Is Diversity Enough? Cross-Race and Cross-Class Interactions in College Occur Less Often than Expected, but Benefit Members of Lower-Status Groups When They Occur

Rebecca M. Carey and Nicole M. Stephens

Northwestern University

Sarah S. M. Townsend

University of Southern California

MarYam G. Hamedani

Stanford University

Author Note

Rebecca M. Carey, Kellogg School of Management, Northwestern University; Nicole M. Stephens, Kellogg School of Management, Northwestern University; Sarah S. M. Townsend, Marshall School of Business, University of Southern California; MarYam G. Hamedani, SPARQ, Stanford University

Correspondence regarding this article should be addressed to: Rebecca M. Carey, Kellogg School of Management, Northwestern University, 2211 Campus Drive, Evanston, IL 60208; Email: rebecca.carey@kellogg.northwestern.edu

Abstract

Educational institutions have increasingly sought to create diverse student bodies. Given these efforts, the present research asks two broad questions. First, to what extent do students’ interactions reflect the diversity of their educational settings? Second, when intergroup interactions occur, how do they impact students’ academic experiences and outcomes? Leveraging a longitudinal design and daily diary methods, we conducted the first large study (Ninteractions = 11,460) which tracks the frequency, quality, and consequences of meaningful cross-race and cross-social class interactions in university settings. We found that students reported far fewer cross-race and cross-class interactions than would be expected at chance given the racial and social class diversity of their student bodies. Furthermore, underrepresented racial minority students and students from working-class backgrounds experienced cross-race and cross-class interactions as lower quality than same-race and same-class interactions. Nevertheless, these cross-group interactions predicted better academic performance for racial minority students and those from working-class backgrounds. They did so through different processes: cross-race interactions improved racial minorities’ academic performance by reducing social identity threat, whereas cross-class interactions improved the academic performance of students from working-class backgrounds by increasing sense of belonging. Together, these findings suggest that diversifying educational settings is not enough to encourage meaningful intergroup interactions. Furthermore, fostering intergroup interactions may be one important pathway toward reducing racial and social-class disparities in students’ experiences and academic outcomes in college.

*Keywords*: diversity, race, ethnicity, social class, intergroup dynamics, intergroup interactions, cross-race, cross-class, belonging, academic outcomes

Is Diversity Enough? Cross-Race and Cross-Class Interactions in College Occur Less Often than Expected, but Benefit Members of Lower-Status Groups When They Occur

On November 19, 1960, Ruby Bridges became the first African American student to integrate William Frantz Elementary School in New Orleans, Louisiana. Protected by a police escort, she was met by an angry crowd throwing threats and rocks in equal measure. Ruby’s experience of integration was one of complete isolation—she was taught separately, ate separately, and played separately from other students. Ruby’s experience is an extreme one, but it highlights how diversifying a space is not always enough to engender meaningful intergroup interactions. It raises two important questions. First, to what extent do students’ interactions reflect the diversity of their educational settings? Second, when these intergroup interactions occur, how do they impact students’ experiences and outcomes in these settings?

To address these questions, the present research examined the frequency, quality, and consequences of cross-race and cross-class interactions in higher education. We specifically focused on meaningful interactions with the goal of examining students’ most substantive and involved cross-group interactions. Our findings revealed that students reported fewer cross-race and cross-class interactions than would be expected at chance given the racial and social class diversity of their student bodies. Furthermore, underrepresented racial minority students and students from working-class backgrounds experienced cross-group interactions as lower quality than same-race and same-class interactions. Nevertheless, these cross-group interactions predicted better academic performance (i.e., higher GPAs) for racial minority students and those from working-class backgrounds. They did so through different processes: cross-race interactions improved racial minorities’ academic performance by reducing social identity threat, whereas cross-class interactions improved the academic performance of students from working-class backgrounds by increasing sense of belonging.

Leveraging a longitudinal design and daily diary methods, this study extends current research in at least three important ways. First, although colleges and universities have pushed to increase social class diversity (Chetty, Friedman, Saez, Turner, & Yagan, 2017; Hoxby & Turner, 2019), it is unclear how often students have meaningful interactions with individuals from different social class backgrounds. Furthermore, we do not know how these cross-class interactions affect students’ experiences and academic outcomes in college. The current study is the first large-scale study of its kind to systematically examine the frequency, quality and consequences of cross-cass interactions in higher education.

Second, using self-report measures, previous studies have examined how students’ intergroup interactions affect their *subjective* perceptions of their academic development and skills (Chang, 1999; Gurin, Dey, Hurtado, & Gurin, 2002; Hurtado, 2005). Prior studies have not yet examined how these interactions affect students’ *objective* academic performance (e.g., their GPAs), an especially important downstream outcome that can impact access to graduate school or career opportunities (Jones & Jackson, 1990; Khoo & Ost, 2018; Thomas, 2000). The current study is the first to examine how both cross-race and cross-class interactions impact GPA.

Third, much of the research on intergroup interactions in higher education has relied on broad measures that assess how frequently students report interacting with different groups over an extended period of time (e.g., how frequently did you socialize with students whose race/ethnic background was different from your own?).[[1]](#footnote-1) Going beyond this work, the current study utilized daily diary methods in which participants reported the frequency of their meaningful interactions for eight different days during their first semester in college. This method allowed for a more precise and accurate estimate of students’ intergroup interactions.

In the sections that follow, we draw on the intergroup literatures in psychology, sociology, and education to develop theoretically-driven hypotheses about the frequency, quality, and consequences of cross-race and cross-class interactions in higher education.

**Higher Education and Racial Diversity**

Consistent with previous research on cross-race interactions (Bergsieker, Shelton, & Richeson, 2010; Dovidio, Hebl, Richeson, & Shelton, 2006; Trawalter, Richeson, & Shelton, 2009), we use the term *cross-race interactions* to refer to those that occur between individuals who are members of different-status racial groups. Higher education settings tend to afford lower status to Black, Latinx, and Native American students compared to their White and Asian peers. For example, compared to their White and Asian peers, Black, Latinx, and Native American students are often underrepresented, subject to negative stereotypes about their academic abilities, and less likely to feel included and welcome in college (Engle & Tinto, 2008; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Soria & Stebleton, 2013). We consequently focus oncross-race interactions between students from higher-status (i.e., White and Asian students) and lower-status racial groups (i.e., Black, Latinx, and Native students). We do not consider the cross-race interactions that occur between racial groups that share similar status (e.g., interactions between Black and Latinx students).

**Frequency of cross-race interactions.**If students’ interactions are not organized by race, then the frequency of students’ cross-race interactions should proportionally reflect the racial composition or diversity of a student body (e.g., Chang, Astin, & Kim, 2004). However, prior research suggests that students’ interactions are persistently organized by race. For example, examining social network data, Wejnort (2010) found that students report fewer cross-race interactions than would be expected given the racial diversity of the student body at their schools. In another study, researchers found that while White students gained cross-race friendships after entering college, Black and Latino students did not (Stearns, Buchmann, & Bonneau, 2009). An examination of MBA students’ social networks at the beginning and end of an academic term revealed that, despite institutional advocacy for diversity, the racial diversity of students’ friendship networks did not change, and instead stayed relatively homophilous over time (Mollica, Gray, & Treviño, 2003). Given these findings, we expect that students’ interactions are unlikely to proportionally reflect the racial diversity of their college environments. We specifically hypothesize that:

(H1) Students will report fewer meaningful cross-race interactions than would be expected at chance given the racial diversity of their student body.

**Quality of cross-race interactions**. Much of the literature on the quality of cross-race interactions demonstrates that interacting with members of a different-status race can elicit stress, threat, and anxiety (Mendes, Blascovich, Lickel, & Hunter, 2002; Stephan & Stephan, 1985; Trawalter et al., 2012; Trawalter et al., 2009). A meta-analysis of research on interracial interactions found that participants in cross-race interactions reported less positive attitudes towards their partners, more negative affect, and showed less friendly nonverbal behavior compared to those in same-race interactions (Toosi, Babbitt, Ambady, & Sommers, 2012). In higher education settings, students experience increased levels of discomfort, blood pressure, and cortisol reactivity during cross-race (vs. same-race) interactions (e.g., Littleford, Wright, & Sayoc-Parial, 2005; West, Koslov, Page-Gould, Major, & Mendes, 2017). College students also report feeling less understood in cross-race interactions and are less likely to experience positive emotions and intimacy in these interactions compared to their same-race interactions (Shelton, et al., 2014; Trail, Shelton, & West, 2009). While the quality of cross-race interactions can improve over time with repeated interactions and developing friendships, the initial interactions that precede these experiences are likely to be stressful and threatening (Gudykunst & Shapiro, 1996; Mendoza-Denton & Page-Gould, 2008; Toosi et al., 2012). We consequently hypothesize that:

(H2) Students will experience more threat, less satisfaction, and less perspective-taking in cross-race interactions compared to same-race interactions.

**Consequences of cross-race interactions**. The research reviewed so far highlights several challenges to cross-race interactions in terms of their frequency and quality. Nevertheless, when these cross-race interactions occur, they can have positive long-term consequences for students’ academic outcomes in college (Hodson, Crisp, Meleady, & Earle, 2018). Research has yet to examine the consequences of cross-race interactions for objective indicators of academic performance[[2]](#footnote-2), but there at least two reasons to expect that these interactions can improve students’ GPAs. First, an extensive literature demonstrates that cross-race interactions can improve subjective academic outcomes, such as intellectual engagement, cognitive growth, and academic skills (Bowman, 2010; Denson & Chang, 2009; Gurin et al., 2002). Second, cross-race interactions have been shown to increase students’ feelings of comfort, inclusion, and compatibility in their college environment (Bowman & Park, 2015; Chang, 1999; Mendoza-Denton & Page-Gould, 2008; Strayhorn, 2008a; Villalpando, 2002). Given the importance of feelings of inclusion for academic outcomes (e.g., Ostrove & Long, 2007; Walton & Cohen, 2007), any positive effects of cross-race interactions on these experiences should have downstream consequences for students’ objective academic performance. Accordingly, we theorize that participating in more cross-race interactions will improve students’ GPAs, and that one way they should do so is through increasing feelings of inclusion in the college environment. We specifically examine two aspects of inclusion: *sense of belonging* and *social identity threat*. While sense of belonging captures more diffuse feelings of inclusion, social identity threat captures the extent to which students feel their particular social groups are accepted in their college environments (Locks, Hurtado, Bowman, & Oseguera, 2008; Murphy & Zirkel, 2015). We consequently hypothesize:

(H3) Cross-race interactions will improve students’ feelings of inclusion in their universities (i.e., as indexed by sense of belonging and social identity threat), which in turn will improve their academic performance (i.e., college GPA).

