



## Report

## Living with an other-race roommate shapes Whites' behavior in subsequent diverse settings

Sarah E. Gaither\*, Samuel R. Sommers

Department of Psychology, Tufts University, USA

### HIGHLIGHTS

- ▶ We examine White college students assigned to a same-race or other-race roommate.
- ▶ Across three phases in one year we track changes in racial attitudes and behavior.
- ▶ We explore whether roommate exposure transfers to future interracial interactions.
- ▶ Results show that living with an other-race roommate affects racial attitudes.
- ▶ Findings also show it positively influences behavior in future diverse settings.

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### ABSTRACT

In a multi-phase research design over two academic semesters, White college students assigned to either a same-race or other-race roommate were tracked across two survey phases and a third phase involving an interracial interaction with a Black stranger. After four months, Whites who lived with an other-race roommate came to have more diverse friends and believe that diversity was more important than did Whites with a White roommate. After six months, self-reports, partner ratings, and nonverbal behavior indicated that Whites with an other-race roommate were less anxious, more pleasant, and more physically engaged during a novel interracial interaction. These results demonstrate that residential contact with other-race individuals not only affects race-related attitudes, but can also reduce interracial anxiety and positively influence behavior in subsequent diverse settings.

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### Introduction

Intergroup contact has long been theorized to have the potential to reduce prejudice toward outgroup members, thereby improving interracial relations (Allport, 1954; Pettigrew & Tropp, 2006, 2011). Indeed, institutions such as residential colleges emphasize diversity initiatives based, in part, on assumptions regarding these long-term benefits for students' later ability to function effectively within a diverse society (Hurtado, 2005; Hurtado, Dey, Gurin, & Gurin, 2003; Pike & Kuh, 2006). Despite these expectations, however, little research has actually tested such predictions, particularly the question of whether living with an other-race roommate affects subsequent social behavior in novel interracial interactions. This is an issue of practical as well as theoretical importance, given that even as our society becomes increasingly more diverse, many individuals still have very few interactions with diverse populations before entering college (Frankenberg & Lee, 2002; Mouw & Entwisle, 2006; Stearns, Buchmann, & Bonneau, 2009).

Previous studies have examined the effects of intergroup contact on race-related ideologies and other self-report measures (Boisjoly, Duncan, Kremer, Levy, & Eccles, 2006; Phelps et al., 1998; Shelton & Richeson, 2005; Shelton, Richeson, & Salvatore, 2005). In particular, studies have found that college students with more racial outgroup interactions exhibit increased cultural knowledge, less ingroup bias, and reduced intergroup anxiety (e.g., Antonio, 2001; Chang, 1996; Levin, van Laar, & Sidanius, 2003; Page-Gould, Mendoza-Denton, Alegre, & Siy, 2010). Other work has included cognitive and physiological measures; for example, previous intergroup contact has been found to predict less threat experienced in future intergroup evaluative contexts (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001; Page-Gould, Mendes, & Major, 2010).

But what of the effects of regular, residential contact with an other-race roommate? Studies of interracial roommate experiences have produced mixed results. For example, interracial roommates have been shown to experience less positive emotion, have fewer feelings of closeness, and have less overall satisfaction with each other compared to same-race roommates (Phelps et al., 1998; Shook & Fazio, 2008a; Towles-Schwen & Fazio, 2006; Trail, Shelton, & West, 2009). Conversely, past research also indicates some positive outcomes for interracial roommates: minorities paired with White roommates

\* Corresponding author at: Department of Psychology, Tufts University, 490 Boston Avenue, Medford, MA 02155, USA. Fax: +1 617 627 3181.

E-mail address: [sarah.gaither@tufts.edu](mailto:sarah.gaither@tufts.edu) (S.E. Gaither).

demonstrate an increase in grade-point average, and students paired with an interracial roommate exhibit more positive affect toward outgroups and less automatic activation of racial stereotypes (Shook & Clay, 2012; Shook & Fazio, 2008a, 2011; van Laar, Levin, Sincalir, & Sidanius, 2005; West, Pearson, Dovidio, Shelton, & Trail, 2009). Most of these previous roommate studies have relied on attitudinal and academic outcomes, however, leaving unanswered the question of how residential interracial experiences may carry over into behaviors in future diverse interactions.

