

Research Article

Can Cross-Group Friendships Influence Minority Students' Well-Being at Historically White Universities?

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ABSTRACT—*Past research has demonstrated the negative impact of race-based rejection sensitivity (RS-race) on institutional belonging and satisfaction among minority-group students in predominantly White universities. Given research documenting the benefits of cross-group friendship for intergroup attitudes, we tested whether friendships with majority-group peers would attenuate the effects of RS-race within these contexts. In a longitudinal study of African American students (Study 1), cross-group friendships with majority-group peers buffered students high in RS-race from lack of belonging and dissatisfaction at their university. An experimental intervention (Study 2) that induced cross-group friendship replicated the findings and established their specificity for minority-group students. We discuss implications for efforts toward diversifying educational settings.*

In recent decades, strides have been made toward ensuring equal access to institutions of higher education (Hurtado, Milem, Clayton-Pedersen, & Allen, 1998). This goal has been particularly important for universities that have historically denied access to individuals on the basis of status characteristics, such as race or gender (Bowen & Bok, 1998). As universities successfully recruit members of groups they previously marginalized, new challenges arise. One central challenge in-

volves moving from *numerical diversity*—ensuring that different groups are represented within the institution—toward *relational* or *interactional diversity*—ensuring that once together, people from different groups reach out across group boundaries, and that members of all groups feel equally welcome and accepted within the institution (Fine, Weis, & Powell, 1997; Gurin, Dey, Hurtado, & Gurin, 2002).

Research suggests that a principal vehicle through which relational diversity can be achieved is interpersonal relationships across group boundaries (Levin, van Laar, & Sidanius, 2003; McLaughlin-Volpe, Mendoza-Denton, & Shelton, 2005; Paolini, Hewstone, Cairns, & Voci, 2004). Drawing on this research, we focus here on the implications of friendships with majority-group peers for institutional belonging and satisfaction among minority students at elite, historically White universities. Members of historically marginalized groups may be especially likely to question their acceptance within such settings and feel mistrustful toward university representatives and authorities (Bowen & Bok, 1998; Stewart & Dottolo, 2005). Nonetheless, there is significant within-group variability in the experience of such concerns. Specifically, higher levels of race-based rejection sensitivity (*RS-race*; Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002) have been directly linked to reduced belonging and adjustment among minority students at historically White universities (Aronson & Inzlicht, 2004; Mendoza-Denton et al., 2002; Walton & Cohen, 2007).

At least three lines of research provide reason to believe that cross-group friendships can positively influence institutional attitudes among students concerned about their belonging in such educational settings. First, we have shown that minority students' attitudes toward the university covary with their attitudes toward representatives of the institutional in-group—professors, administrators, and majority-group peers

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(Mendoza-Denton et al., 2002). Second, having greater numbers of majority-group members in one's high school and home neighborhood has been linked to better adjustment among minority-group students within predominantly White college settings (Chavous, Rivas, Green, & Helaire, 2002; Graham, Baker, & Wapner, 1985). Third, research suggests that the positive effects of close interpersonal relationships across group boundaries generalize to new out-group members (Paolini, Hewstone, Rubin, & Pay, 2004; Wright, Aron, & Tropp, 2002).

Given these converging lines of research, we tested whether friendships with majority-group peers would buffer minority students who are high in RS-race from feelings of alienation and discomfort in historically White university settings. In Study 1, African American students' belonging and satisfaction in a historically White educational institution were tracked over 3 years as they developed friendships with White peers. In Study 2, to more directly test the causal role of friendship, we examined whether an experimental intervention that induced cross-group friendship had a similar influence on satisfaction in another historically White university.

STUDY 1

Study 1 was a 3-year longitudinal study of two cohorts of African American college students at a university where African Americans represented less than 10%, and Whites represented more than 50%, of the student body over the course of data collection (see Mendoza-Denton et al., 2002). We specifically addressed the question of whether friendships developed with majority-group peers over the 1st year of college predicted feelings of belonging in the university 1 to 2 years later, as well as change in satisfaction with the university over this time period.