**Are cross-race interactions the same for different-status race groups?** The literatures reviewed above suggest clear hypotheses about the frequency, quality, and consequences of cross-race interactions, but are less clear in whether these effects will differ among different-status race groups. For example, while Stearns et al. (2009) found that White students had more homophilous friendship networks than Black and Latino students, Mollica et al. (2003) found the opposite: Black and Latino students had more homophilous friendship networks than their White peers. Furthermore, although Strayhorn (2008a, 2008b) found that cross-race interactions promoted feelings of inclusion for all students, Mendoza-Denton and Page-Gould (2008) only found this effect for racial minorities. To identify potential differences based on students’ race, we compared the frequency, quality, and consequences of cross-race interactions between Black, Latinx, and Native American students and White and Asian students.

**Higher Education and Social Class Diversity**

Compared to the well-developed literature on cross-race interactions, we know little about interactions between members of different-status social classes. Because research has not yet examined the frequency, quality, or consequences of cross-class interactions in higher education (or elsewhere), we develop and present new theory on these interactions. We do so by considering how the intergroup experiences associated with social class are likely to be similar to or different from intergroup experiences associated with race.

As with cross-race interactions, we use the term *cross-class interactions* to refer to those that occur between individuals with different-status social class backgrounds. Colleges and universities often afford lower status to students from working- and lower-class backgrounds compared to those from middle- and higher-class backgrounds. For example, compared to their peers from higher social class backgrounds, working- and lower-class students are often minorities on campuses, subject to negative stereotypes about their abilities, and more likely to confront messages and practices that challenge their feelings of inclusion in college (Goudeau & Croizet, 2017; Ostrove & Long, 2007; Pascarella et al., 2004; Pittman & Richmond, 2007; Walpole, 2003). We consequently focus on cross-class interactions between students from higher-status social class backgrounds (i.e., continuing-generation and high-income students) and those from lower-status social class backgrounds (i.e., first-generation or low-income).

**Comparing social class to race in higher education.**Do cross-class interactions in college show the same pattern as cross-race interactions? On the one hand, social class and race differ in several respects that suggest they may not organize intergroup interactions in the same way. First, social class is less visible than race, or at the very least, can be more readily concealed (Aries, 2008; Wilkins, 2014). Second, given prevalent cultural narratives in the U.S. that emphasize how hard work and individual effort—rather than one’s social class background—shape life outcomes, social class in the U.S. may be a less defined, central, or intractible social identity for students compared to race (Banks, 2007; Ostrove & Cole, 2003). Lastly, compared to race, social class is less institutionalized on campus in that there are fewer communities and resources specific to social class. This relative dearth of institutional recognition may further render social class as less visible and salient than race. If students are unaware of others’ social class background or if it is less salient to them, it is less likely to lead to the experience of stress and threat associated with intergroup interaction.

Despite these differences in visibility and recognition, there is also evidence that social class may organize interactions in ways that are similar to race. First, research demonstrates that people are better at detecting social class than one might expect. With only minimal information (e.g., facial cues), individuals can identify others’ social class with some degree of accuracy (Bjornsdottir & Rule, 2017; Côté et al., 2017; Kraus, Piff, & Keltner, 2009; Kraus, Torrez, Park, & Ghayebi, 2019). Second, social class is a meaningful identity, particularly for those at extreme ends of the class spectrum (Aries & Seider, 2005; Martin, Williams, & Young, 2018). For example, similar to race, students’ social class backgrounds can be a source of stereotype threat that undermines their performance in school (Croizet & Claire, 1998; Goudeau & Croizet, 2017). Students from lower-class backgrounds also report experiencing classism from their university and peers (Langhout, Drake, & Rosselli, 2009). Lastly, colleges and universities are increasingly implementing offices and programs dedicated to first-generation and low-income issues (Piper, 2018).

**Frequency, quality, and consequences of cross-class interactions.** Together, these findings suggest that although social class is less externally visible, less salient, and less likely to be institutionally-recognized than race, it is still likely to organize intergroup interactions in a similar manner. We therefore expect that the frequency, quality and consequences of cross-class interactions in college will mirror those of cross-race interactions. Accordingly, we hypothesize:

(H4) Students will report fewer meaningful cross-class interactions than would be expected at chance given the social class diversity of their student body.

(H5) Students will experience more threat, less satisfaction, and less perspective-taking in cross-class interactions compared to same-class interactions.

(H6) Cross-class interactions will improve students’ feelings of inclusion in their universities (i.e., as indexed by sense of belonging and social identity threat), which in turn will improve their academic performance (i.e., college GPA).

As with cross-race interactions, it is unclear whether these effects will differ for individuals from different-status social class backgrounds. To identify any differences between students based on their own social class backgrounds, we compared the frequency, quality, and consequences of cross-class interactions between students who are continuing-generation and middle-to-high-income and students who are first-generation or low-income.

**Study Overview**

In the current study we investigated three aspects of meaningful cross-race and cross-class interactions in higher education. First, we investigated the *frequency* of cross-race and cross-class interactions to determine whether students report these interactions at a rate that is proportional to the diversity of their student body. Second, we examined the *quality* of cross-race and cross-class interactions, investigating the extent to which students experience threat, satisfaction, and perspective-taking in these interactions compared to same-race and same-class interactions. Lastly, we investigated the *consequences* of cross-race and cross-class interactions for students’ feelings of inclusion in college (i.e., sense of belonging and social identity threat) and academic performance (i.e., GPA). To address these questions, we leveraged a longitudinal design with daily diary methods, in which the frequency of intergroup interactions in the beginning of the year predicted feelings of inclusion and academic performance throughout the school year. We also explored whether each of these effects differed by students’ own race and social class background.

**Method**

**Participants and Procedure**

Students were recruited from two universities as part of a larger study on belonging and achievement in college[[3]](#footnote-3). To achieve a desired power of .90, we recruited as many participants as possible from the original study to participate in the daily diary study. With a power of .90, an apriori power analysis indicated a sample size of 413 participants was required to detect a small (*ηp2*= .030) interaction effect (i.e., the main analysis for our outcomes of interest). Of the 824 students who participated in the larger study, we successfully recruited 552 (69%) students to participate in an additional daily diary study. Our analyses involved predicting end-of-year survey outcomes from the daily diary survey data, and therefore required data from both the daily diary and end-of-year survey. We therefore only included participants who completed at least one daily diary survey and the end-of-year survey, yielding a final sample of 416 participants.

Students in the sample had a mean age of 18.12 years (*SD* = .60). The sample included: 297 women, 117 men, and 2 gender-nonconforming students; 137 Black, Latinx, and Native American students and 279 White and Asian students; 254 first-generation or low-income students and 162 continuing-generation and high-income students.

Students participated at two times during their first year of college. First, consistent with methods used in previous daily diary studies (Birditt, Fingerman, & Almeida, 2005; Ferguson, Nguyen, & Iturbide, 2017; Nezlek, 1993), students completed eight daily diary surveys over the course of the first term of the academic year. Second, at the end of the year, students completed a final survey that included measures assessing their feelings of inclusion in college.[[4]](#footnote-4)

The daily diary methods we used to measure *meaningful*[[5]](#footnote-5) cross-race interactions were closely adapted from methods used by Trawalter and colleagues (2012). Following Trawalter et al. (2012), for each of the eight daily diary surveys, students were prompted to report up to five of “the most meaningful” interactions they had within the past 24 hours. After listing relevant individuals using their initials, participants rated the quality of each interaction. Specifically, participants indicated how how stressful and threatening each interaction was, how well it went, how much they felt like both parties understood each other, how much empathy they felt for the other person, and the extent to which they took the other person’s perspective[[6]](#footnote-6). Participants then reported the perceived gender, race, and social class background of each interaction partner. For social class background, participants indicated whether their partner, (a) “Does not have college-educated parents and/or is low income,” (b) “Has college educated parents and is middle income” or (c) “Has college educated parents and is wealthy.” Lastly, students reported on their sense of belonging for each day. We documented a total of 11,460 interactions in the daily diaries.

**Measures**

**Frequency of interactions.** To capture the frequency of cross-race and cross-class interactions, we categorized each interaction as (a) either same-race or cross-race and (b) either same-class or cross-class. Because these classifications relied on students’ self-reports of their partners’ social group memberships, they primarily captured students’ *perceived* same- or cross-race and same- or cross-class interactions. While students’ perceptions of others’ social group memberships can be subject to error and bias, such perceptions are still likely to play a major role in shaping students’ experiences of everyday interactions in college (e.g., feelings of threat, acceptance; Crisp & Turner, 2009; Dovidio, Eller, & Hewstone, 2011). Given our focus on students’ everyday interactions in college, using their perceptions of their interaction partners to assess cross-race and cross-class interactions is an ecologically-valid method.

To categorize same-race and cross-race interactions, we distinguished between students who were members of higher-status racial groups (i.e., White and Asian; *n* = 279) and those who were members of underrepresented racial minority (URM) groups afforded relatively lower status on campus (i.e., Black, Latinx, or Native; *n* = 137). For URM students, *same-race interactions* were those with other underrepresented racial minority students; *cross-race interactions* were those with White and Asian students. For White and Asian students, *same-race interactions* were those with other White and Asian students; *cross-race interactions* were those with students who were underrepresented racial minorities. Of the 11,460 interactions, we were able to categorize 11,368 as same-race or cross-race.

Following the ways in which previous research operationalized students’ social class backgrounds, same-class or cross-class interactions were categorized using students’ parental education and household income.[[7]](#footnote-7) We classified students as coming from lower-status social class backgrounds (i.e., lower and working-class) if they were the first in their families to attend college or had low household incomes (*n* = 254). We classified students as coming from higher-status social class backgrounds (i.e., middle and upper-class) if they had at least one parent with a college degree and middle-to-high household incomes (*n* = 162). Throughout the manuscript, we refer to students from lower-status social class backgrounds as *working-class* (WK), whereas we refer to students from higher-status social class backgrounds as *middle-class* (MD). For WK students, *same-class interactions* were those with students who did not have college-educated parents or who had low household incomes; *cross-class interactions* were those with students with a college-educated parent and middle to high household incomes. For MD students*, same-class interactions* were those with students with a college-educated parent and middle to high household incomes; *cross-class interactions* were those with students who did not have college-educated parents or who had low household incomes. Of the 11,460 interactions, we were able to code 11,370 as same-class or cross-class.

