
Interracial Roommate Relationships: Negotiating Daily Interactions

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Jobs, social group memberships, or living arrangements lead many people to interact every day with another person from a different racial background. Given that research has shown that interracial interactions are often stressful, it is important to know how these daily interactions unfold across time and what factors contribute to the success or failure of these interactions. Both members of same-race and mixed-race college roommate pairs completed daily questionnaires measuring their emotional experiences and their perceptions of their roommate. Results revealed that roommates in mixed-race dyads experienced less positive emotions and intimacy toward their roommates than did roommates in same-race dyads and that the experience of positive emotions declined over time for ethnic minority students with White roommates. Mediation analyses showed that the negative effects of roommate race were mediated by the level of intimacy-building behaviors performed by the roommate. Implications for future research and university policies are discussed.

Keywords: *interracial relationships; intimacy; dyads; daily diary; roommates*

In some areas of life, people encounter the opportunity to interact with someone outside of their racial group on a daily basis. A Black employee, for example, may find herself working on a business merger that requires her to interact with the same White female on multiple occasions. A White man may be assigned to live with a Latino man during his freshman year of college, creating a situation in which he may experience encounters

with the same out-group person on a frequent basis. The nature of these interactions is not static: The interactions take place in a rich environment in which relationships develop and impressions change over time. Initial expectations may be confirmed or disconfirmed, habits that were once closely monitored are revealed, people let their guard down and say things they would not normally say, and they reveal personal opinions (even ones that might best be left private). People forced to interact with each other through their jobs or other circumstances generally try to get along, but each person's initial efforts to get along may wane over time and be replaced by indifference or, at worst, hostility. These dynamics may be particularly important for coworkers, students, and so forth who are from different racial or ethnic backgrounds, because these sometimes subtle changes in behavior have very different meanings in interracial interactions than they do in same-race interactions (Sue et al., 2007).

In the present research, we attempt to highlight the richness of interracial interactions as they unfold with the same person across time in a naturally occurring setting. The goals of this research are twofold. First, the goal is to

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examine the extent to which people's emotions, intimacy levels, and desires to engage in future interactions are influenced by their partners' interpersonal behaviors during daily interracial interactions. Second, the goal is to investigate the extent to which people's emotions, intimacy levels, desire to engage in future interactions with their partners, and interpersonal behaviors fluctuate or remain stable across daily interracial compared to intraracial interactions. We address these issues from the perspective of both Whites and ethnic minorities, acknowledging that people's experiences during daily interracial interactions may differ for members of these groups.

Interpersonal Behaviors and Interactions

Interpersonal behaviors convey social meaning in interactions (Patterson, 1982). In addition, as posited by Reis and Shaver (1988) in their model of intimacy as an interpersonal process, behaviors can foster or inhibit intimate relationships. In particular, intimacy is enhanced when people self-disclose personal information, behave in a supportive and caring manner, are responsive to their partners (often by appearing interested and engaged), and show general levels of warmth and affection. Similarly, research on nonverbal communication suggests that behaviors play a key role in creating and maintaining intimate interactions (P. A. Anderson, Guerrero, & Jones, 2006). Specifically, research shows that interactions that involve high levels of positive involvement behaviors (Prager, 2000), such as smiling, mutual gaze, and forward lean, are associated with outcomes such as mutual partner liking, positive emotion, and desire to engage in future interactions (P. A. Anderson, 1999; Guerrero & Floyd, 2006). By contrast, large physical distance, eye contact avoidance, and speech disfluencies are distancing behaviors associated with dislike and can facilitate the termination of an interaction and/or a relationship.

Behaviors have been found to be especially crucial when people are becoming acquainted with out-group members. The research in this area has provided compelling evidence that making the distinction between nonverbal and verbal behaviors is critical for understanding when and why interactions are apt to go awry (Dovidio, Hebl, Richeson, & Shelton, 2006). For example, Dovidio, Kawakami, and Gaertner (2002) found that White participants with lower levels of self-reported (explicit) racial prejudice behaved in a more egalitarian way with Black partners than with White partners in their verbal behaviors, but those White participants with implicit racial biases displayed less positive nonverbal behaviors with Black partners than with White partners. Furthermore, whereas White participants' impressions of how friendly they behaved were correlated with the favorability of

their verbal behaviors but not with their nonverbal behaviors, their partners' impressions of White participants' friendliness were correlated with the nonverbal but not the verbal behaviors. In other words, in interracial interactions, Whites focus on their verbal behaviors, whereas their partners focus on their nonverbal behaviors, allowing room for misunderstandings to develop. Similar to the importance of the distinction between nonverbal and verbal behaviors, we argue that it is important to consider the distinction between positive and negative interpersonal behaviors; that is, the valence of behaviors is important.

In the present research, we are interested in the extent to which intimacy-building behaviors are more influential compared to intimacy-distancing behaviors for people's emotions and intimacy level during interracial interaction, and their desire to engage in future interactions with their out-group partners. Consistent with theorizing about the independence of positive and negative affect during interactions (Diener & Emmons, 1984; Feldman Barrett & Russell, 1998), we believe it is important to consider the independent nature of positive and negative behaviors in interracial interactions. Analogous to the findings regarding affective responses, it is possible that the absence of positive interpersonal behaviors does not mean the presence of negative interpersonal behaviors. Likewise, the presence of positive interpersonal behaviors does not mean the absence of negative interpersonal behaviors. This independent pattern is especially likely to occur in interracial interactions because Whites and ethnic minorities often have ambivalent attitudes about interacting with one another (Dovidio & Gaertner, 2004; Katz & Hass, 1988). Therefore, in a typical interracial interaction, Whites and ethnic minorities might simultaneously engage in intimacy-building (positive) behaviors and intimacy-distancing (negative) behaviors.

Based on prior research, we predicted that intimacy-building behaviors might loom larger than intimacy-distancing behaviors in interracial interactions. That is not to say that negative behaviors do not matter—they do have a detrimental effect on interactions—but subtle prejudice may be communicated more often through the omission of positive behaviors rather than through the commission of blatantly negative behaviors (Dovidio & Gaertner, 2004). Therefore, we predicted that intimacy-building behaviors would explain the differences in experiences commonly found between interracial and intraracial interactions. Specifically, we predicted that people's perceptions of their interaction partners' intimacy-building behaviors would mediate the relationship between type of interaction (interracial and intraracial) and their experiences (i.e., emotions, intimacy, desire to engage in future interactions) in interactions. We expected intimacy-distancing behaviors

to play some role in these relationships but not nearly the role that intimacy-building behaviors (or lack thereof) play.

