random slope, depicted by three pathways in the model. Covariances among exogenous variables were estimated but are not shown here. Covariances among intercept and slope functions were estimated but are not shown here. Residuals not depicted here

Fig. 2.

Conditional growth model estimates for ethnic/racial identity centrality. *Note* W1 = Wave 1; W2 = Wave 2; W3 = Wave 3; W4 = Wave 4. Paths of conceptual interest are depicted in bold; covariates are depicted in grey. **Bold dotted lines** are the paths that contribute to the latent random slope, depicted by three pathways in the model. Covariances among exogenous variables were estimated but are not shown here. Covariances among intercept and slope functions were estimated but are not shown here. Residuals not depicted here. The usual SEM fit indices are not provided for models with random slopes because there is not a single covariance matrix structure. * $p < .05$. ** $p < .01$. *** $p < .001$

Fig. 3.
Within-person association between same-ethnic/racial friends and centrality, moderated by same-ethnic/racial peers in school

Fig. 4.

Longitudinal change in centrality given varying patterns in the proportion of same-ethnic/racial friends among adolescents with a high versus low proportion of same-ethnic/racial peers in school. *Note* Proportions of same-ethnic/racial friends for Patterns A, B, and C reported in the key correspond to the proportion of same-ethnic/racial friends reported at W1, W2, and W3, respectively; because time-lagged analyses were conducted, W4 ethnic/racial composition of friends is not captured in the within-person effect

Table 1

School ethnic composition

School	Total sample %	% Asian in school	% Black in school	% Latino in school	% White in school
Predominantly Asian	18	58	07	11	24
Predominantly White	20	28	09	14	47
Predominantly Latino	19	10	14	64	12
Heterogeneous (A)	34	28	13	24	34
Heterogeneous (B)	9	16	22	28	33

Table 2

Bivariate correlations among all study variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
W1 Centrality		.58***	.53***	.55***	.20***	.25***	.17**	.20**	.02	.02	-.02	-.06	-.17**
W2 Centrality			.65***	.63***	.25***	.20***	.19**	.24***	.09	.09	-.01	-.01	-.10+
W3 Centrality				.68***	.31***	.33***	.29***	.26***	.14*	.14*	-.05	.03	-.12*
W4 Centrality					.26***	.29***	.24***	.21***	.08	.07	-.04	-.04	-.13*
W1 Same-E/R Friends						.65***	.64***	.61***	.41***	.40***	-.09+	-.07	.00
W2 Same-E/R Friends							.73***	.73***	.49***	.49***	-.07	-.03	.02
W3 Same-E/R Friends								.76***	.43***	.43***	-.04	-.03	.01
W4 Same-E/R Friends									.38***	.39***	-.09	.03	.04
W1-2 Same-E/R Peers										.99***	.01	-.13*	.05
W3-4 Same-E/R Peers											-.01	-.13*	.06
Gender												-.07	.09
Nativity													.06
E/R Minority Status													
<i>M</i>	4.27	4.32	4.31	4.28	.55	.60	.63	.62	.34	.34	.36	.83	.24
<i>SD</i>	.91	.83	.81	.83	.34	.33	.34	.34	.18	.19	.48	.38	.43

E/R = ethnicity/race. Gender is coded as 0 = female, 1 = male; nativity status is coded as 0 = non-U.S. born, 1 = U.S. born; ethnic/racial minority status is coded as 0 = ethnic/racial minority, including Asian, Hispanic, or Black, 1 = White + $p < .10$,

* $p < .05$,

** $p < .01$,

*** $p < .001$

Table 3

Increases in centrality 6 months later based on the proportion of same-ethnic/racial friends for adolescents with low and high proportion of same-ethnic/racial peers in school

Proportion of same-ethnic/racial friends (%)	Increases in centrality six months later	
	Low (7 %) proportion same-ethnic/racial peers in school	High (64 %) proportion same-ethnic/racial peers in school
0	.00	.00
10	.05	.02
20	.10	.04
30	.15	.06
40	.20	.08
50	.25	.10
60	.30	.12
70	.35	.14
80	.40	.16
90	.45	.18
100	.50	.20