We investigated this question via a multi-phase study of the effects on White college students of being assigned an other-race roommate (the implications of this focus on White participants is considered below). Our goal was to empirically assess institutional assumptions regarding the positive effects stemming from intergroup contact by directly measuring how living with a roommate from another racial background shapes behavioral tendencies in future, unfamiliar diverse contexts.

## Method

Of the 140 White first-year students recruited from a private New England university, 95 (49 females) were assigned a same-race (White) roommate and 45 (27 females) an other-race ( $n = 14$  Black,  $n = 11$  Hispanic,  $n = 20$  Asian) roommate. A pre-assignment questionnaire administered by the housing office did not ask about race-related preferences; roommates were therefore randomly assigned with regard to racial attitudes/experiences. Participants completed three research phases across two semesters: two online surveys assessing attitudes and experiences and one ostensibly unrelated in-lab social interaction with a Black stranger.

### Phases I and II

Participants were asked to complete two online surveys (no significant differences emerged for *Phase I* or *II* outcomes by gender or between the 113 Whites who continued to *Phase II* and the 27 who did not). For *Phase I*, an email directed respondents to an online questionnaire that included questions about previous intergroup contact, percentage of friends from diverse backgrounds, various racial ideologies (e.g., IMS/EMS, Plant & Devine, 1998; Attitudes Toward Blacks, Brigham, 1993), and perceptions of their own ethnic identity. Participants completed the questionnaire before arriving on campus and after learning their roommate assignment, but before meeting their roommate. Four months later, *Phase II* consisted of a comparable online survey with additional questions regarding time spent with their roommate. Compensation for both phases was \$10.

### Phase III

In their second college semester, 81 of these participants (42 females and 58 with same-race roommates; no significant differences emerged for *Phase I* or *II* outcomes between Whites who continued on to *Phase III* and those who did not) were successfully recruited using a different email account to participate in an ostensibly unrelated social interaction study for \$20. A suspicion check uncovered no evidence that participants associated *Phases I* and *II* with *Phase III*.

After participants were greeted by an experimenter, a Black confederate posing as the second participant entered. Confederates were gender-matched to the participant, blind to participant roommate race, and trained to respond comparably across sessions. We used a Black confederate because past research has shown that Whites' interracial anxiety is the highest with a Black partner (e.g., Littleford, Wright, & Sayoc-Parial, 2005). The experimenter then announced that there would be two roles for the interaction – interviewer and interviewee – and that they would select an interview topic via random draw. The drawings were rigged so that the participant was always

the interviewee, the confederate was the interviewer, and the topic was “Affirmative Action,” which has been used in past studies to heighten the salience of the interracial nature of an interaction (Shelton et al., 2005; Sommers, Warp, & Mahoney, 2008).

The confederate then read from a scripted set of questions (e.g., *Do you think affirmative action is needed today? Do you think affirmative action effectively helps overcome past discrimination?*). Interviews lasted 5 min and were videotaped for later coding. Afterward, the participant and confederate answered written questions about the interaction, using a 7-point scale ranging from 1 (*not at all*) to 7 (*very much*) to rate: how anxious the participant was, the extent to which the participant made controversial statements, and how obligated the participant felt to explain his/her responses during the interaction (see Shelton et al., 2005). For the participant these questions required self-ratings; for the confederate they measured perceptions of the participant.

### Nonverbal coding

Two coders blind to condition and hypothesis rated participants' nonverbal behaviors by watching silent videos of the interactions in which only the participant was visible. Coders used a scale ranging from 1 (*not at all*) to 7 (*very much*) to rate how anxious and pleasant the participant appeared, how much the participant smiled, and how naturally the participant moved his/her body during the interaction (Dovidio, Kawakami, & Gaertner, 2002; Shelton et al., 2005). The two coders were high in reliability across traits (intraclass  $r = .72$ ) and responses were averaged to create one overall rating for each assessment.