Interracial Interactions Across Time

People are more interested in establishing relationships with racial in-group than out-group members (Levin, Taylor, & Caudle, 2007). In fact, when possible, Whites and ethnic minorities avoid contact with one another (Plant & Devine, 2003), although they are likely to blame their avoidance on the lack of interest of the other person (Shelton & Richeson, 2005). When interracial interactions do occur, they tend to be more stressful compared to intraracial interactions. Both Whites and ethnic minorities, for example, feel more negative affect when interacting with out-group compared to in-group members (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001; Littleford, Wright, & Sayoc-Parial, 2005). In addition, Whites and ethnic minorities feel less intimacy (e.g., closeness and liking) with out-group compared to in-group members (Gibbons & Olk, 2003; McPherson, Smith-Lovin, & Cook, 2001), and they react more negatively toward out-group members, including judgments about and behaviors toward out-group members (Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Fazio, Jackson, Dunton, & Williams, 1995). Furthermore, intergroup interactions are cognitively exhausting both for Whites and for ethnic minorities (Richeson & Shelton, 2007). Taken together, the picture is quite clear that interracial interactions are often strained and awkward, as illustrated by the negative affective, behavioral, and cognitive outcomes.

Becoming acquainted with someone takes time. Impressions may change across social situations and time. Likewise, a person's affective reactions and behaviors toward the other person, as well as desires about future interactions, may vary across time, sometimes improving but other times taking a downward turn. This, of course, is the case regardless of whether the interactions involve people of the same or different race. Interestingly, however, the majority of research that has illuminated the stressful nature of interracial interactions has involved paradigms in which people interact on one occasion. As a result, it is unclear the extent to which these negative effects remain the same when a person is interacting with the same out-group member across time. Although interracial interactions may be stressful initially, do they eventually improve, remain the same, or become worse across time? In order to understand which path is likely to occur, it is helpful to consider how people's interpersonal behaviors may change across time.

When people know they will interact with the same person on multiple occasions they are likely to display

interpersonal behaviors that facilitate a harmonious relationship. This may be relatively easy in intraracial interactions because people are genuinely more comfortable in such situations. In interracial interactions, however, engaging in intimacy-building behaviors may require effort and conscious attention. Given that sustaining such effort over time may be psychologically exhausting, engaging in intimacy-building behaviors is apt to subside over time because people cannot maintain the energy. This decline is likely to be coupled with one's interaction partner experiencing less positive emotion and intimacy. That is, because positive interpersonal behaviors play a key role in creating intimacy, their decline by one partner is likely to spill over to a decline in positive affect by the other partner. Given that interracial interactions are more novel and anxiety provoking for Whites compared to ethnic minorities (Ickes, 1984), it might be more difficult for Whites to put forward their best effort on a daily manner. Thus, Whites' intimacy-building behaviors may be more likely than ethnic minorities' to decline over time, resulting in ethnic minorities experiencing less positive affect and intimacy over time.

THE PRESENT RESEARCH

College roommate relationships offer a great opportunity to examine the dynamics of interactions with the same person over time. Researchers have capitalized on this situation to assess the development and processes of interpersonal relationships (e.g., Berg, 1984; Kurtz & Sherker, 2003). This research has revealed, for example, that as roommates have multiple interactions across time, their behavioral styles become increasingly complementary (Markey & Kurtz, 2006), which promotes relationship cohesion (Ansell, Kurtz, & Markey, 2008). In addition, roommates' emotional responses converge across time, and this convergence is associated with increases in closeness (C. Anderson, Keltner, & John, 2003). Moreover, randomly assigned college roommates experience a decline in satisfaction with their roommate relationships from the fall to the spring semester (Berg, 1984).

Researchers have also utilized the roommate situation to explore intergroup relationships (Shelton, Richeson, & Salvatore, 2005; Towles-Schwen & Fazio, 2006; Van Laar, Levin, Sinclair, & Sidanius, 2005). Interracial roommate dyads feel less compatible with their roommates (Phelps et al., 1998), feel less close to their roommates (Van Laar et al., 2005), and are more likely to dissolve their roommate relationships (Towles-Schwen & Fazio, 2006) compared to same-race dyads. Given these

outcomes, it is likely that the decline in satisfaction that many roommates experience is especially likely to occur for cross-race roommate pairs. Inspired by this previous research, we took advantage of this natural environment to assess the experiences of people (roommates) as they move from having initial interracial interactions to having multiple contact experiences with the same out-group members. We focused on freshmen roommates because these students are randomly assigned to their roommates, reducing concerns that selection biases may be driving certain effects. We predicted that people's interpersonal behaviors will mediate the association between the racial composition of the roommate dyad (i.e., interracial or intraracial) and people's experiences (i.e., emotion, intimacy level, and desire to engage in future interactions) during daily interactions. Furthermore, we predicted that the intimacy-building behaviors among Whites with ethnic minority roommates will decline across time. This decline will be coupled with their ethnic minority roommates experiencing a decline in positive emotions, intimacy, and a desire to engage in future contact with their roommates.

METHOD

Participants

Seventy-nine same-sex freshmen roommate pairs at a university on the East Coast of the United States participated in this study for \$50 and a chance to win several monetary prizes in a lottery drawing.¹ Of these roommate pairs, 28 were cross-race (White-ethnic minority) and 51 were same-race (40 White-White & 11 ethnic minority-ethnic minority) dyads. Moreover, 45 were female and 34 were male dyads. The roommates were randomly assigned by the university housing authorities.

Procedures

During the first week of the school year, we recruited students to participate in a study examining freshmen roommates and their college experiences. We informed students that it was important but not essential that their roommates participate in the study. Given the nature of the questions explored, the participants whose roommates did not participate in the study were excluded from data analyses for this article. Participants who agreed to participate in the study attended an orientation session where they completed a questionnaire and were told about a brief diary questionnaire that they would complete for the next 15 days. The pre-diary questionnaire included demographic questions and

additional measures that were not relevant to the research questions explored in this article.² After completing the pre-diary questionnaire, participants received instructions about daily diary measures. For the diary portion of the study, participants received an e-mail with a URL for the diary Web page at the end of the day for 15 days. An automatic e-mail was delivered to all participants who had not completed the diary questionnaire by 8 a.m. the following morning. Participants completed the diary questionnaire Sunday through Thursday for 3 weeks, for a total of 15 days. At the end of the 15 days, participants attended a post-diary session where they completed a final questionnaire, were informed of the purpose of the study, and received their payment. We did not inform participants until the end of the study that we were interested in comparing same-race and cross-race roommate dyads.

Background Measures

Respondent and roommate status. Participants indicated the race and sex of their roommates. Each participant had a roommate of the same sex. In our data, *minorities* refers to individuals who are either Black or Latino, and *majorities* refers to Whites. No differences were found between Blacks and Latinos. Thus, for ease of clarity, we refer to the effects of *minority status*, where Blacks and Latinos are considered minority group members and Whites are considered majority group members.