**Quality of interactions**. We examined three aspects capturing the quality of cross-race and cross-class interactions: threat, satisfaction, and perspective-taking. *Threat* of interactions was calculated by taking the mean of stressful and threatening ratings. *Satisfaction* of interactionswas calculated by taking the mean of understanding and “went well” ratings. *Perspective-taking* was calculated by taking the mean of empathy and perspective ratings. Confirmatory factor analyses supported these categories, factor loadings > .67.

**Consequences of interactions.** We examined two important consequences of cross-race and cross-class interactions. First, we examined students’ GPA scores as objective indicators of their academic performance. Students’ end-of-year GPAs were obtained directly from each university’s registrars office. Second, we examined students’ feelings of inclusion in their college environment as a potential mediator of the positive effect of cross-group interactions on academic performance. Feelings of inclusion were assessed with two related but conceptually distinct constructs: sense of belonging and social identity threat.

Sense of belonging captured more diffuse feelings of inclusion in the college environment. We measured sense of belonging on both a daily and global scale. *Daily experience of belonging* (*daily belonging*) was measured with a single dichotomous item administered in the eight daily diaries. For each day, students indicated whether, overall, they felt like they belonged (1) or did not belong (0) that day. Responses were averaged such that the score for each participant represented the percent of days they reported feeling like they belonged. For example, if a student reported feeling she belonged in 4 out of the 8 daily diaries, her final score would be 0.5, or a feeling of daily belonging 50% of the time and of not belonging 50% of the time. *Global experience of belonging* (*global belonging*) was assessed using a 15-item scale that measured the extent to which students generally felt that they belonged at their college (α = .90; Walton & Cohen, 2007). For example, students indicated the extent to which they agreed that “[This university] is a place for students like me,” and that “I feel like an outsider at [this university]”. Items were on a 7-point scale (1 = strongly disagree, 7 = strongly agree).

*Social identity threat* was measured using three items (α = .52) that assessed the extent to which students felt their social backgrounds were included or a source of threat in their college environments. While social identity threat and sense of belonging both capture students’ feelings of inclusion in college, social identity threat is more explicitly tied to students’ social group memberships. For example, social identity threat items included: “Students at my college are accepting of people who have diverse backgrounds” and “Other students at my college make unfair assumptions about me based on my background.” Items were on a 7-point scale (1 = strongly disagree, 7 = strongly agree).

**Results and Discussion**

**Frequency of Cross-Race and Cross-Class Interactions**

**Analytic approach*.*** To examine the extent to which students’ cross-race and cross-class interactions reflected the diversity of their student bodies, we computed three scores for each student that captured the frequency of these cross-group interactions. First, we computed students’ *expected* rate of cross-race and cross-class interaction. This score represented the rate of cross-race/cross-class interactions that would be expected at chance for each student given the race/social class diversity of the student body and the race/social class background of the student. For example, if John is a White student at University A, where 23% of the student body is composed of URM students, then we would expect that 23% of his interactions would be cross-race interactions with URM students (*expected rate* = .23).

Second, we computed students’ *reported* rate of cross-race and cross-class interaction by taking the ratio of interactions that students reported as cross-race/cross-class to the total number of interactions reported. For example, if 4 out of 40 of John’s interactions were with URM students, then 10% of John’s interactions were cross-race (*reported rate* = .10).

Third, we computed the *difference* between reported and expected rates of cross-race and cross-class interactions for each student. In the case of John, his *reported* rate of cross-race interactions was .10, but his expected rate of cross-race interactions was .23. The difference between the two scores is -.13, meaning that John reported 13% fewer cross-race interactions than expected at chance.

To analyze difference scores, we used intercept-only regression models to determine if the mean difference between expected and reported rates of cross-race and cross-class interactions was significantly different than zero. To compare lower- and higher-status groups, we entered race (URM vs. White and Asian) and social class background (WK vs. MD) into their respective models. This allowed us to first test whether, within each group, the mean difference between expected and reported rates of cross-race and cross-class interactions was significantly different from zero. It also allowed us to test whether rates for lower-status groups (i.e., URM and WK students) and higher-status groups (i.e., White/Asian and MD students) were significantly different from each other.

**Cross-race interactions.** We hypothesized that students would report fewer cross-race interactions than would be expected at chance given the racial diversity of their student body. The mean expected rate of cross-race interactions was .41, indicating that if students were to interact at random, 41% of their interactions would be cross-race interactions. However, the mean reported rate of cross-race interactions was only .21, indicating that only 21% of students’ interactions were reported as cross-race. The intercepts-only regression model revealed that the difference between reported and expected rates of cross-race interactions was statistically significant, *b* = -.21, *t* = -17.27, *p* < .001, 95% CI [-.24,-.19]. These findings suggest that students' interactions in college are persistently organized by race, and specifically support our hypothesis that students report fewer cross-race interactions than expected at chance.



*Figure 1*. Expected versus reported rates of cross-race interactions for White/Asian and underrepresented minority (URM) college students. The difference between expected and reported rates was significant for both White/Asian and URM students.

Next, we sought to determine whether patterns of cross-race interaction differed between students from lower-status race groups (i.e., URM students) and those from higher-status race groups (i.e., White/Asian students). Figure 1 illustrates expected versus reported rates of cross-race interactions for each group. For URM students, the difference between expected and reported rates of cross-race interactions was statistically significant, *b* = -.44, *t* = -26.14, *p* < .001, 95% CI [-.47,-.40]. Only 28% of URM students’ interactions were reported as cross-race, compared to the 72% that was expected at chance. For White and Asian students, the same pattern was evident, *b* = -.10, *t* = -8.73, *p* < .001, 95% CI [-.13,-.08]. Only 16% of White and Asian students’ interactions were reported as cross-race, compared to the 26% that was expected at chance. Although both URM and White and Asian students reported fewer cross-race interactions than expected at chance, this difference was far greater for URM students (44% difference) compared to White and Asian students (10% difference), *b* = .33, *t* = 16.38, *p* < .001, 95% CI [.29,.37].

**Cross-class interactions**. We hypothesized that social class would organize college students’ interactions in a manner similar to race. Specifically, we hypothesized that students would report fewer cross-class interactions than would be expected at chance given the social class diversity of their student body. The mean expected rate of cross-class interactions was .55, indicating that if students were to interact at random, 55% of their interactions would be cross-class interactions. However, the mean reported rate of cross-class interactions was .39, indicating that only 39% of students’ interactions were cross-class. The intercepts-only regression model revealed that the difference between reported and expected rates of cross-class interactions was statistically significant, *b* = -.16, *t* = -10.97, *p* < .001, 95% CI [-.18,-.13]. These findings suggest that students' interactions in college are persistently organized by social class as well as race, and specifically support our hypothesis that students report fewer cross-class interactions than expected at chance.



*Figure 2*. Expected versus reported rates of cross-class interactions for college students from working-class backgrounds (WK) and students from middle-class backgrounds (MD). The difference between expected and reported rates were significant for both WK and MD students.

Next, we sought to determine whether patterns of cross-class interaction differed between students from lower-status social class backgrounds (i.e., WK students) and those from higher-status social class backgrounds (i.e., MD students). Figure 2 illustrates expected versus reported rates of cross-class interactions for each group. For WK students, the difference between expected and reported rates of cross-class interactions was statistically significant, *b* = -.12, *t* = -6.49, *p* < .001, 95% CI [-.15,-.08]. On average, only 58% of WK students’ interactions were reported as cross-class, compared to the 70% that was expected at chance. For MD students, the same pattern was evident, *b* = -.22, *t* = -9.71, *p* < .001, 95% CI [-.26,-.17]. Only 9% of MD students’ interactions were reported as cross-class, compared to the 31% that was expected at chance. Although both WK and MD students reported fewer cross-class interactions than expected at chance, this difference was greater for MD students (22% difference) compared to WK students (12% difference), *b* = .10, *t* = 3.55, *p* < .001, 95% CI [.05,.16].

|  |  |  |  |
| --- | --- | --- | --- |
| Table 1 | | | |
| *Difference between expected and reported rates of cross-race and cross-class interactions* | | | |
|  | **Difference Score** | **t-value** | **95% CI** |
| *Cross-race Interactions* | | | |
| Total | -.21 | -17.27\*\*\* | [-.24, -.19] |
| URM | -.44a | -26.14\*\*\* | [-.47, -.40] |
| White/Asian | -.10b | -8.73\*\*\* | [-.13, -.08] |
| *Cross-class Interactions* | | | |
| Total | -.16 | -10.97\*\*\* | [-.18, -.13] |
| WK | -.12a | -6.49\*\*\* | [-.15, -.08] |
| MD | -.22b | -9.71\*\*\* | [-.26, -.17] |
| *Note*. Difference scores were calculated by subtracting expected rates of cross-race/cross-class interaction from reported rates of interaction. Significant differences between the subgroups are indicated by different superscripted letters. URM = underrepresented minority students; WK = lower and working-class students; MD = higher and middle-class students; †.05<p<.10; \*.01<p<.05; \*\*.001<p<.01; \*\*\*p<.001 | | | |

In sum, we find that all students, regardless of their own race or social class background, reported fewer cross-race and cross-class interactions than would be expected at chance given the diversity of their student body (see Table 1 for overview). Students reported rates of cross-race interactions that were 20% lower than expected at chance, and rates of cross-class interactions that were 16% lower than expected at chance.

Although race and social class organized interactions in similar ways (i.e., fewer cross-group interactions than expected based on student bodies), our sub-group analysis revealed one way in which they diverged. For cross-race interactions, members of lower-status racial groups (i.e., URM students) reported fewer cross-race interactions than expected (44% fewer) compared to members of higher-status racial groups (i.e., White and Asian students; 10% fewer). This pattern was reversed for social class background, in which members of the higher-status group (i.e., MD students) reported fewer cross-class interactions than expected (22% fewer) compared to members of the lower-status group (i.e., WK students; 12% fewer).