Method

Participants and Procedure

Over the course of 2 years, research assistants invited incoming 1st-year students to partake in a study on adjustment to student life. Before classes began, interested students filled out questionnaires assessing their sensitivity to rejection based on their race and their personal characteristics. At the end of each cohort's 1st year (Follow-Up 1), participants were invited to complete a questionnaire that included questions about the friends they had made during the school year and their satisfaction at the university. At the end of the second cohort's sophomore year (the first cohort's junior year), participants from both cohorts were contacted simultaneously. At this second follow-up (Follow-Up 2), they completed an assessment of institutional belonging and the same measure of institutional satisfaction from Follow-Up 1. RS-race was not systematically related to attrition from the study at either follow-up.

We focus here on the 42 participants (27 women, 15 men; mean age at entry = 17.81 years, $SD = 0.55$) who had complete

data on the key measures of interest. This gender breakdown reflects the proportion of men and women among African American students at the university (see Mendoza-Denton et al., 2002). Gender and cohort were not associated with significant differences in the outcome variables reported; therefore, these factors are not discussed further.

Predictor Measures

RS-Race. The RS-Race Questionnaire (Mendoza-Denton et al., 2002), which was administered prior to the study, measures anxious expectations of race-based rejection in situations in which discrimination is applicable and possible, such as an in-person job interview (see Mendoza-Denton et al., 2002, for validation data for this questionnaire). For the 42 African American participants in this study, the mean RS-race score was 12.51 ($SD = 7.10$, $\alpha = .92$).

Friendships. To guard against self-presentation concerns and experimenter demand, we asked participants to list their friends before they told us the group memberships of these friends. Thus, at Follow-Up 1, participants first listed the first names of up to 10 friends that they had made over their 1st year of college ($M = 8.36$, $SD = 2.12$). They then completed the rest of the follow-up questionnaire. Finally, the last page of the questionnaire directed participants to return to the first section, where they had listed their friends' names, and to provide the age, gender, and race of each friend. Participants reported greater numbers of Black friends ($M = 5.8$, $SD = 2.90$) than White friends ($M = 1.14$, $SD = 1.52$). To ensure that any observed effects on belonging and satisfaction were specific to having White friends, we controlled for number of Black friends in our analyses.¹ RS-race scores were not significantly related to number of Black friends, $r(40) = .23$, $p = .15$, but were significantly related negatively to number of White friends, $r(40) = -.33$, $p < .04$.

Covariates

Rejection Sensitivity-Personal (RS-Personal). The RS-Personal Questionnaire (Downey & Feldman, 1996), also administered prior to the study, assesses anxious expectations of rejection by significant others due to one's personal, unique characteristics. Validation data for this measure are available in Downey and Feldman (1996). We included RS-personal as a measure of discrimination-irrelevant anxious expectations in interpersonal interactions ($M = 8.92$, $SD = 3.77$, $\alpha = .81$).

Grade Point Average (GPA). To ensure that any observed effects on institutional attitudes were independent of students' academic performance (cf. Mendoza-Denton, Pietrzak, & Downey,

¹Parallel analyses controlling for the number of White friends revealed that the number of Black friends was not related to institutional belonging or change in university satisfaction, either in interactions with RS-race or as a main effect (all $F_s < 1$).

2008), we controlled for cumulative GPA at Follow-Up 2. These data were obtained from participants' academic records with their permission ($M = 2.94$, $SD = 0.39$).

Outcome Measures

Sense of belonging at the university was assessed only at Follow-Up 2. Participants rated their agreement with six items indexing institutional belonging: for example, "I belong at Columbia" and "I feel alienated from Columbia" (reverse-scored). Ratings were made on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*); $M = 3.50$, $SD = 0.84$, $\alpha = .86$.

University satisfaction was assessed both at Follow-Up 1 and at Follow-Up 2 with two items ("If a friend of yours were accepted to the university, how much would you encourage [him or her] to come?" and "Overall, how satisfied are you with your experience at the university?"). The response scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). These items correlated highly both at Follow-Up 1 ($r = .64$, $p < .001$) and at Follow-Up 2 ($r = .70$, $p < .0001$) and were therefore combined to arrive at a unitary index of satisfaction (Follow-Up 1: $M = 5.49$, $SD = 1.30$; Follow-Up 2: $M = 5.58$, $SD = 1.17$).

Results and Discussion

Belonging and satisfaction at the university were each regressed on RS-race (continuous), number of White friends (continuous), and their interaction, controlling for RS-personal, number of Black friends, and GPA. The analyses also controlled for satisfaction at Follow-Up 1 to assess change. Predictor variables were first standardized; significant interactions were then plotted graphically using predicted values for individuals 1 standard deviation above and below the mean of the predictor variables.