Daily Level Measures

Emotions. Participants rated the extent to which they experienced 10 positive emotions (i.e., accepted, cared for, supported, appreciated, happy, excited, content, alert, satisfied, enthusiastic) and 8 negative emotions (i.e., resentful, disappointed, tense, annoyed, angry, suspicious, irritated, defensive) during their interactions with their roommates. They indicated their responses on a scale from 1 (*none*) to 7 (*a great deal*). We combined these items to create the appropriate composite scores for positive ($\alpha = .95$) and negative ($\alpha = .88$) affect.³

Perceptions of the roommate relationship. Participants completed several questions to assess how they felt about their roommate relationship. First, they completed two items to assess the level of intimacy they felt with their roommates each day. Specifically, participants rated "I felt close to my roommate today" and "I liked my roommate today." They indicated their responses on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). We combined the two items to form an intimacy composite score ($\alpha = .87$). Second, they indicated how often they wished they had a different roommate today (1 = *not*

at all to 7 = a great deal) and the extent to which they agreed with the statement “If I had to decide today, I would live with my roommate again next year” using a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). We recoded the first item and combined the two items to form a composite of desire to live with roommate ($\alpha = .68$).

Behaviors. Participants indicated the extent to which they believed their roommates behaved in a positive intimacy-building way and a negative intimacy-distancing way toward them each day. Specifically, for the six intimacy-building behaviors participants indicated the extent to which they believed their roommates smiled a lot, talked a lot, appeared engaged and interested, were pleasant, were friendly, were warm, and had an easy time contributing to their conversations during interactions that day. For the five intimacy-distancing behaviors participants indicated the extent to which they believed their roommates fidgeted a lot, avoided eye contact, concealed their true opinions, were cruel, and were unlikable during interactions that day. Each of these sets of items was combined into composites representing positive ($\alpha = .92$) and negative ($\alpha = .83$) behaviors, respectively.

ANALYSIS STRATEGY

Given the complex nature of our data—dyadic data from indistinguishable dyad members measured over time with moderation and mediation—below we describe our analysis strategy in detail. Our description of the analyses is broken down by separate parts.

Effects of Minority Status

Our data contained three types of roommate dyads: Whites with White roommates, minorities with minority roommates, and Whites with minority roommates. To examine the effects of minority status on each outcome, we used a strategy illustrated by West, Popp, and Kenny (2008), where each roommate’s minority status is treated as a factor in a 2×2 full factorial design. Minority status is simultaneously examined at three levels: the level of the respondent (i.e., does the respondent’s own minority status influence his or her outcome); the level of the respondent’s roommate (i.e., does the respondent’s roommate’s minority status influence the respondent’s outcome); and the interaction between the respondent and roommate status, which compares same-status to mixed-status dyads. We refer to the interaction as the effect of *dyad status*. By simultaneously examining all three minority status variables, differences between the four different types of respondents in the study (i.e.,

White respondents with White roommates, minority respondents with minority roommates, White respondents with minority roommates, and minority respondents with White roommates) can be examined. Minority status was effects coded: Whites were coded as 1, and minorities were coded as -1 .

Distinguishability With Dyadic Data

In dyadic data, dyad members are either *distinguishable* from one another or *indistinguishable*. In our data, roommates in White–minority dyads are distinguishable from one another by minority status. However, roommates in White–White and minority–minority dyads are not distinguishable from one another by minority status, given that both members of the dyad have the same status. Given that our data contained both indistinguishable and distinguishable members, all dyads must be treated as indistinguishable (Kenny, Kashy, & Cook, 2006). As such, separate effects (including separate variances) cannot be estimated for each member of the dyad. Given that data were measured across time, constraints across dyad members must be imposed, presenting some statistical complexities for growth curve modeling.

Growth Curve Models With Indistinguishable Dyadic Data

Dyadic growth curve models examine coordination of change across two individuals in a dyad (Kenny et al., 2006). When growth curve models are estimated with individual-level data, the data conform to a multilevel data structure, where repeated observations are nested within persons. As described in Kashy, Donnellan, Burt, and McGue (2008), growth curve modeling for dyadic data is the same as it is for individuals. However, because dyad members are indistinguishable, estimates must be pooled across dyad members. Similarly, the individual slopes are set to the same value for the two people in a dyad, resulting in a single-slope estimate.

In our analyses, we used a multilevel modeling growth curve strategy to examine linear changes in dyad members’ outcomes across time. In addition to the main effects of the three status variables, all models also included the interaction of time with the three status variables (time was centered at the study midpoint). The interaction of time with the status variables allowed us to examine how growth trajectories for each outcome differed by minority status (at the three levels). For example, do respondents in same-status dyads increase in intimacy across time, whereas those in mixed-status dyads decrease in intimacy across time?

Six random effects were estimated in all growth curve models: variance in the intercepts (i.e., Is there variance

TABLE 1: Means of Measures Averaged Across Individuals and Time Points

	Mean	Standard Deviation
Positive emotions	3.80	1.68
Negative emotions	1.30	0.60
Intimacy	5.38	1.42
Desire to live with roommate again	5.77	1.28
Positive behaviors	5.42	1.21
Negative behaviors	1.93	1.04

NOTE: Higher numbers refer to more of that outcome.

in respondents' outcomes at the study midpoint?), variance in the slopes (i.e., Is there variance in respondents' growth trajectories?), covariance between a respondent's intercept and slope, covariance between dyad members' intercepts, covariance between dyad members' slopes, and covariance between one dyad member's intercept and the other dyad member's slope. Often it is the case that the random effects are of the most theoretical interest in dyadic growth curve analysis because they shed light on the nature of the interdependence between dyad members' change across time. However, given that our interest lies in how minority status influences perceptions, and how time further moderates the effects of minority status on each outcome, we only report the results of the fixed effects.

As noted above, growth curve modeling with indistinguishable dyads presents some statistical complexities. Because dyad members were indistinguishable, parameter constraints were set on the variance-covariance matrix to account for the arbitrary distinction between Person 1 and Person 2. All dyadic growth curve models were estimated using the mixed procedure in SAS (version 9.1), using a strategy outlined by Kenny et al. (2006) and described specifically for the analysis of indistinguishable dyads by Kashy et al. (2008). Note that the procedure can yield fractional degrees of freedom.

RESULTS

The first set of analyses reported reveals the effects of minority status (measured at the three levels) on the experience over time of positive and negative emotions, intimacy level, desire to engage in future interactions, and perceptions of one's roommate's behaviors. In the next set of analyses, we examine how perceptions of interpersonal behaviors mediate the relationship between dyad status (which compares same-status to mixed-status dyads) and emotions, intimacy level, and desire

for future interactions. Table 1 contains means and standard deviations for each outcome, averaged across dyad members and time points.