These results could reflect meaningful differences in how status (in terms of race vs. class) organizes students’ interactions. Another possibility, however, is that MD students may simply fail to recognize when they are interacting with students from lower- and working class backgrounds (see Bjornsdottir and Rule [2017] for evidence supporting this possibility). We discuss these alternative interpretations further in the general discussion.

**Quality of Cross-race and Cross-Class Interactions**

**Analytic approach.** To examine the quality of students’ cross-race and cross-class interactions, we compared students’ experiences of threat, satisfaction, and perspective-taking in cross-race and cross-class interactions versus same-race and same-class interactions, respectively. We utilized linear mixed models in which ratings of threat, satisfaction, and perspective-taking were regressed on the fixed effect of interaction-type (cross-race vs. same-race; cross-class vs. same-class). To examine whether the quality of cross-race and cross-class interactions were the same for members of different-status group, in a second series of linear-mixed models we included the interaction between students’ race/social class background and interaction-type as a fixed effect. For all models, we controlled for students’ race, social class background, and gender, and assigned the intercepts of subject and of university as random effects.

**Quality of cross-race interactions.** We hypothesized that students would experience more threat, less satisfaction, and less perspective-taking in cross-race interactions compared to same-race interactions. Results did not reveal an effect of interaction-type (cross-race vs. same-race) on threat or perspective-taking, *p*’s > .15. However, as hypothesized, we found a main effect of interaction-type on satisfaction, *b* = -.08, *t* = -2.64, *p* = .008, 95% CI [-.14, -.02]. Students reported less satisfaction in their cross-race interactions compared to their same-race interactions.

Significant interactions between interaction-type and students’ race qualified these results. First, the extent to which cross-race interactions were less satisfying than same-race interactions depended on whether students were White/Asian or URM, *b* = .08, *t* = 2.61, *p* = .009, 95% CI [.02, .14]. Simple slopes analyses revealed that for URM students, cross-race interactions were significantly less satisfying that cross-race interactions, *b* = -.18, *t* = -3.68, *p* < .001, 95% CI [-.28, -.08]. However, for White and Asian students no difference emerged, *p* = .66. A similar interaction emerged for perspective-taking, *b* = .07, *t* = 2.12, *p* = .03, 95% CI [.00, .13]. URM students reported significantly less perspective-taking in cross-race interactions than in same-race interactions, *b* = -.13, *t* = -2.54, *p* = .01, 95% CI [-.23, -.03]. Again, for White and Asian students, no difference in perspective-taking emerged, *p* = .84. There was no interaction between students’ race and interaction-type on threat, *p* = .10.

In sum, these results provided partial support for our hypotheses. Participants experienced less satisfaction in cross-race versus same-race interactions, although they did not report more threat or less perspective-taking. However, sub-group analysis revealed that the lower quality of cross-race interactions was only evident for students from lower-status racial groups. URM students, but not White and Asian students, reported less satisfaction and perspective-taking in their cross-race interactions compared to their same-race interactions.

Counter to our hypotheses and previous findings (e.g., Stephan & Stephan, 1985), we did not find any differences in students’ experience of threat in their cross-race versus same-race interactions. This may be due to a floor effect, meaning that participants experienced their interactions as generally nonthreatening (i.e., the median response to threat items was a 1 out of 7). One reason students’ interactions may have been so nonthreatening is because students were prompted to recall their most meaningful interactions. In recalling meaningful interactions, students may have drawn on experiences with those with whom they were relatively more familiar and comfortable than the typical types of encounters studied in research on intergroup interactions (e.g., interactions with strangers).

**Quality of cross-class interactions.** We hypothesized that students would experience more threat, less satisfaction, and less perspective-taking in cross-class interactions compared to same-class interactions. As with race, results did not reveal an effect of interaction-type (cross-class vs. same-class) on threat. However, there were significant main effects of interaction-type on both satisfaction, *b* = -.09, *t* = -3.01, *p* = .002, 95% CI [-.16, -.03], and perspective-taking, *b* = -.13, *t* = -3.85, *p* < .001, 95% CI [-.19, -.06], such that students reported less satisfaction and perspective-taking in cross-class interactions compared to their same-class interactions.

Similar to the pattern observed for race, there was a marginally significant interaction between interaction-type and students’ social class background on perspective-taking, *b* = .07, *t* = 1.69, *p* = .09, 95% CI [-.01, .14]. Simple slopes analysis revealed that WK students reported less perspective-taking in cross-class interactions vs. same-class interactions, *b* = -.16, *t* = -4.19, *p* < .001, 95% CI [-.23, -.08]. For MD students, no differences in perspective-taking emerged, *p* = .69. The interaction between interaction-type and students’ social class background on satisfaction was not significant, *p* = .56. However, simple effects analyses revealed that the effects of interaction-type on satisfaction were primarily evident for WK students. That is, WK students reported less satisfaction in cross-class vs. same-class interactions, *b* = -.10, *t* = -2.91, *p* = .004, 95% CI [-.17, -.03], but MD students reported no difference in satisfaction, *p* = .34.

Diverging from cross-race interactions, there was a significant interaction between interaction-type and students’ social class background on threat, *b* = .09, *t* = 2.16, *p* = .03, 95% CI [-.01, .14]. Simple slopes analysis revealed that WK students actually experienced *less* threat in cross-class interactions than same-class interactions, while MD students experienced *more* threat in their cross-class interactions. However, neither of these effects reached significance, *p* = .13 and *p* = .10, respectively.

In sum, these results provide mixed support for our hypotheses. Participants experienced less satisfaction and less perspective-taking in cross-class interaction than in same-class interactions, but did not experience more threat. However, sub-group analysis revealed that the lower quality of cross-class interactions was only evident for students from lower-status social class backgrounds. WK but not MD students experienced less satisfaction and perspective-taking in their cross-class vs. same-class interactions. Furthermore, a significant interaction indicated that WK and MD students diverged in their experience of threat in these interactions, although there were no significant differences in threat between cross-class and same-class interactions within either group.

Overall, findings for the quality of cross-class interactions were similar to the findings for the quality of cross-race interactions. Both cross-race and cross-class interactions were rated as less satisfying and characterized by less perspective-taking than same-race and same-class interactions, but only by students from lower-status groups (i.e., URM and WK students). Further, neither cross-race nor cross-class interactions were reported as more threatening than same-race or same-class interactions.

Surprisingly, there were no effects of interaction-type on the quality of interactions for students from higher-status groups (i.e., White and Asian, MD students). The literature on intergroup interactions largely predicts that both majority and minority groups will experience intergroup interactions negatively or that majority groups will experience them more negatively than minority groups (Toosi et al., 2012). Social demand effects could be one possible explanation for why these cross-race and cross-class interactions did not differ for students from higher-status groups. For example, students from higher-status groups may have felt pressure to evaluate their intergroup partners positively in order to avoid appearing biased or prejudiced.

**Consequences of Cross-Race and Cross-Class Interactions for Academic Performance**

**Analytic approach.** To examine the consequences of cross-race and cross-class interactions for academic performance, we regressed students’ end-of-year GPA on their reported rates of cross-race and cross-class interactions. We calculated reported rates of cross-race and cross-class interactions by taking the ratio of cross-race/cross-class interactions to the total number of interactions (see analytic approach in Frequency of Cross-Race and Cross-Class Interactions). We used generalized linear models to account for the negatively skewed distribution of GPA scores. To examine whether the consequences of cross-race and cross-class interactions were the same for students from different-status groups, in a second series of regressions, we included the interaction between students’ race/social class background and their reported rates of cross-race and cross-class interactions. All models controlled for students’ race, social class background, gender, and university.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Table 2 | | | | |
| *Outcomes predicted by reported rates of cross-race or cross-class interactions (standardized beta coefficients)* | | | | |
|  | *Race* | | *Social Class* | |
|  | URM | White/Asian | WK | MD |
| *Academic Performance* |  |  |  |  |
| GPA | .06 (.02)\*\* | -.01 (.02) | .06 (.02)\* | -.02 (.06) |
| *Feelings of Inclusion* |  |  |  |  |
| Daily Belonging | .16 (.07)\* | -.13 (.07)† | .28 (.07)\*\*\* | -.20 (.22) |
| Global Belonging | .14 (.07)\* | -.10 (.07) | .23 (.07)\*\*\* | -.36 (.20)† |
| Social Identity Threat | -.22 (.06)\*\*\* | .03 (.06) | -.09 (.07) | .11 (.20) |
| *Note*. Values are standardized beta coefficients with their standard errors in parentheses. URM = underrepresented racial minority students; WK = students from working- and lower-class backgrounds; MD = students from middle- and higher-class backgrounds; †.05<p<.10; \*.01<p<.05; \*\*.001<p<.01; \*\*\*p<.001 | | | | |

**Cross-race interactions and academic performance.** We hypothesized that cross-race interactions would improve students’ academic performance. Our analyses revealed no main effect of cross-race interactions on GPA.

However, a significant interaction between cross-race interactions and students’ race revealed that the effects of cross-race interactions on GPA depended on students’ race, *b* = -.09, *t* = -2.29, *p* = .02, 95% CI [-.18, -.01]. Specifically, for URM students, higher rates of cross-race interactions reported during the first term of the year predicted higher GPAs at the end of the year (see Table 2 for statistics). However, for White and Asian students, cross-race interactions did not predict GPA.

**Cross-class interactions and academic performance.** As with cross-race interactions, we hypothesized that cross-class interactions would improve students’ academic performance. Our analyses revealed a main effect of cross-class interactions on GPA, *b* = .07, *t* = 2.20, *p* = .03, 95% CI [.01, .14], such that higher reported rates of cross-class interactions predicted higher GPAs.

There was not a significant interaction between students’ social class background and proportion of cross-class interactions on GPA, *p* = .27. However, simple slopes analysis revealed that the positive effect of cross-class interactions on GPA was driven by WK students. That is, for WK students, higher rates of cross-class interactions reported during the first term of the year predicted higher GPAs at the end of the year. However, for MD students, cross-class interactions did not predict GPA (see Table 2 for statistics).

Together these results illustrate that both cross-race and cross-class interactions have positive consequences for academic performance, but this benefit was specific to students from lower-status groups (i.e., URM and WK students). Cross-race and cross-class interactions had no effects on academic performance for White and Asian students and MD students.