Belonging

The analysis for belonging revealed a significant main effect of RS-race, $b = -0.25$, $F(1, 34) = 6.17$, $p < .02$. This main effect was qualified by the expected interaction between number of majority-group friends and RS-race, $b = 0.41$, $F(1, 34) = 7.63$, $p < .01$. As Figure 1 shows, among participants with fewer majority-group friends, RS-race and institutional belonging were significantly negatively related, $b = -0.66$, $F(1, 34) = 16.73$, $p < .0002$. This result is consistent with prior research linking RS-race to reduced institutional belonging, particularly given that higher levels of RS-race have been shown to be negatively correlated with number of White friends (Mendoza-Denton et al., 2002). Among students with more majority-group friends, however, RS-race and institutional belonging were not significantly related, $b = 0.16$, $F(1, 34) = 0.69$, $p = .41$. As expected, among participants high in RS-race, having a greater number of majority-group friends was positively and significantly associated with greater institutional belonging, $b = 0.60$, $F(1, 34) = 5.57$, $p < .03$. For participants low in RS-race, the

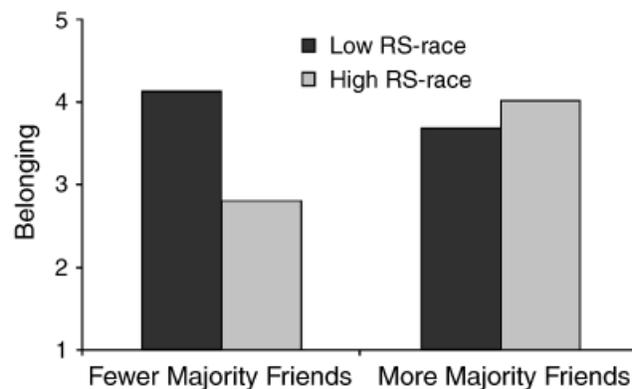


Fig. 1. Results from Study 1: institutional belonging among African American students as a function of race-based rejection sensitivity (RS-race) and friendship with majority-group peers. The graph shows predicted values for individuals 1 standard deviation above and below the mean of the RS-race distribution and the mean of the friendship distribution.

number of majority-group friends was not significantly related to institutional belonging, $b = -0.22$, $F(1, 34) = 1.80$, $p = .19$.

Even though this analysis controlled for satisfaction at Follow-Up 1, it is nevertheless possible that this pattern does not reliably reflect change because the outcome measure was different (i.e., belonging, rather than satisfaction). It was therefore important to determine whether analyses of university satisfaction at Follow-Up 2, controlling for the identical measure at Follow-Up 1, would show the same pattern.

University Satisfaction

The model for university satisfaction revealed a significant interaction between number of majority-group friends and RS-race, $b = 0.46$, $F(1, 34) = 7.19$, $p = .01$. As Figure 2 illustrates, among participants with fewer majority-group friends, RS-race and university satisfaction were significantly negatively related,

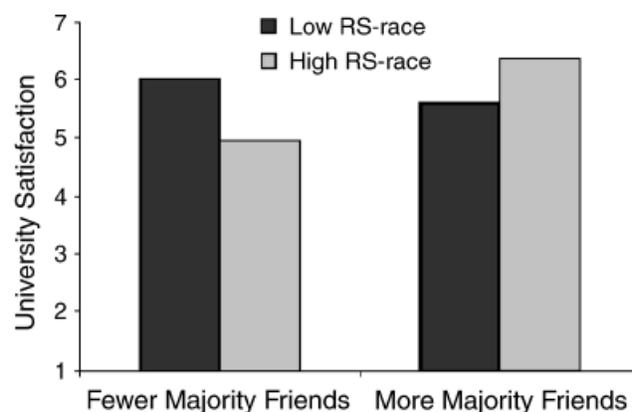


Fig. 2. Results from Study 1: university satisfaction among African American students as a function of race-based rejection sensitivity (RS-race) and friendship with majority-group peers. The graph shows predicted values for individuals 1 standard deviation above and below the mean of the RS-race distribution and the mean of the friendship distribution.