Effects of Minority Status and Time

The first set of analyses we report investigates the relationship between minority status and time on actor's daily experiences and perceptions of his or her roommate's behavior. Although all models were fully saturated at the level of the fixed effects (i.e., they contained the main effects of the three status variables, the main effect of time, and all interactions between the status variables and time), the main focus of these analyses is on the effect of dyad status on daily experiences/perceptions and whether these relationships change over time. As such, significant effects that do not involve dyad status will be reported but will not be interpreted.

Daily emotions. We begin with the results for daily positive emotions. An interaction between respondent and roommate status (i.e., dyad status) emerged, estimate = .48, $t(76.6) = 3.24$, $p < .001$, indicating that respondents in mixed-status dyads reported less positive emotions overall than did respondents in same-status dyads. Specifically, White actors with minority roommates reported having less positive emotions than did White actors with White roommates, $M_s = 3.17$ and 4.12 , respectively, $t(109) = 3.05$, $p = .003$. Similarly, minority actors with White roommates reported having less positive emotions than did minority actors with minority roommates, $M_s = 3.15$ and 4.20 , respectively, $t(93.6) = 2.17$, $p = .03$. Two interactions were found with time. The interaction of time and roommate status was significant, estimate = $-.02$, $t(140) = -2.45$, $p = .02$. Moreover, a significant interaction between dyad status and time emerged, estimate = $.02$, $t(73.5) = 2.55$, $p = .01$. To unpack this interaction, we examine separately for each of the four types of respondents whether the slope is significantly different from zero (i.e., whether there was a statistically significant linear increase or decrease over time). As shown in Figure 1, the positive emotions reported by White respondents with White roommates and White respondents with minority roommates did not change over time, main effects of time = $-.01$ and $-.02$, respectively, both $p_s > .27$. In contrast, the positive emotions reported by minority respondents with minority roommates increased over time, estimate = $.04$, $t(73.2) = 1.98$, $p = .05$, but the positive emotions reported by minority respondents with White roommates decreased over time, estimate = $-.03$, $t(133) = -2.50$, $p = .01$. No significant effects emerged for negative emotions.

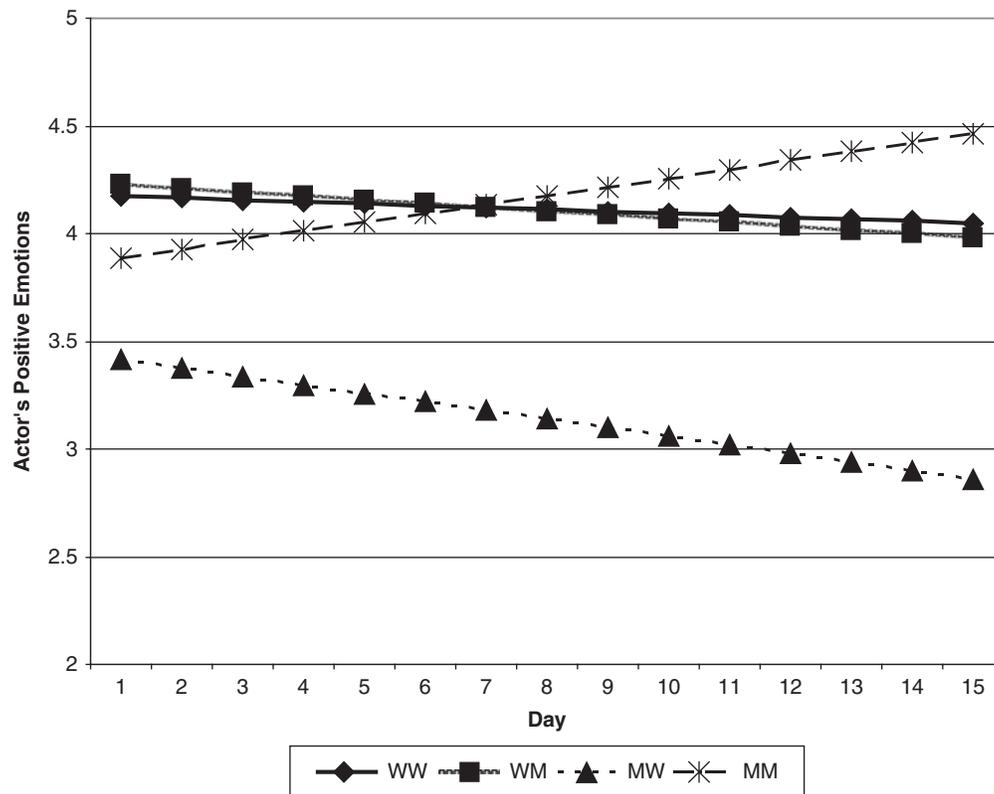


Figure 1 Daily positive emotions experienced by actors, by actor and roommate race.
NOTE: WW = White actors with White roommates; WM = White actors with minority roommates; MW = minority actors with White roommates; MM = minority actors with minority roommates.

Perception of roommate. Next, we analyzed actors' feelings of intimacy toward their roommates. A significant effect of dyad status effect emerged, estimate = .36, $t(76.6) = 3.14$, $p = .002$, indicating that respondents in same-status dyads felt more intimate than did respondents in mixed-status dyads. Specifically, White actors with minority roommates felt less intimate toward their roommates than did White actors with White roommates, $M_s = 4.93$ and 5.58 , respectively, $t(115) = 2.63$, $p = .01$. Likewise, minority actors with White roommates felt less intimate toward their roommates than did minority actors with minority roommates, $M_s = 4.92$ and 5.74 , respectively, $t(97) = 2.28$, $p = .02$. No other effects reached statistical significance. Thus, intimacy levels did not change across time for either Whites or minorities, and the growth trajectories of respondents in mixed-status compared to same-status dyads were not statistically different.

An analysis of respondents' desire to live with their roommates yielded a significant dyad status effect, estimate = .26, $t(76.4) = 2.46$, $p = .02$. White respondents with minority roommates wanted to live with their roommates less than did White respondents with White

roommates, $M_s = 5.42$ and 5.89 , respectively, $t(127) = 1.93$, $p = .06$. Minority respondents with White roommates wanted to live with their roommates less than did minority respondents with minority roommates, although this difference was only marginally significant, $M_s = 5.47$ and 6.08 , respectively, $t(104) = 1.78$, $p = .08$. No other effects reached significance. Thus, the desire to live with one's roommate again did not change across time for either Whites or ethnic minorities.