**Consequences of Cross-Race and Cross-Class Interactions for Feelings of Inclusion**

**Analytic approach.** To examine the consequences of cross-race and cross-class interactions for feelings of inclusion in college, we regressed sense of belonging (daily and global) and social identity threat on reported rates of cross-race and cross-class interactions. To examine whether the consequences of cross-race and cross-class interactions were the same for students from different-status groups, in a second series of regressions, we included the interaction between students’ race/social class background and reported rates of cross-race/cross-class interactions. All analyses utilized linear regression models and controlled for students’ race, social class background, gender and university.

**Cross-race interactions and feelings of inclusion.** We hypothesized that cross-race interactions would increase students’ feelings of inclusion in college as measured by sense of belonging (i.e., daily and global belonging) and social identity threat. Our analyses revealed no main effects of cross-race interactions on the daily or global measures of belonging. There was, however, a significant main effect of cross-race interactions on social identity threat, such that higher reported rates of cross-race interactions predicted lower levels of social identity threat, *b* = -.54, *t* = -2.14, *p* = .03, 95% CI [-1.04, -.04].

The effects of cross-race interactions on each of the three measures were qualified by significant interactions with students’ race: daily belonging: *b* = -.17, *t* = -2.79, *p* = .006, 95% CI [-.30, -.05], global belonging: *b* = -.52, *t* = -2.40, *p* = .02, 95% CI [-.95, -.09], and social identity threat: *b* = .53, *t* = 2.12, *p* = .01, 95% CI [.17, 1.19]. For URM students, higher reported rates of cross-race interactions predicted higher levels of daily and global belonging and lower levels of social identity threat (see Table 2 for statistics). However, for White and Asian students, cross-race interactions did not predict outcomes on any of the measures. The one exception to this was a marginally significant negative effect of cross-race interactions on White and Asian students’ daily belonging.

As with academic performance, cross-race interactions had significant positive effects on feelings of inclusion for students from lower-status groups (i.e., URM students). This was evident both for students’ more diffuse sense of belonging, as well as their experiences of social identity threat that were more explicitly tied to their social group memberships.

**Cross-class interactions and feelings of inclusion.** As with cross-race interactions,we expected that cross-class interactions would increase students’ feelings of inclusion in college as measured by sense of belonging (daily and global) and social identity threat. Unlike cross-race interactions, there was no main effect of cross-class interactions on social identity threat. Furthermore, there were significant main effects of cross-class interactions on daily belonging, *b* = .15, *t* = 3.33, *p* < .001, 95% CI [.06, .24], and global belonging, *b* = .41, *t* = 2.58, *p* = .01, 95% CI [.10, .72]. These results showed that higher reported rates of cross-class interactions predicted higher levels of both daily and global belonging.

However, the effects of cross-class interactions on sense of belonging were qualified by significant interactions with students’ social class background: daily belonging: *b* = -.16, *t* = -2.09, *p* = .04, 95% CI [-.31, -.01], global belonging: *b* = -.71, *t* = -2.70, *p* = .007, 95% CI [-1.23, -.19]. For WK students, higher reported rates of cross-class interactions predicted higher levels of daily and global belonging. For MD students, cross-class interactions did not predict daily belonging and had a marginally significant negative effect on global belonging (see Table 2 for statistics). Unlike cross-race interactions, there was no interaction between students’ social class background and cross-class interactions on social identity threat.

Overall, the effects of cross-class interactions on feelings of inclusion (i.e., sense of belonging and social identity threat) were similar to those of cross-race interactions. Specifically, higher reported rates of cross-class interactions predicted higher daily and global belonging for students from lower-status groups (i.e., WK students). However, unlike cross-race interactions, cross-class interactions did not predict lower social identity threat for WK students. As social identity threat captures feelings of inclusion that are tied specifically to one’s social group memberships, this finding suggests that social class is a less salient social group membership or identity in WK students’ interactions than race is in URM students’ interactions. That is, while both WK and URM students may be likely to question their compatibility with their college, WK students may be less likely than URM students to tie this uncertainty to their backgrounds or social group memberships.

**Feelings of Inclusion Mediating the Effects of Cross-Race, Cross-Class Interactions on Academic Performance**

**Analytic approach.** We hypothesized that cross-race and cross-class interactions have positive consequences for GPA, in part, by increasing students’ feelings of inclusion. As expected, cross-race and cross-class interactions predicted students’ academic performance and also predicted students’ feelings of inclusion, but did so in different ways. Specifically, cross-race interactions predicted higher sense of belonging (daily and global) and lower social identity threat, whereas cross class interactions only predicted higher sense of belonging (daily and global). As described below, we took these divergent effects into consideration when building and testing our mediation models.

We conducted two moderated mediation analyses to examine inclusion as a mechanism linking cross-race and cross-class interactions to academic performance (see Figure 3). In building the models, we first collapsed daily belonging and global belonging into a single variable labeled *sense of belonging.* Next, given the different effects of cross-race and cross-class interactions on feelings of inclusion, we included different mediators for each model*.* The model for cross-race interactions included both sense of belonging and social identity threat as mediators. In contrast, the mediation model for cross-class interactions included only sense of belonging as a mediator. Lastly, to examine whether these mediation effects were the same for students from different-status social groups, we included students’ race and social class background as moderators of the cross-race and cross-class mediation models, respectively.

Final models are illustrated in Figures 3a and 3b. In Figure 3a, cross-race interactions predict higher sense of belonging and lower social identity threat, which in turn predict better academic performance; this mediation effect, however, depends on students’ race. In Figure 3b, cross-class interactions predict higher sense of belonging, which in turn predict better academic performance; this mediation effect, however, depends on students’ social class background. All moderated mediation models were analyzed using the PROCESS macro for SPSS with 5,000 bootstrap samples (Hayes, 2013, model 59).



*Figure 3.* Moderated mediation models: (a) social identity threat and sense of belonging (i.e., daily experience of belonging and global experience of belonging) mediate the link between cross-race interactions and GPA, students’ race moderates the mediation model; (b) sense of belonging mediates the link between cross-class interactions and GPA, students’ social class background moderates the mediation model.

**Social identity threat and sense of belonging mediating the effect of cross-race interactions on GPA.** We expected that for URM students, but not for White and Asian students, sense of belonging (as indexed by a composite of both daily belonging and global belonging) and social identity threat would mediate the effect of cross-race interactions on GPA.

First, we report the results for sense of belonging as a mediator. The index of moderated mediation for sense of belonging was not statistically significant, *index* = -.07, 95% CI [-.21,.02], indicating that students’ race did not moderate the mediating role of sense of belonging on GPA. In other words, the mediation model for sense of belonging was not significantly different for URM students vs, White and Asian students. Indeed, separate mediation models for each group revealed that the indirect effect of sense of belonging on GPA was not statistically significant for either URM students, *indirect effect* = .03, 95% CI [-.04, .14], or White and Asian students, *indirect effect* = -.04, 95% CI [-.15, .003].

Next, we report the results for social identity threat as a mediator. Unlike belonging, the index of moderated mediation for social identity threat was statistically significant, *index* = -.11, 95% CI [-.29, -.01], indicating that students’ race moderated the mediating role of social identity threat on GPA. That is, the mediation model for social identity threat was significantly different for URM vs. White and Asian students. As expected, for URM students, the indirect effect of social identity threat was statistically significant, *indirect effect* = .11, 95% CI [.01, .29]. However, for White and Asian students, the indirect effect of social identity threat was not significant, *indirect effect* = -.002, 95% CI [-.06, .02].



*Figure 4.* Social identity threat mediates the effect of cross-race interactions on GPA for underrepresented minority students.

Figure 4 illustrates the significant mediation model for URM students revealed by the moderated mediation analysis. For URM students, cross-race interactions reduced social identity threat, *b* = -1.21, *t* = -3.37, *p* < .001, 95% CI [-1.92, -.50], which, in turn, predicted higher GPA scores, *b* = -.09, *t* = -2.54, *p* = .01, 95% CI [-.16, -.02]. Finally, when accounting for the indirect effect of social identity threat on GPA, the direct effect of cross-race interactions on GPA was only marginally significant, *p* = .07.

These results demonstrate that cross-race interactions improved URM students’ academic performance primarily by reducing social identity threat. Although cross-race interactions also increased sense of belonging, social identity threat was the factor that uniquely explained how cross-race interactions improved URM students’ academic performance.

**Sense of belonging mediating the effect of cross-class interactions on GPA.** We hypothesized that for WK students, but not for MD students, sense of belonging (as indexed by a composite of both daily belonging and global belonging) would mediate the effect of cross-class interactions on GPA.

The index of moderated mediation for sense of belonging was statistically significant, *index* = -.09, 95% CI[-.21, -.00], indicating that students’ social class background significantly moderated the mediating role of sense of belonging on GPA. That is, the mediation model for sense of belonging was significantly different for WK vs. MD students. As expected, for WK students, the indirect effect of sense of belonging was statistically significant, *indirect effect* = .08, 95% CI [.03, .17]. However, for MD students, the indirect effect of belonging was not significant, *indirect effect* = -.01, 95% CI [-.11, .06].



Figure 5. Sense of belonging mediates the effect of cross-class interactions on GPA for working- and lower-class students.

Figure 5 illustrates the significant mediation model for WK students revealed by the moderated mediation analysis. For WK students, cross-class interactions increased sense of belonging, *b* = .38, *t* = 3.29, *p* = .001, 95% CI [.15, .60], which, in turn, predicted higher GPA scores, *b* = .20, *t* = 2.78, *p* = .006, 95% CI [.06, .35]. When accounting for the indirect effect of sense of belonging on GPA, the direct effect of cross-class interactions was no longer significant, *p* = .08.

Although both cross-class and cross-race interactions improved the respective academic performance of WK students and URM students they did so through different mechanisms. For WK students, cross-class interactions improved grades by increasing sense of belonging, while cross-race interactions improved grades for URM students by reducing social identity threat. These findings suggest that there are differences in how WK students and URM students make sense of and respond to their social group membership in college. We explore the theoretical implications of these findings further in the general discussion.