$b = -0.54$, $F(1, 34) = 8.53$, $p < .007$, whereas among participants with more majority-group friends, RS-race and university satisfaction were not significantly related, $b = 0.38$, $F(1, 34) = 2.80$, $p = .10$. Among participants high in RS-race, number of majority-group friends was positively associated with university satisfaction, $b = 0.70$, $F(1, 34) = 5.86$, $p = .02$. For individuals low in RS-race, the number of majority-group friends was not related to university satisfaction, $b = -0.21$, $F(1, 34) = 1.21$, $p = .28$.

The fact that our analyses controlled for the previous level of university satisfaction increased our confidence that there was a causal effect such that friendship with majority-group peers attenuated the link between RS-race and negative institutional outcomes (see Bolger, Rafaeli, & Davis, 2003). Nevertheless, it was possible that among participants high in RS-race, those who developed close cross-group friendships were fundamentally different from those who did not. Furthermore, we did not directly test the assumption that the effects of cross-group friendship on institutional outcomes are unique to minority-group members. We addressed these issues through an experimental intervention in Study 2.

STUDY 2

In Study 2, we conducted an experimental intervention in which Latino² and White participants at a historically White yet currently diverse university were randomly assigned to either a cross-group friendship induction or a same-group friendship induction. The friendship induction was based on procedures developed by Aron, Melinat, Aron, Vallone, and Bator (1997) and first adapted to the intergroup context by Wright and his colleagues (see Wright et al., 2002). We focused on Latinos and Whites in this study because of recruitment access within student organizations, as well as the long-standing interest in relations between these two groups (Stephan & Stephan, 2000). The same-group condition allowed us to compare the effects of making a new cross-group friend with the effects of forming a new friendship more generally. Background measures were collected prior to the study, and university satisfaction was assessed at the conclusion of the final intervention session. The procedure is described in more detail elsewhere (Page-Gould, Mendoza-Denton, & Tropp, in press).

Method

Setting and Participants

Participants were 144 undergraduate students attending the University of California, Berkeley. Of this group, 135 (74% female; mean age = 19.37 years, $SD = 1.51$) had complete data for the analyses reported here. Over the course of data collec-

tion, the ethnic composition of the undergraduate population at the university was, on average, 34.4% White and 12.0% Latino. Our sample consisted of 76 White participants and 59 Latino participants. Among White participants, 53 were in the same-group condition and 23 were in the cross-group condition; among Latino participants, 35 were in the same-group condition and 24 were in the cross-group condition.

Procedure

Participants were recruited for a study “examining the effects of friendship on adjustment to college.” Although participants were aware that the study involved making a friend, they were not privy to our interest in cross- versus same-group friendship formation. Interested participants attended an information session in groups of 1 to 8. At this session, they provided informed consent and completed the background measures, including the measures of RS-race and RS-personal. Within 2 weeks of the information session, participants were randomly assigned to a same- or cross-group partner, with the restriction that partners needed to have compatible schedules. Participants did not know each other prior to the experimental sessions. To further minimize the possibility of contact between partners prior to the study, we did not pair participants who had attended the same information session.

Partners attended three friendship-intervention sessions specifically designed to build interpersonal closeness. The sessions were held on consecutive weeks. We adapted the one-session “fast friends” procedure (Aron et al., 1997) for a three-session format. At each of the first two sessions, the partners answered 36 questions that required escalating levels of self-disclosure over a 45-min period. At the third session, the partners played a game of Hasbro’s Jenga, in which they took turns removing blocks from a stacked tower, trying not to make the tower fall (Wright & van der Zande, 1999). The partners played Jenga for 30 min and then completed a final, postfriendship questionnaire that included our measure of university satisfaction. (See Page-Gould et al., in press, for validation data relevant to this procedure for inducing closeness between participants.)

Materials

RS-Race. In this study, we used a six-item version of the RS-Race Questionnaire ($M_{\text{Latino}} = 7.51$, $SD = 6.77$, $\alpha = .85$; $M_{\text{White}} = 3.34$, $SD = 2.49$, $\alpha = .80$). Both the means, $t(133) = 4.96$, $p < .0001$, and the variances, folded $F(58, 75) = 7.08$, $p < .0001$, differed significantly between the two groups. Therefore, we standardized RS-race scores within ethnicity to unconfound these scores from group membership.

RS-Personal. In this study, we also used a shortened six-item version of the RS-Personal Questionnaire ($M_{\text{Latino}} = 10.18$, $SD = 3.95$, $\alpha = .63$; $M_{\text{White}} = 9.48$, $SD = 4.06$, $\alpha = .75$). Means and variances did not differ between the two groups.