Roommate's behaviors. Next, we examine respondents' perceptions of their roommates' intimacy-building behaviors. A main effect of time emerged, estimate = $-.01$, $t(72.7) = -2.16$, $p = .03$, indicating that respondents perceived fewer intimacy-building behaviors across time. In addition, a statistically significant dyad status effect emerged, estimate = .36, $t(76.6) = 3.55$, $p < .001$, indicating that respondents in same-status dyads perceived more intimacy-building behaviors than did respondents in mixed-status dyads. Specifically, White respondents with minority roommates perceived fewer intimacy-building behaviors by their roommates than did White actors with White roommates, $M_s =$

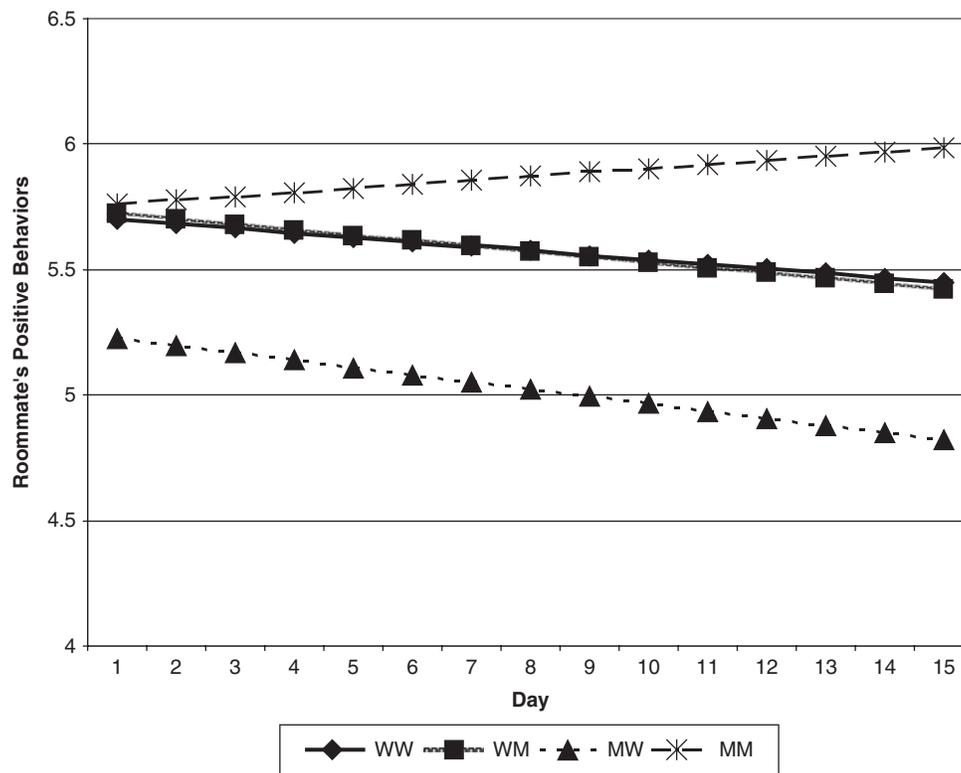


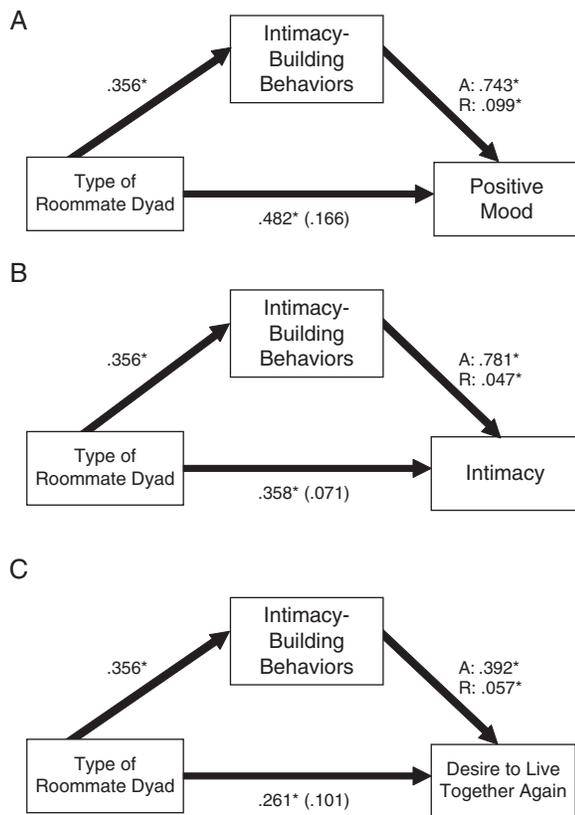
Figure 2 Actors' perceptions of their roommates' daily positive behaviors, by actor and roommate race.
NOTE: WW = White actors with White roommates; WM = White actors with minority roommates; MW = minority actors with White roommates; MM = minority actors with minority roommates.

4.97 and 5.59, respectively, $t(107) = 2.91, p = .004$. Similarly, minority actors with White roommates perceived fewer intimacy-building behaviors by their roommates than did minority actors with minority roommates, $M_s = 5.03$ and 5.86 , respectively, $t(92.5) = 2.73, p = .008$. A significant interaction between dyad status and time also emerged, estimate = .01, $t(72.7) = 2.00, p = .05$ (see Figure 2). We again examined separately for the four different types of respondents whether slopes significantly differed from zero. Simple slopes analyses revealed that White respondents with White roommates decreased in their perceptions of their roommates' intimacy-building behaviors over time, estimate = $-.02, t(69.6) = -2.41, p = .02$. Whites with minority roommates showed a similar trend, but the effect is marginally significant, estimate = $-.02, t(145) = -1.74, p = .08$. Minority respondents with White roommates perceived fewer intimacy-building behaviors by their roommates over time, estimate = $-.03, t(145) = -2.32, p = .02$. In contrast, minority respondents with minority roommates did not perceive a change over time in intimacy-building behaviors by their roommates, estimate = .02, $t(70.9) = 1.12, p = .27$.

An analysis of intimacy-distancing behaviors revealed a significant dyad status effect, estimate = $-.23, t(76.4) = -2.88, p = .005$. Respondents in mixed-status dyads perceived more intimacy-distancing behaviors than did respondents in same-status dyads. Specifically, White respondents with minority roommates perceived more intimacy-distancing behaviors by their roommates than did White respondents with White roommates, $M_s = 2.16$ and 1.85 , respectively, $t(121) = 1.84, p = .07$, although this result is marginally significant. Minority respondents with White roommates perceived more intimacy-distancing behaviors by their roommates than did minority respondents with minority roommates, $M_s = 1.60$ and 2.20 , respectively, $t(101) = 2.46, p = .02$. No other effects reached statistical significance. Therefore, intimacy distancing did not change across time for either Whites or minorities.

Interpersonal Behaviors as a Mediator

The preceding analyses revealed reliable differences in the experiences of White and minority students, depending on the minority status of their roommates.



Figures 3a, 3b, and 3c Mediation of race effects on positive emotions, intimacy, and desire to live with roommate again, by actors' perceptions of their roommates' positive behaviors.

NOTE: Following the methods specified by West, Popp, and Kenny (2008), both the actor's (A) and roommate's (R) perceptions of positive behaviors were analyzed as mediators. Values in parentheses represent the direct effect of dyad race on the dependent variables when the mediator is included in the model. Values with an asterisk are significant at $p < .05$ or better.