**Exploratory Analysis: The Intersection of Race and Social Class Background**

Throughout our analyses, we separately examined how students’ race versus social class backgrounds organize their cross-race and cross-class interactions. This choice allowed us to compare the degree to which social class functions in the same way as race in shaping the frequency, quality, and outcomes of interactions. However, considering them separately did not allow us to address the question of how the intersection of race and class might function together to organize cross-race and cross-class interactions. The question of how race and social class interact is important given that (1) URM students are disproportionately from WK backgrounds and (2) these students are potentially “doubly disadvantaged” and may experience the compounded effects of membership in two social groups that are afforded relatively lower status in higher education (Alon, 2007). To address the intersectionality between race and social class, we conducted exploratory analyses on our data to compare students from two lower-status social groups (i.e., doubly disadvantaged students) to students from only a single lower-status group.

The specific comparisons we could make were limited. The sample contained an adequate number of doubly disadvantaged students (i.e., URM students with WK backgrounds; *n* = 126) and students who were solely social class-disadvantaged (i.e., White and Asian students from WK backgrounds; *n* = 128). However, the sample had only a small number students who were solely race-disadvantaged (i.e., URM students from MD backgrounds; *n* = 11). Therefore, we were only able to examine differences in cross-class interactions between doubly disadvantaged and social-class disadvantaged students, and could not examine differences in cross-race interactions between doubly disadvantaged students and race-disadvantaged students.

Our exploratory analysis asked whether the frequency, quality, and consequences of cross-class interactions differed between students who were doubly disadvantaged and those who were solely social-class disadvantaged. The only significant difference that emerged was in the frequency of cross-class interactions. Doubly disadvantaged students reported significantly fewer cross-class interactions than those who were only social class-disadvantaged, *p* < .001. In fact, while reported rates of cross-class interactions were 23% lower than expected at chance for doubly disadvantaged students (i.e., URM students from working-class backgrounds), rates of cross-class interactions did not differ from chance for students who were only class-disadvantaged (i.e., White and Asian students from working-class background). There were no significant differences between doubly disadvantaged and class-disadvantaged students in the quality or consequences of cross-class interactions.

Overall, these exploratory analyses show that cross-class interactions were equally beneficial for doubly disadvantaged and solely class-disadvantaged students, but that doubly disadvantaged students were far less likely to engage in them. These findings suggest that barriers to cross-class interactions may be tied to students’ membership in lower-status racial groups.

**General Discussion**

Colleges and universities across the U.S are more diverse than ever before. In these settings, it is critically important to understand the extent to which race and social class organize students’ interactions, as well as the impact of these interactions on students’ experiences and academic outcomes. Addressing these questions, the current study leveraged a longitudinal design and daily diary methods to examine the frequency, quality and consequences of meaningful cross-race and cross-class interactions in higher education. Together, our results show that race and social class persistently organize interactions. Specifically, we found that all students reported fewer cross-race and cross-class interactions than would be expected at chance given the diversity of their student bodies. Furthermore, underrepresented racial minority students and those from working-class backgrounds experienced these cross-group interactions as lower quality (e.g., less satisfaction and less perspective-taking) than same-race and same-class interactions. Nevertheless, cross-race and cross-class interactions predicted better academic performance for these students. They did so through different processes: cross-race interactions improved racial minorities’ academic performance by reducing social identity threat, whereas cross-class interactions improved the academic performance of students from working-class backgrounds by increasing sense of belonging.

**Theoretical Contributions**

**How are cross-class interactions similar to cross-race interactions?** The present study offers one of the first examinations of cross-class interactions in higher education (and at sites of diversity more broadly) and provides novel insight into how social class organizes the frequency, quality and consequences of students’ interactions. Even though social class background is less visible, salient, and institutionally-recognized than race, we find that it nevertheless organizes interactions in several ways that are similar to race.

However, our results also highlighted two ways in which race and social class differed in their effects on students’ interactions. First, status seemed to play a different role in cross-race versus cross-class interactions. For cross-race interactions, members of lower-status racial groups (i.e., underrepresented minority students) reported far lower rates of cross-race interactions compared to members of higher-status racial groups (i.e., White and Asian students). In fact, despite their minority status, most of underrepresented minority students’ interactions—72%—were with other minority students. However, for cross-class interactions, students from higher-status social class backgrounds (i.e., middle-class backgrounds) reported lower rates of cross-class interactions than expected compared to those from lower-status social class backgrounds (i.e., working-class backgrounds). These divergent patterns may indicate that different mechanisms are responsible for shaping the frequency with which people participate in cross-race versus cross-class interactions.

Second, although both cross-race and cross-class interactions improved academic performance for students from lower-status groups, different mediating pathways explained these effects. For underrepresented racial minority students, cross-race interactions improved academic performance by decreasing social identity threat (e.g., “Other students at my college make unfair assumptions about me based on my background”). For students from working-class backgrounds, cross-class interactions improved academic performance by increasing sense of belonging (e.g., “I feel like an outsider…”). Although social identity threat and sense of belonging are conceptually linked, social identity threat is an experience more directly tied to an identity or social group membership, whereas sense of belonging is a more diffuse experience that need not be tied to a particular identity or social group membership. These divergent patterns of results suggest that race may play a more salient role in shaping how lower-status groups make sense of and respond to their intergroup interactions. For example, underrepresented racial minority students may be especially likely to attribute feelings of exclusion to their racial backgrounds, whereas working-class students may be unlikely to attribute these experiences to their social class backgrounds.

Together, these findings contribute to research on cross-race and cross-class interactions by demonstrating that although race and social class may share certain features (e.g., conferring status and one’s social rank relative to others), they are social groups which afford distinct experiences and consequences.

**Are the benefits of cross-group interactions specific to lower-status social groups?** The present study offers the first examination of the consequences of cross-race and cross-class interactions for college GPAs. Our findings reveal that cross-group interactions have positive consequences for academic performance primarily through effects on feelings of inclusion: that is, by decreasing underrepresented racial minority students’ experiences of social identity threat and increasing working-class students’ sense of belonging. Our results are generally consistent with a robust literature that shows the importance of feelings of comfort and inclusion for academic achievement. That is, research shows that improving underrepresented students’ feelings of inclusion in college has positive downstream consequences for their academic outcomes, retention in college, and career paths (e.g., Walton & Cohen, 2007). The present findings extend this previous research by highlighting intergroup interactions as potential pathways toward fostering inclusion and improving the academic outcomes of groups that are negatively-stereotyped and underrepresented in higher education.

We did not find academic benefits of cross-group interactions for majority group members. This may have been because we did not examine the types of outcomes of intergroup interaction that are most relevant to majority group members, such as cognitive complexity or civic engagement (Bowman, 2010, 2011). As Mendoza-Denton and Page-Gould (2008) explain, majority students have “less reason to doubt their acceptance in such institutions and are less likely to see minority-group friends as representative of the institution” (p. 937). If this study had instead examined outcomes that have been shown to emerge for majority group members, it may have found evidence of the benefits of cross-group interactions for all groups or for majority groups in particular. While previous research has demonstrated several benefits of cross-race interactions for majority group members, future research should examine the benefits of cross-class interactions for these individuals as well.

**Are everyday cross-race interactions higher quality than cross-race interactions in lab settings?** Although our results are largely consistent with previous research on cross-race interactions, we find that these interactions were generally less threatening and more satisfying than is usually demonstrated in the literature. In particular, White and Asian students did not experience less satisfaction, less perspective-taking, or more threat in their cross-race compared to same-race interactions. Similarly, underrepresented racial minority students did not experience more threat in their cross-race compared to same-race interactions.

It is possible that these findings are simply an artifact of our methods—i.e., the repetitive nature of the daily diary surveys could have led to more social demand to positively evaluate cross-race interactions. However, an alternative possibility is that these findings reflect an important insight into cross-race interactions that previous methods capture less often. That is, while most psychological research on cross-race interactions focuses on strangers interacting in artificial lab settings, daily diary methods are more likely to capture interactions in real life with individuals who may be relatively known or familiar to participants (MacInnis & Page-Gould, 2015). If this is the case, these results suggest that both lower- and higher-status racial groups experience far less threat in their intergroup interactions when they occur over time and with interaction partners with whom they have a relationship, as opposed to single interactions with unknown strangers in the lab.

**Practical Implications**

An important implication of the current research is that creating diverse spaces is not enough to engender meaningful intergroup interactions. This is important given that many of the benefits of diversity rely on individuals actually interacting with members of social groups different from their own (Bowman, 2010; Hurtado, 2005). Furthermore, our findings demonstrate that intergroup interactions may be one important pathway toward reducing race and social-class disparities in students’ experiences and academic outcomes in college. Therefore, any efforts to recruit members of underrepresented social groups and to diversify spaces are likely incomplete without strategies to encourage meaningful intergroup interactions.

Given the benefits of intergroup interactions we found for minority students (i.e., underrepresented racial minority students and those from working-class backgrounds), the current findings may appear to call into question the value of “identity safe spaces” on campuses that are designed to give students a space to interact with members of their own social groups (e.g., themed-houses). Rather than limiting interactions across groups, however, we contend that identity-safe spaces can be valuable in promoting intergroup interactions. Research on these spaces suggests that they serve an important function in reducing stress and anxiety—particularly for students who are most concerned about experiencing prejudice and discrimination due to their social group memberships (Rheinschmidt-Same, John-Henderson, Mendoza-Denton, 2016). Rather than limiting intergroup interactions, these spaces may instead foster them by buffering some of the threat and anxiety that would otherwise be associated with them.

**Limitations**

A key limitation of the current study is that classifications of interactions as “cross-race” or “cross-class” depended on students’ reports of their interaction partners’ race and social class. Although this method is common in research on intergroup interactions (e.g., Trawalter et al., 2012), we cannot be certain that our results reflect students’ *actual* intergroup interactions or instead students’ *perceived* intergroup interactions. However, we believe that focusing on students’ perceptions is an ecologically-valid starting point, as interactions in the real world are often based on people’s perceptions of their interaction partners, irrespective of the accuracy of those perceptions. Furthermore, anticipating a cross-group interaction can have powerful effects on individuals’ experiences (Crisp & Turner, 2009; Truong, Townsend, Smallets, & Stephens, under review), suggesting that in some ways perceived intergroup interactions may be just as important as actual intergroup interactions. Nevertheless, we acknowledge that some of the more objective or concrete benefits of intergroup interactions (e.g., cultural capital, social network ties) are likely to be specifically tied to interactions with individuals who are actually members of different social groups. Future research should extend the current findings by using indicators of an interaction partner’s social class background that are likely to be even more accurate, such as the partner’s own self-report.