²For ease of exposition, and in keeping with this journal’s style, we use “Latino” to refer to both male and female participants.

University Satisfaction. University satisfaction was assessed using the same two items as in Study 1. Ratings for the two items were correlated for both Whites, $r(74) = .64, p < .0001$, and Latinos, $r(57) = .64, p < .0001$, and were thus collapsed to form a single index of university satisfaction ($M_{\text{White}} = 6.14, SD = 0.86; M_{\text{Latino}} = 6.08, SD = 1.04$). We did not measure university belonging in this study because of space constraints in the questionnaire packet.

Results

We followed the analytic and graphing strategy of Study 1. University satisfaction was regressed on condition (same-group = 0; cross-group = 1), ethnicity (White = 0, Latino = 1), and RS-race (continuous), with all interaction terms included in the model. RS-personal scores were included as a covariate. This analysis revealed the predicted three-way interaction, $b = 0.80, F(1, 126) = 6.10, p < .02$. We examined the lower-order interactions of interest in the context of this higher-order interaction (Aiken & West, 1991). As expected, the model revealed no significant main effects or interactions for White participants (all F 's $< 1.37, ps > .24$). Among Latino participants, however, we observed a main effect of RS-race, $b = -0.54, F(1, 126) = 8.75, p < .005$, such that participants higher in RS-race tended to feel less satisfaction at the university overall. This main effect was qualified by the predicted Condition \times RS-Race interaction, $b = 0.55, F(1, 126) = 5.11, p < .03$.

The interaction among Latino students is illustrated in Figure 3. Whereas in the same-group condition, RS-race was negatively related to institutional satisfaction, $b = -0.54, F(1, 126) = 8.75, p < .004$, this effect all but disappeared in the cross-group condition, $b = 0.008, F(1, 126) = 0.03, n.s.$ The effect of condition was positive and approached significance for Latinos high in RS-race, $b = 0.60, F(1, 126) = 3.15, p = .08$, but, as expected, was not significant among Latinos low in RS-race, $b = -0.51, F(1, 126) = 1.97, p = .16$.

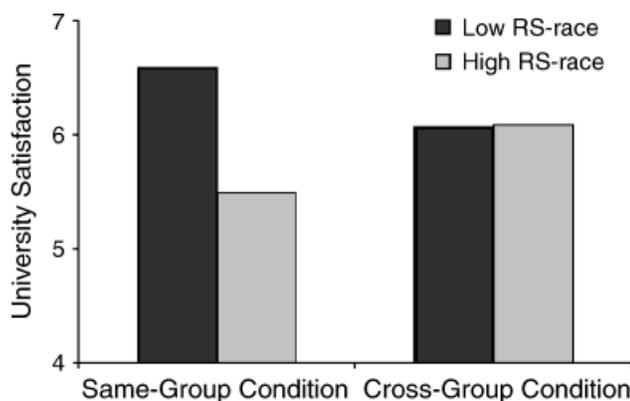


Fig. 3. Results from Study 2: university satisfaction among Latino students as a function of race-based rejection sensitivity (RS-race) and experimental condition (cross-group vs. same-group friendship). For each condition, the graph shows predicted values for individuals 1 standard deviation above and below the mean of the RS-race distribution.

GENERAL DISCUSSION

There is widespread recognition that universities, as principal gateways to the attainment of personally engaging and societally valued career paths, have a responsibility to serve and be equally accessible to all members of society. This recognition is particularly relevant for universities that remain largely homogeneous because of a historical legacy of limiting access to certain students on the basis of categorical features such as gender or race (Bowen & Bok, 1998). Our research underscores the importance of the interpersonal climate for addressing issues of access and diversity within such institutions, and shows that the development of affiliative ties across group boundaries provides an important vehicle for achieving relational diversity.

Drawing on past research documenting the benefits of cross-group friendship for intergroup attitudes, we hypothesized that cross-group friendships would enhance institutional belonging and satisfaction among individuals most susceptible to experiencing a lack of belonging in the university context—minority students high in RS-race. We found empirical support for this hypothesis in a longitudinal data set (Study 1). We then conducted a friendship intervention (Study 2) that provided causal evidence for the buffering influence of cross-group friendships on the institutional satisfaction of minority students at historically White institutions. Thus, our research contributes to a burgeoning literature on cross-group friendships by showing that the positive effects of friendship can extend beyond intergroup attitudes per se to institutional attitudes, and by directly testing causal links from cross-race friendships to positive intergroup outcomes (cf. Pettigrew, 1998).