Next we examine whether respondents' perceptions of the intimacy-building and intimacy-distancing behaviors of their roommates mediated the effects of the three status variables on positive emotions, intimacy, and desire to live with roommate again. Of particular interest is the degree to which the effect of dyad status on each outcome is mediated by intimacy-building and intimacy-distancing behaviors.

We evaluated our mediation models using methods developed by West et al. (2008) for testing mediation effects in dyadic data. We elaborated on this method by examining mediation in the context of overtime models (i.e., mediation was examined overall and across time). These methods are very similar to the methods developed by Baron and Kenny (1986), except that there are three effects that could be mediated (respondent status, roommate status, and dyad status). In the mediation

model illustrated by West et al. (2008), mediation can occur at the level of the actor and at the level of the partner. A respondent's own reports of his or her roommate's intimacy behaviors may mediate the effects of the three status variables on the respondent's outcome (i.e., mediation at the level of the actor). In addition, a respondent's roommate's reports of the respondent's intimacy behaviors may mediate the effects of the three status variables on the respondent's outcome (i.e., mediation at the level of the partner). In our research, we are mainly interested in understanding the role that perceptions of behaviors (at the levels of the actor and partner) play in dyad status differences in outcomes, so the mediation models will concentrate on the mediation of intimacy-building and intimacy-distancing behaviors on that variable.

In addition, although mediation at the level of the actor is a more relevant test of our hypotheses, the impact of mediation at the level of the partner is also important: To the extent that a respondent's emotions, feelings of intimacy, and desires to continue the relationship are related to his or her minority status and the status of the roommate, these feelings should be reflected in the respondent's behaviors and subsequently reported by the roommate.

In the current analysis, Step 1 of the mediation analysis involves demonstrating the significant effect of dyad status on the dependent variable. As discussed earlier, this effect reliably predicted positive emotions, intimacy, and desire to live with the roommate again. In addition, the interaction between respondent status, roommate status, and time was significant for positive emotions, and the role of behaviors in this effect will also be investigated. Step 2 involves showing the effect of dyad status on the mediating variable. As noted earlier, dyad status reliably predicted actors' perceptions of their roommates' positive and negative behaviors. Thus, Steps 1 and 2 of the mediation analysis have been satisfied for each of the dependent variables, and the following discussion will concentrate on Steps 3 and 4 of the analysis.

Intimacy-Building Behavior as a Mediator

Daily positive emotions. We first analyzed whether perceptions of roommates' intimacy-building behaviors mediated the dyad status effect on daily positive emotions. Steps 1 and 2 of the analysis were detailed in the previous section. Step 3 of this process involves testing whether the mediating variables (respondent's perceptions of his or her roommate's intimacy-building behaviors and roommate's perceptions of respondent's intimacy-building behaviors) predict positive mood, controlling for the race and day variables and their interactions. As shown in Figure 3, both effects were statistically significant. Step 4 involves testing the effects

of dyad status and Dyad Status \times Time interactions, controlling for intimacy-building behaviors on each outcome. Steps 3 and 4 are conducted in the same analysis. As shown in Figure 3a, after controlling for intimacy-building behaviors, the effect of dyad status effect was no longer statistically significant. Sobel's tests revealed that this effect was significantly mediated by both the respondent's perceptions of his or her roommate's intimacy-building behaviors (i.e., mediation at the level of the actor, Sobel's test = 3.23, $p = .001$) and the roommate's perceptions of the respondent's intimacy-building behaviors (i.e., mediation at the level of the partner, Sobel's test = 2.73, $p = .006$). In addition, the Dyad Status \times Time interaction was no longer significant after controlling for respondent's and roommate's perceptions of intimacy-building behaviors (estimate = .006). Sobel's tests revealed that this effect was significantly mediated by respondent's perceptions of his or her roommate's intimacy-building behaviors (i.e., mediation at the level of the actor, Sobel's test = 1.96, $p = .049$). Roommate's perceptions of respondent's intimacy-building behaviors showed only a marginal effect (Sobel's test = 1.83, $p = .067$). Thus, respondents' perceptions of their roommates' intimacy-building behaviors mediated the dyad status differences in positive mood, both overall and across time.

Perception of roommate relationship. Next, we analyzed whether respondents' perceptions of their roommates' intimacy-building behaviors mediated the dyad status effect on feelings of intimacy. We begin with results from Steps 3 and 4. As shown in Figure 3b, after controlling for the three minority status variables on intimacy, both respondents' perceptions of their roommates' intimacy-building behaviors and roommates' perceptions of respondents' intimacy-building behaviors were reliable predictors of actors' feelings of intimacy. When the two mediating variables were entered into the model, the dyad status effect was no longer significant. Sobel's tests showed that both respondent and roommate intimacy-building behaviors were significant mediators of dyad status differences in feelings of intimacy (actor effect: Sobel's test = 3.54, $p = .0004$; partner effect: Sobel's test = 1.99, $p = .046$).

Dyad status differences in desire to live with one's roommate again were subjected to the same mediation analysis. As shown in Figure 3c, Step 3 of the analysis demonstrated that, controlling for the three status variables, both respondents' perceptions of their roommates' intimacy-building behaviors and roommates' perceptions of respondents' intimacy-building behaviors reliably predicted respondents' desire to live with their roommates again. When these variables were entered into the model, the dyad status effect no longer reached

significance. Again, Sobel's tests revealed that both respondent and roommate perceptions of behaviors were significant mediators of the effect of dyad status on the desire to live with one's roommate again (actor effect: Sobel's test = 3.50, $p = .0005$; partner effect: Sobel's test = 2.34, $p = .019$). Thus, respondents' perceptions of their roommates' intimacy-building behaviors mediated the dyad status differences in feelings of intimacy toward one's roommate and the desire to live with one's roommate again. The overall pattern of results from these mediation models suggests that much of the dyad status differences in mood and roommate perceptions result from a lack of perceptions of intimacy-building behaviors on the part of White actors with minority roommates.

Intimacy-Distancing Behavior as a Mediator

We ran a similar set of analyses exploring the role of intimacy-distancing behaviors as a mediator of dyad status differences in positive emotions and perceptions. However, because intimacy-distancing behaviors did not interact with time to predict emotions or perceptions, the effect of time is not considered in these models.

Daily positive emotions. Following the steps for mediation analysis outlined by West et al. (2008), after controlling for the three status variables, respondents' own perceptions of their roommates' intimacy-distancing behaviors and roommates' perceptions of respondents' intimacy-distancing behaviors reliably predicted daily positive emotions, actor effect = $-.602$, $t(2,011) = -23.52$, $p < .0001$; partner effect = $-.109$, $t(2,006) = -4.31$, $p < .0001$. When the two mediators were entered into the model, the effect of dyad status on daily positive emotions dropped from .482 to .299, but it remained significant, $t(75.2) = 2.40$, $p = .019$. Sobel's tests confirmed that both actor and roommate perceptions of behaviors significantly mediated the dyad status effect on positive emotions (actor effect: Sobel's test = 2.86, $p = .004$; roommate effect: Sobel's test = 2.39, $p = .017$).