Another potential limitation is that we could not fully address the question of intersectionality between race and social class. This is important given that many underrepresented racial minority students are disproportionately from working-class backgrounds. We conducted a limited examination of intersectionality in a set of exploratory analysis, which focused specifically on underrepresented racial minority students from working-class backgrounds. This analysis revealed that cross-class interactions are still highly beneficial for these “doubly disadvantaged students” but are less likely to occur than they are for their White and Asian peers from working-class backgrounds. Understanding the intersection between social class and race is increasingly important, and future research should focus on not only double disadvantaged students, but also the less-frequently considered group of underrepresented racial minority students who come from middle and higher-class backgrounds.

A final limitation is that, drawing on previous research, we focused on “meaningful” interactions. As such, our results may be limited to the more substantive (vs. brief or transactional) interactions that students have in college. We chose to ask about meaningful interactions because these are the interactions most relevant to our resaerch questions. Specifically, previous research suggests that substantive, involved, back-and-forth interactions are those that are most likely to shape students’ experiences (e.g., belonging) and academic outcomes in college (MacInnis & Page-Gould, 2015; Mendoza-Denton & Page-Gould, 2008; Shook & Clay, 2012). Future research should determine the extent to which the current findings extend to different types of interactions, from those that are brief or transactional in nature to those that are less positive or meaningful.

**Conclusion**

We opened this research by asking two questions: to what extent do students’ interactions reflect the diversity of their educational settings? And, when these intergroup interactions occur, how do they shape students’ experiences and outcomes in these settings? The current study suggests that while these interactions do happen, they occur far less often than they could given the diversity of student bodies. However, when they do occur, they have important experiential and academic benefits for students from historically underrepresented and marginalized groups. Therefore, an important implication of this work is that it is important to encourage students to engage in these cross-group interactions to fully realize the benefits of diversity on college campuses.

References

Alon, S. (2007). Overlapping disadvantages and the racial/ethnic graduation gap among students attending selective institutions. *Social Science Research*, *36*(4), 1475-1499.

Aries, E., & Seider, M. (2005). The interactive relationship between class identity and the college experience: The case of lower income students. *Qualitative Sociology*, *28*, 419–443. https://doi.org/10.1007/s11133-005-8366-1

Aries, Elizabeth. (2008). *Race and class matters at an elite college*. Philadelphia, PA: Temple University Press.

Banks, J. A. (2007). *Educating citizens in a multicultural society* (2nd ed.). New York, NY: Teachers College Press.

Bergsieker, H. B., Shelton, J. N., & Richeson, J. A. (2010). To be liked versus respected: Divergent goals in interracial interactions. *Journal of Personality and Social Psychology*, *99*(2), 248–264. https://doi.org/10.1037/a0018474

Birditt, K. S., Fingerman, K. L., & Almeida, D. M. (2005). Age differences in exposure and reactions to interpersonal tensions: A daily diary study. *Psychology and Aging*, *20*(2), 330–340. https://doi.org/10.1037/0882-7974.20.2.330

Bjornsdottir, R. T., & Rule, N. O. (2017). The visibility of social class from facial cues. *Journal of Personality and Social Psychology*, *113*, 530–546. https://doi.org/10.1037/pspa0000091

Bowman, N. A. (2010). College diversity experiences and cognitive development: A meta-analysis. *Review of Educational Research*, *80*(1), 4–33. https://doi.org/10.3102/0034654309352495

Bowman, N. A. (2011). Promoting participation in a diverse democracy: A meta-analysis of college diversity experiences and civic engagement. *Review of Educational Research*, *81*, 29–68. https://doi.org/10.3102/0034654310383047

Bowman, N. A. ., & Park, J. J. (2015). Not All Diversity Interactions are Created Equal: Cross-Racial Interaction, Close Interracial Friendship, and College Student Outcomes. *Research in Higher Education*, *56*(6), 601–621. https://doi.org/10.1007/s11162-015-9365-z

Chang, M. J. (1999). Does racial diveristy matter? The educational impact of a racially diverse undergraduate population. *Journal of College Student Development*, *40*(4), 377–395.

Chang, Mitchell J., Astin, A. W., & Kim, D. (2004). Cross-racial interaction among undergraduates: Some consequences, causes, and patterns. *Research in Higher Education*, *45*(5), 529–553. https://doi.org/10.1023/B:RIHE.0000032327.45961.33

Chetty, R., Friedman, J., Saez, E., Turner, N., & Yagan, D. (2017). Mobility report cards: The role of colleges in intergenerational mobility.

Côté, S., Kraus, M. W., Carpenter, N. C., Piff, P. K., Beermann, U., & Keltner, D. (2017). Social affiliation in same-class and cross-class interactions. *Journal of Experimental Psychology: General*, *146*(2), 269–285. https://doi.org/10.1037/xge0000258

Crisp, R. J., & Turner, R. N. (2009). Can Imagined Interactions Produce Positive Perceptions? Reducing Prejudice Through Simulated Social Contact. *American Psychologist*, *64*(4), 231–240. https://doi.org/10.1037/a0014718

Croizet, J., & Claire, T. (1998). Extending the concept of stereotype threat to social class: The intellectual underperformance of students from low socioeconomic backgrounds. *Personality and Social Psychology Bulletin*, *24*, 588–594. https://doi.org/10.1177/0146167298246003

Denson, N., & Chang, M. J. (2009). Racial diversity matters: The impact of diversity-related student engagement and institutional context. *American Educational Research Journal*, *46*(2), 322–353. https://doi.org/10.3102/0002831208323278

Dovidio, J. F., Eller, A., & Hewstone, M. (2011). Improving intergroup relations through direct, extended and other forms of indirect contact. *Group Processes and Intergroup Relations*, *14*(2), 147–160. https://doi.org/10.1177/1368430210390555

Dovidio, J. F., Hebl, M., Richeson, J. A., & Shelton, J. N. (2006). Nonverbal communication, race, and intergroup interaction. In V. Manusov & M. L. Patterson (Eds.), *The SAGE Handbook of Nonverbal Communication* (pp. 481–500). https://doi.org/10.4135/9781412976152.n25

Engle, J., & Tinto, V. (2008). *Moving beyond access: College success for low-income, first-generation students*. Washington, DC: Pell Institute for the Study of Opportunity in Higher Education (ERIC Document Reproduction Service No. ED504448).

Ferguson, G. M., Nguyen, J., & Iturbide, M. I. (2017). Playing up and playing down cultural identity: Introducing cultural influence and cultural variability. *Cultural Diversity and Ethnic Minority Psychology*, *23*(1), 109–124.

Goudeau, S., & Croizet, J. C. (2017). Hidden Advantages and Disadvantages of Social Class: How Classroom Settings Reproduce Social Inequality by Staging Unfair Comparison. *Psychological Science*, *28*(2), 162–170. https://doi.org/10.1177/0956797616676600

Gudykunst, W. B., & Shapiro, R. B. (1996). Communication in everyday interpersonal and intergroup encounters. *International Journal of Intercultural Relations*, *20*(1), 19–45. https://doi.org/10.1016/0147-1767(96)00037-5

Gurin, P., Dey, E., Hurtado, S., & Gurin, G. (2002). Diversity and Higher Education: Theory and Impact on Educational Outcomes. *Harvard Educational Review*, *72*(3), 330–367. https://doi.org/10.17763/haer.72.3.01151786u134n051

Hayes, Andrew F. (2013). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. New York, NY: The Guilford Press.

Hodson, G., Crisp, R. J., Meleady, R., & Earle, M. (2018). Intergroup Contact as an Agent of Cognitive Liberalization. *Perspectives on Psychological Science*, *13*(5), 523–548. https://doi.org/10.1177/1745691617752324

Hoxby, C. M., & Turner, S. (2019). *Measuring opportunity in U.S. higher education* (No. 25479).

Hurtado, S. (2005). The next generation of diversity and intergroup relations research. *Journal of Social Issues*, *61*(3), 595–610. https://doi.org/10.1111/j.1540-4560.2005.00422.x

Jones, E. B., & Jackson, J. D. (1990). College Grades and Labor Market Rewards. *The Journal of Human Resources*, *25*(2), 253–266. https://doi.org/10.2307/145756

Khoo, P., & Ost, B. (2018). The effect of graduating with honors on earnings. *Labour Economics*, *55*(2018), 149–162. https://doi.org/10.1016/j.labeco.2018.05.012

Kraus, M W, Piff, P. K., & Keltner, D. (2009). Social class, sense of control, and social explanation. *Journal of Personality and Social Psychology*, *97*, 992–1004. https://doi.org/10.1037/a0016357

Kraus, Michael W., Torrez, B., Park, J. W. L., & Ghayebi, F. (2019). The reproduction of social class in brief speech. *Proceedings of the National Academy of Sciences*.

Langhout, R. D., Drake, P., & Rosselli, F. (2009). Classism in the university setting: Examining student antecedents and outcomes. *Journal of Diversity in Higher Education*, *2*, 166–181. https://doi.org/10.1037/a0016209

Littleford, L. N., Wright, M. O., & Sayoc-Parial, M. (2005). White student’s intergroup anxiety during same-race and interracial interactions: A multimethod approach. *Basic and Applied Social Psychology*, *27*(1), 85–94. https://doi.org/10.1207/s15324834basp2701

Locks, A. M., Hurtado, S., Bowman, N. A., & Oseguera, L. (2008). Extending notions of campus climate and diversity to students’ transition to college. *Review of Higher Education*, *31*(3), 257–285. https://doi.org/10.1353/rhe.2008.0011

MacInnis, C. C., & Page-Gould, E. (2015). How Can Intergroup Interaction Be Bad If Intergroup Contact Is Good? Exploring and Reconciling an Apparent Paradox in the Science of Intergroup Relations. *Perspectives on Psychological Science*, *10*(3), 307–327. https://doi.org/10.1177/1745691614568482

Martin, G. L., Williams, B., & Reynolds Young, C. (2018). Understanding Social Class as Identity. *New Directions for Student Services*, *2018*(162), 9–18. https://doi.org/10.1002/ss.20258

Martinez, J. A., Sher, K. J., Krull, J. L., & Wood, P. K. (2009). Blue-collar scholars?: Mediators and moderators of university attrition in first-generation college students. *Journal of College Student Development*, *50*(1), 87–103. https://doi.org/10.1353/csd.0.0053.Blue-Collar

Mendes, W. B., Blascovich, J., Lickel, B., & Hunter, S. (2002). Challenge and threat during social interactions with White and Black men. *Personality and Social Psychology Bulletin*, *28*, 939–952. https://doi.org/10.1177/014616720202800707

Mendoza-Denton, R., & Page-Gould, E. (2008). Can cross-group friendships influence minority students’ well-being at historically white universities? *Psychological Science*, *19*(9), 933–939. https://doi.org/10.1111/j.1467-9280.2008.02179.x

Mollica, K. A., Gray, B., & Treviño, L. K. (2003). Racial homophily and its persistence in newcomers’ social networks. *Organization Science*, *14*(2), 123–136.