We did not expect (and did not find) systematic effects for White students. Compared with minority-group students, they have less reason to doubt their acceptance in such institutions and are less likely to see minority-group friends as representative of the institution. We emphasize that friendships with members of the majority group have positive effects on institutional attitudes of minority-group students in the specific context of the historically White institution, where the suspicion of lack of belonging is likely to be high. Friendships with majority-group peers are less likely to have effects on institutional attitudes in contexts where these peers' group memberships do not hold similar symbolic or historical import.

Importance of Fostering Out-Group and In-Group Affiliations Simultaneously

Although the research reported here was specifically focused on the impact of out-group friendships for minority-group students' sense of belonging, we note that efforts to foster out-group contact need not come at the expense of promoting the benefits of in-group contact. For example, in a previous study, we (Mendoza-Denton et al., 2002) demonstrated that on days following attendance at ethnically centered events (e.g., attendance at a meeting of the Black Students' Organization), minority students'

sense of belonging at the university increased. Together, the findings of these studies suggest that efforts to increase cross-group friendship are not incompatible with institutional efforts to clearly communicate acceptance of the minority group by supporting organizations or activities centered on the ethnic or racial background of that group. This recognition is important because the effects of same-group friendship—much like the effects of cross-group friendship, as we have shown here—are likely to vary across members of minority groups and may prove particularly beneficial for some individuals. For example, in each of our outcome measures, there was a nonsignificant but consistent trend for same-group friendship to be more beneficial than cross-group friendship for participants low in RS-race. To the degree that minority-group students may differentially benefit from same- and cross-group affiliations, interventions or programs that foster both may ultimately achieve the widest reach.

Underlying Mechanisms

The results presented here raise interesting questions about the mechanisms underlying the effect of cross-group friendships on institutional attitudes. Pettigrew (2006) identified three potential mechanisms through which intergroup contact might reduce prejudice: decreases in anxiety, increases in empathy, and increased knowledge about the out-group. We did not measure empathy or out-group knowledge in either of the studies reported here. Nevertheless, although we did measure participants' cortisol reactivity (a physiological correlate of stress) in Study 2 (see Page-Gould et al., in press), such reactivity was unrelated to attitudes toward the university among Latino participants ($F = 0.01$, n.s.). Thus, the effect of cross-group friendship on institutional well-being among students high in RS-race does not appear to be explained by decreases in cortisol reactivity.

Though initially surprising, this pattern suggests that intergroup contact may not affect prejudice reduction and institutional well-being in the same way. What mechanisms might account for the effect of cross-group friendship on institutional attitudes? One promising possibility lies in self-expansion processes (Aron et al., 2004), whereby people grow to incorporate their partner's knowledge, experiences, and identities into their own self-concept as interpersonal closeness develops. In a study consistent with this notion (Page-Gould, Mendoza-Denton, & Alegre, 2008), we found that people's speed in categorizing a cross-group friend's ethnic group as "not me" was inversely related to the quality of their friendships with members of that friend's group. To the extent that a friend's perceived membership in the university in-group is salient, cross-group friendship may increase the likelihood that minority-group students will eventually incorporate a university identity as part of themselves.

Another possible mechanism is suggested by research showing that emphasizing a common in-group identity (e.g., as university students), despite other dimensions of difference,

provides benefits such as reduced intergroup bias (Gaertner, Dovidio, Nier, Ward, & Banker, 1999) and greater institutional belonging and commitment among minority-group members (Dovidio, Gaertner, Flores Niemann, & Snider, 2001; see Gaertner & Dovidio, 2005). As several researchers have noted (Brown & Hewstone, 2005; Gaertner et al., 1999; Gonzalez & Brown, 2006), the benefits of fostering the superordinate identity are seen when minority-group members' subordinate group identity is not threatened (i.e., when they can have a *dual identity*). We propose that in the context of friendship, subordinate identities may not be threatened as superordinate identities are strengthened. Therefore, friendships with majority-group peers may be key in the development of dual identity among minority-group students, and may provide a route toward relational diversity within institutions of higher education.

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