Perception of roommate. We next examined the mediating role of intimacy-distancing behaviors on the relationship between dyad status and respondents' feelings of intimacy toward their roommates. Controlling for the three status variables, intimacy-distancing behaviors at the levels of the actor and partner reliably predicted feelings of intimacy, actor effect = $-.552$, $t(2,050) = -21.03$, $p < .0001$; partner effect = $-.076$, $t(2,050) = -2.91$, $p = .004$. When these variables were entered into the mediation model in Step 4, the dyad status effect dropped from .358 to .218 but remained significant, $t(73.9) = 2.59$, $p = .012$. Again, Sobel's tests revealed

that both respondents' perceptions of their roommates and roommates' perceptions of respondents mediated the dyad status effect, thus reflecting a partial mediation of dyad status differences in feelings of intimacy (actor effect: Sobel's test = 2.85, $p = .0004$; partner effect: Sobel's test = 2.05, $p = .041$).

Finally, we examined the mediating role of intimacy-distancing behaviors on the relationship between dyad status and the desire to live with one's roommate again. Controlling for the three status variables, intimacy-distancing behaviors at the levels of the actor and partner reliably predicted actors' desire to live with their roommates again, actor effect = $-.373$, $t(2,006) = -17.80$, $p < .0001$; partner effect = $-.063$, $t(2,006) = -3.02$, $p = .003$. Entering these effects into the model reduced the dyad status effect from .261 to .156, but it remained marginally significant, $t(74.1) = 1.75$, $p = .085$. Again, Sobel's tests confirmed that intimacy-distancing behaviors partially mediated the dyad status effect on the desire to live with one's roommate again (actor effect: Sobel's test = 2.84, $p = .004$; partner effect: Sobel's test = 2.08, $p = .037$).

DISCUSSION

Consistent with previous research involving one-time-only interactions in the laboratory, our results reveal that Whites and ethnic minorities randomly assigned to live in mixed-race arrangements experience less positive emotions and intimacy toward their roommates than do Whites and ethnic minorities assigned to live in same-race arrangements. In addition, Whites and ethnic minorities in mixed-race living arrangements show less intimacy-building but more intimacy-distancing behaviors toward their roommates compared to those in same-race arrangements. More important, however, our findings show that Whites' and ethnic minorities' positive emotions and intimacy-building behaviors change across time, but this varies by their race or minority status. Specifically, Whites with ethnic minority roommates show a decline in their intimacy-building behaviors across time, and this is coupled with their ethnic minority roommates' experiencing a decline in their positive emotions across time.

Interpersonal behaviors have important and enduring implications on the dynamics of interracial interactions. Our research expanded on previous work to show that the valence of interpersonal behaviors is crucial for understanding these dynamics. We found that positive interpersonal behaviors play a greater role than negative interpersonal behaviors for Whites' and minorities' affect, intimacy, and desire to interact in the future. One fascinating finding about the valence of interpersonal behaviors is that the intimacy-building behaviors

changed (declined) over time but intimacy-distancing behaviors did not. That is, although people behaved less and less in a pleasant manner during interracial interactions, they did not start behaving in an unpleasant, hostile manner. It is important to note that we studied people who were at the beginning stage of their relationship—their first 3 weeks as roommates. People may not feel comfortable expressing outright hostility at this point in the relationship. Indeed, the mean ratings of negative emotions and roommate's intimacy-distancing behaviors were rather low, and this may have affected our results, especially for the mediating role of intimacy-distancing behaviors. In later stages of the relationship, roommates may be more likely to behave openly hostile to each other. Of course, such open hostility will affect each person's emotions, behaviors, and desire to live with one another again. Still, it is unclear whether the level of hostile behavior later in the relationship would differ between interracial and intraracial relationships. It could be that bad interracial relationships continue to burn with just-under-the-surface hostility—hostility that is expressed in small slights and lack of intimacy—whereas bad intraracial relationships explode into all-out war. Research that tracks relationships over a longer period of time is needed to explore this intriguing possibility.

Our results fit in with Reis and Shaver's (1988) interpersonal process model of intimacy and suggest that interracial relationships face particular challenges in developing into intimate, close friendships. Decreased intimacy-building behaviors may signal a lack of responsiveness on the part of one's partner, and perceived partner responsiveness is important for building intimate relationships (Laurenceau, Feldman Barrett, & Pietromonaco, 1998). It is possible that perceived partner responsiveness is especially relevant for interracial relationships, which are often characterized by distrust, miscommunication, and misunderstanding (Dovidio et al., 2002). Further research is needed to explore the role of perceived responsiveness on intimacy in interracial relationships.

An intriguing question raised by our research is to what extent do Whites' intimacy-building behaviors continue to dissipate across time? Given that Towles-Schwen and Fazio (2006) found that a large percentage of interracial roommate pairs dissolved their living arrangement before the end of the academic year, it is possible that Whites stop showing any positive behaviors, contributing to the reasons the relationships eventually terminate. In other words, it is possible that the decline in intimacy-building behaviors continues to occur and makes the interactions uncomfortable to the point that people have the need to walk away from the relationship.

Another question concerns the attributions that people make about their roommates' lack of intimacy-building behaviors. Previous research has demonstrated that Whites and ethnic minorities make different attributions about out-group, compared to in-group, members' behaviors. For example, they attribute out-group members' anxious behaviors as unfriendly but attribute in-group members' anxious behavior as simply anxiety (Dovidio et al., 2005). We found that as Whites' intimacy-building behaviors declined over time, their ethnic minority roommates' positive emotions also declined. Ethnic minorities were probably uncertain why their roommates' behaviors became less positive. It is likely that they made attributions to reduce their uncertainty. Previous research suggests that they might attribute the decline in positive interpersonal behaviors to racial prejudice, thereby feeding into their own decline in positive emotions. Future research should explore the exact attributions that ethnic minorities (and Whites) make about their roommates' behaviors.

Although our results show that interracial contact with the same person over time has deleterious consequences for ethnic minorities' daily positive emotions, it is important to keep in mind that additional research suggests that repeated interracial contact is advantageous for different outcomes. Specifically, Van Laar et al. (2005) demonstrated that both ethnic minorities and Whites who were randomly assigned to have out-group roommates during their freshman year in college, and presumably interacted with these out-group members on a frequent basis over time, had more positive racial attitudes at the end of their college years. Thus, despite the unpleasant nature of the roommate interactions, if roommates manage to stay together for the year, they may become more open-minded and tolerant about racial issues.