Murphy, M., & Zirkel, S. (2015). Race and belonging in school: How anticipated and experienced belonging affect choice, persistence, and performance. *Teachers College Record*, *117*(12), 1–40.

Nezlek, J. B. (1993). Interpersonal Relations and Group: The Stability of Social Interaction. *Journal of Personality and Social Psychology*, *65*(5), 930–941.

Ostrove, J.M., & Long, S. M. (2007). Social class and belonging: Implications for college adjustment. *The Review of Higher Education*, *30*, 363–389. https://doi.org/10.1353/rhe.2007.0028

Ostrove, Joan M., & Cole, E. R. (2003). Privileging class: Toward a critical psychology of social class in the context of education. *Journal of Social Issues*, *59*(4), 677–692. https://doi.org/10.1046/j.0022-4537.2003.00084.x

Page-Gould, E. (2012). To whom can I turn? Maintenance of positive intergroup relations in the face of intergroup conflict. *Social Psychological and Personality Science*, *3*(4), 462-470. doi: 10.1177/1948550611426937

Pascarella, E., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-generation college students: Additional evidence on college experiences and outcomes. *The Journal of Higher Education*, *75*, 249–284. https://doi.org/10.1353/jhe.2004.0016

Pascarella, E. T., Martin, G. L., Hanson, J. M., Trolian, T. L., Gillig, B., & Blaich, C. (2014). Effects of diversity experiences on critical thinking skills over 4 years of college. *Journal of College Student Development*, *55*(1), 86–92. https://doi.org/10.1353/csd.2014.0009

Pittman, L. D., & Richmond, A. (2007). Academic and psychological functioning in late adolescence: The importance of school belongin. *Journal of Experimental Education*, *75*(4), 270–290. https://doi.org/10.3200/JEXE.75.4.270-292

Rheinschmidt-Same, M., John-Henderson, N. A., & Mendoza-Denton, R. (2017). Ethnically-based theme house residency and expected discrimination predict downstream markers of inflammation among college students. *Social Psychological and Personality Science*, *8*(1), 102-111. https://doi.org/10.1177/1948550616662130

Shelton, N., Douglass, S., Garcia, R. L., Yip, T., & Trail, T. E. (2014). Feeling (Mis)Understood and Intergroup Friendships in Interracial Interactions. *Personality and Social Psychology Bulletin*, *40*(9), 1193–1204. https://doi.org/10.1177/0146167214538459

Shook, N. J., & Clay, R. (2012). Interracial roommate relationships: A mechanism for promoting sense of belonging at university and academic performance. *Journal of Experimental Social Psychology*, *48*(5), 1168–1172. https://doi.org/10.1016/j.jesp.2012.05.005

Soria, K. M., & Stebleton, M. J. (2013). Social capital, academic engagement, and sense of belonging among working-class college students. *College Student Affairs Journal*, *31*, 139–153.

Stearns, E., Buchmann, C., & Bonneau, K. (2009). Interracial friendships in the transition to college: Do birds of a feather flock together once they leave the nest? *Sociology of Education*, *82*(2), 173–195. https://doi.org/10.1177/003804070908200204

Stephan, W. G., & Stephan, C. W. (1985). Intergroup Anxiety. *Journal of Social Issues*, *41*(3), 157–175. https://doi.org/10.1111/j.1540-4560.1985.tb01134.x

Stephens, N. M., Townsend, S. S. M., Hamedani, M. G., Destin, M., & Manzo, V. (2015). A difference-education intervention equips first-generation college students to thrive in the face of stressful college situations. *Psychological Science*, *26*, 1556–1566. https://doi.org/10.1177/0956797615593501

Stephens, Nicole M., Hamedani, M. G., & Townsend, S. S. M. (2019). Difference matters: Teaching students a contextual theory of difference can help them succeed. *Perspectives on Psychological Science*, *14*, 156–174. https://doi.org/10.1177/1745691618797957

Stephens, Nicole M., Hamedani, M. H., & Destin, M. (2014). Closing the social-class achievement gap: A difference-education intervention improves first-generation students’ academic performance and all students’ college transition. *Psychological Science*, *25*, 943–953. https://doi.org/10.1177/0956797613518349

Strayhorn, T. L. (2008a). Fittin’ in: Do diverse interactions with peers affect sense of belonging for Black men at predominantly White institutions? *NASPA Journal*, *45*(4), 501–527.

Strayhorn, T. L. (2008b). Sentido de Partenencia: A hierarchical analysis predicting sense of belonging among Latino college students. *Journal of Hispanic Higher Education*, *7*(4), 301–320.

Thomas, S. L. (2000). Deferred costs and economic returns to college major, qua and performance. *Research in Higher Education*, *41*(3), 281–313. https://doi.org/10.1023/A:1007003510102

Toosi, N. R., Babbitt, L. G., Ambady, N., & Sommers, S. R. (2012). Dyadic interracial interactions: A meta-analysis. *Psychological Bulletin*, *138*(1), 1–27. https://doi.org/10.1037/a0025767

Trail, T. E., Shelton, J. N., & West, T. V. (2009). Interracial roommate relationships: Negotiating daily interactions. *Personality and Social Psychology Bulletin*, *35*(6), 671–684. https://doi.org/10.1177/0146167209332741

Trawalter, S., Adam, E. K., Chase-Lansdale, P. L., & Richeson, J. A. (2012). Concerns about appearing prejudiced get under the skin: Stress responses to interracial contact in the moment and across time. *Journal of Experimental Social Psychology*, *48*(3), 682–693. https://doi.org/10.1016/j.jesp.2011.12.003

Trawalter, S., Richeson, J. A., & Shelton, J. N. (2009). Predicting behavior during interracial interactions: A stress and coping approach. *Personality and Social Psychology Review*, *13*(4), 243–268. https://doi.org/10.1177/1088868309345850

Villalpando, O. (2002). The impact of diversity and multiculturalism on all students: Findings from a national study. *NASPA Journal*, *40*(1), 124–144.

Walpole, M. (2003). Socioeconomic status and college: How SES affects college experiences and outcomes. *Review of Higher Education*, *27*, 45–73. https://doi.org/10.1353/rhe.2003.0044

Walton, G. M., & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology*, *92*(2), 82–96. https://doi.org/10.1037/0022-3514.92.1.82

Wejnert, C. (2010). Social network analysis with respondent-driven sampling data: A study of racial integration on campus. *Social Networks*, *32*(2), 112–124. https://doi.org/10.1016/j.socnet.2009.09.002

West, T. V., Koslov, K., Page-Gould, E., Major, B., & Mendes, W. B. (2017). Contagious Anxiety: Anxious European Americans Can Transmit Their Physiological Reactivity to African Americans. *Psychological Science*, *28*(12), 1796–1806. https://doi.org/10.1177/0956797617722551

Wilkins, A. C. (2014). Race, Age, and Identity Transformations in the Transition from High School to College for Black and First-generation White Men. *Sociology of Education*, *87*(3), 171–187. https://doi.org/10.1177/0038040714537901

1. Some exceptions: Page-Gould, 2012; Shelton, Douglass, Garcia, Yip, & Trail, 2014; Wejnert, 2010; Trawalter, Adam, Chase-Lansdale, & Richeson, 2012. [↑](#footnote-ref-1)
2. Although they did not focus specifically on the frequency of cross-race interactions, Shook and Clay (2012) examined the effects of randomly assigned cross-race roommates on academic GPA and found that racial minority students with white roomates experience more belonging and higher GPAs than racial minority students with racial minority roommates. [↑](#footnote-ref-2)
3. In this larger study, students were assigned to one of three intervention conditions aimed at improving their academic experience and outcomes. These intervention conditions did not affect any of the measures explored in the present study. Nevertheless, whenever possible, we entered intervention condition into our models as a control variable. Notably, results did not differ from models that did not control for condition. [↑](#footnote-ref-3)
4. The end-of-year survey contained a broad array of measures of interest to the larger intervention study, including university diversity climate, self-construal, intergroup warmth, respect and comfort, and multiethnic group identification. Our specific focus on measures that captured feelings of inclusion in the present research was theoretically driven by previous research demonstrating the importance of cross-group interactions for these experiences (e.g., Bowman & Park, 2015; Mendoza-Denton & Page-Gould, 2008; Strayhorn, 2008a). [↑](#footnote-ref-4)
5. We focused on meaningful interactions (e.g., substantive, involved, back and forth communication) rather than brief or transactional interactions (i.e., saying hello to someone, buying a product) because the literature suggests that more substantive interactions (e.g., friendships, roommates) are the types of interactions that are most likely to shape students’ academic experiences and outcomes (MacInnis & Page-Gould, 2015; Mendoza-Denton & Page-Gould, 2008; Shook & Clay, 2012). [↑](#footnote-ref-5)
6. Participants in Trawalter et al. (2012) did not rate the quality of their interactions for how much empathy they felt or the extent to which they took the other person’s perspective. [↑](#footnote-ref-6)
7. Consistent with previous research (e.g., Stephens, Townsend, Hamedani, Destin, & Manzo, 2015; Stephens, Hamedani, & Townsend, 2019; Stephens, Hamedani, & Destin, 2014) high and low household income was determined using students’ Pell Grant status. Students who were received Pell Grants were classified as having low-income households and students who did not receive Pell Grants were classified as having middle to high-income households. [↑](#footnote-ref-7)