Our results complement the growing body of research showing divergent experiences among Whites and ethnic minorities in interactions. It is not uncommon for one person to have a more pleasant experience during an interracial interaction than the other person (Shelton & Richeson, 2006). Our findings show that this divergent experience grows worse over time. Whites may stop trying to put their best foot forward, so the interpersonal behaviors become less positive. This only makes things worse for their ethnic minority partners, creating an even larger gap in experiences than may have existed from when they first started interacting. Future research should examine how to reduce this gap, creating a positive interaction for both Whites and ethnic minorities over time.

Examining people's interpersonal behaviors in daily interactions across time is challenging because researchers are unable to follow people around with a camera on a daily basis to make the appropriate

observations. We opted to capture interpersonal behaviors by having people report on their partners' behaviors during the interaction. If people have positive affective experiences in interactions because their partners are displaying certain behaviors, then people should indeed notice the behaviors. In some ways this is a stronger test of the role of interpersonal behaviors in interactions than those studied in the laboratory, where trained judges code participants' behaviors. What is most important is that people are aware of their partners' behaviors, and this awareness has consequences for people's experiences. Consistent with this argument, Dovidio et al. (2002) noted that one reason nonverbal and verbal behaviors did not fully mediate the relationships between Whites' racial attitudes and their impressions of their partners as well as their ethnic minority partners' impressions of them is because the behaviors were coded by trained, independent coders. Dovidio and colleagues suggest that using mediating variables from one source but impressions from another source, as well as having people who are not directly involved in the interaction assess the behaviors (these people are more likely to take a gestalt approach when deciphering behaviors), may not be ideal. Given our significant effects, our approach—participants were in the interaction and made the judgments about the behaviors—suggests that, indeed, this may be the case.

Limitations

There are several limitations that should be considered in interpreting our findings and that should guide future research. First, one may argue that the diary method altered the normal processes that occur during daily interracial interactions. Although it is possible that participants altered their behaviors because they knew their roommates would evaluate them, it seems unlikely that they would do so in a negative manner. We would expect that people would have engaged in more intimacy-building behaviors across time so that their roommates' ratings would be more positive. That did not occur, however, especially in the interracial roommate dyads. Thus, we feel confident that our pattern of results reflects as closely as possible what occurs in reality.

A second limitation one may argue is that because participants, as opposed to trained judges, rated their partners' behaviors, the ethnic minorities were biased in their ratings. That is, they purposely rated their White partners as declining in intimacy-building behaviors across time. We doubt this alternative explanation is valid because laboratory studies with independent coders have also shown that Whites display fewer positive behaviors during interracial compared to intraracial interactions (Dovidio et al., 2006). Furthermore, it is unlikely that ethnic minorities remembered how they

rated their White roommates' behaviors the previous day and thus indicated that the behaviors were less positive on a particular day. In fact, ethnic minorities may be more accurate about their White roommates' behaviors because low-status people are interpersonally more sensitive and attentive to high-status people during interactions (Frable, Blackstone, & Scherbaum, 1990). Finally, if ethnic minorities had been biased in their perceptions, it is likely that they would have perceived an increase in their White roommates' intimacy-distancing behaviors. Research on romantic close relationships has revealed that people are more likely to notice negative (nonverbal) behaviors than positive ones in relationships (Manusov, Floyd, & Kerssen-Griep, 1997). Although the roommate relationships were not romantic in nature, if this is a basic process in relationships then one would expect for roommates to notice the negative behaviors. Taken together, these explanations leave us relatively certain that the findings regarding a decline in intimacy-building behaviors is a not a result of biased participants.

Finally, because we opted to study interracial interactions among students, it is possible that our findings do not generalize beyond the college environment. Although unique in some ways (e.g., roommates are potentially affected by each other's sleep habits, relationship status, etc.), the roommate situation is similar to other situations, such as work teams, in which people are invested in making the relationship work and are dependent on the other person for a significant period of time. Moreover, as others have noted (Van Laar et al., 2005), the college roommate situation is a great opportunity to explore issues related to contact theory because it satisfies the conditions considered to improve intergroup relations. Specifically, students are of equal status—they are peers in their environment. They generally have the common goal of making their living arrangement pleasant and comfortable, which means they are likely to be willing to work together for the greater good of the dyad. Moreover, they are interdependent, meaning their behaviors have repercussions for one another. Finally, administrators and decision makers at universities tend to encourage interactions across racial and ethnic lines. Thus, although roommates are unique, these dyads are ideal for studying interracial interactions across time.

FINAL THOUGHTS

In some ways, our findings paint a bleak picture of the daily experiences of people, college roommates in particular, who have to interact with someone outside of their racial group on a daily basis. Although research suggests that intergroup attitudes may improve as a

result of interacting with the same out-group person on multiple occasions (Shook & Fazio, 2007; Van Laar et al., 2005), our results show that the daily road to these positive attitudes may be a rocky one. This is quite problematic in the context of college roommate relationships because of the impact roommate dynamics have on college adjustment. For example, research has shown that students who are satisfied with their college roommate relationships have higher GPAs and are more satisfied with the college experience overall (Pace, 1970). Given the challenges ethnic minority students face related to prejudice and discrimination on predominately White campuses, unsettling roommate relationships can be an added burden to their experience. The decline in positive emotions our results revealed for ethnic minorities with White roommates may, unfortunately, be coupled with a decline in grades and overall commitment to the university. Thus, it is important that we begin to think more deeply about policy decisions regarding residential assignments on college campuses. University policy makers need to be advised that policies need to be implemented that address both the levels of comfort students need to feel on a daily basis in their dorms for the educational and democratic benefits of diversified living arrangements.

NOTES

1. The data presented in this article are from a large study on freshmen roommate experiences. The data set has been used to address different research questions for another article (West, Shelton, & Trail, in press). However, that manuscript does not share any of the same statistical results (aside from descriptive and reliability statistics).

2. The pre-diary questionnaire included a measure of racial attitudes and a measure of interracial anxiety. Similar to Levin, Van Laar, and Sidanius (2003), we asked participants to indicate how positively and negatively they felt toward each of the following four groups: Whites, Blacks, Asians, and Latinos. The composite score of in-group bias did not moderate or mediate any of the results reported in this article. Also, similar to Levin et al., we asked participants to answer four questions that tap into how much anxiety they experience interacting with people of various racial backgrounds (e.g., "I feel uneasy being around people of different ethnicities"). Although this measure of intergroup anxiety interacted with actor race and partner race for several of our dependent variables, these interactions were only marginally significant and demonstrated that the actor and partner race effects reported in this article were significant for people who were both high and low on intergroup anxiety but that the effects were amplified for people with high intergroup anxiety. Including intergroup anxiety in the analysis did not alter the mediation effects reported in this article.

3. All alphas were calculated across participants and time points.

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