### Audio coding

In order to assess the possibility that living with an other-race roommate causes White individuals to hold more favorable attitudes concerning affirmative action (hence contributing to any potential positive interaction outcomes) the audio from each of the interaction videos was extracted. Two additional coders (intraclass  $r = .68$ ) listened to these clips and used a scale of 1 (*not at all*) to 7 (*very much*) to rate how in favor of affirmative action the participant sounded.

## Results

Analyses focused on potential differences between those who lived with a same-race versus an other-race roommate (for a similar analytical strategy of interracial roommates, see Shook & Clay, 2012).

### Phases I and II

As expected, prior to arrival on campus at *Phase I*, no significant differences emerged by roommate race regarding: diversity of friends, positivity toward other racial groups, or previous intergroup contact ( $ts < 1.0$ ,  $ps > .32$ ). In other words, we found no evidence of pre-existing differences between participant groups at the time of roommate assignments. At *Phase II*, no significant differences appeared by roommate race concerning time spent or happiness with their roommate ( $ts < .50$ ,  $ps > .62$ ) or on the racial attitudes scales measured in *Phases I* and *II* ( $ts < .63$ ,  $ps > .53$ ). Some differences by roommate race did emerge at *Phase II*, however. Compared to Whites with a same-race roommate, Whites with an other-race roommate reported a significantly higher percentage of non-White friends and believed that they had learned more about their roommate's and their own ethnic identities ( $ts > 2.65$ ,  $ps < .01$ ; see Table 1 for summary and means).

**Table 1**  
Outcomes for Whites with a same-race versus other-race roommate: Phases I and II.

Self-report	Same-race roommate	Other-race roommate
<b>Phase I</b>		
Percent non-White friends	30.27% (23.44)	27.81% (23.39)
Positivity toward minorities	6.29 (1.03)	6.04 (1.21)
Exposure to other races	2.14 (1.54)	2.20 (1.44)
<b>Phase II</b>		
Percent time spent with roommate	32.15% (27.08)	29.57% (24.03)
Happiness with roommate	5.29 (1.80)	5.11 (1.95)
Percent non-White friends	42.71% (19.40)	51.88% (16.01)**
Roommate has a strong ethnic identity	3.76 (1.94)	5.31 (1.53)**
I have learned about other ethnic groups	2.47 (1.89)	4.72 (2.12)**
I have a strong ethnic identity	4.00 (1.86)	5.08 (1.50)**

Note. Standard deviations are in parentheses; for non-percentage data, higher numbers reflect greater endorsement on a scale of 1–7; \* $p < .05$ , \*\* $p < .01$ , comparing to same-race roommate pairings.

### Phase III

After the Phase III discussion with a Black confederate, Whites with an other-race roommate rated themselves as having been significantly less anxious, less verbally controversial, and having felt less of an obligation to explain themselves during this conversation compared to Whites with a same-race roommate ( $t_s > 2.10$ ,  $p_s < .04$ ). Confederate ratings converged with self-assessments: they rated Whites with an other-race roommate as having been significantly less controversial and seeming to feel less obligated to explain themselves during the discussion ( $t_s > 2.95$ ,  $p_s < .01$ ).

Nonverbal coding results supported these findings as well: Whites with an other-race roommate were viewed as significantly less anxious, more pleasant, and were judged to have smiled more and to have moved their body more naturally during the interaction ( $t_s > 2.31$ ,  $p_s < .03$ )—behaviors that previous studies have linked to positive social outcomes (Dovidio, Gaertner, Kawakami, & Hodson, 2002; Dovidio, Kawakami & Gaertner, 2002; Norton, Sommers, Apfelbaum, Pura, & Ariely, 2006; Richeson & Shelton, 2003; Shelton et al., 2005; see Table 2 for summary and means).<sup>1</sup> Audio coding revealed no significant differences by roommate assignment in terms of sounding in favor of affirmative action ( $p = .80$ ), ruling out the possibility that living with an other-race roommate affected subsequent interactions by making participants sound more supportive of particular policies.

The longitudinal nature of this study allowed us to look for potential covariates and mediators for Phase III outcomes. Analyses of covariance were conducted with responses from Phase I on results from Phase II, with no noteworthy changes to the reported pattern of results. No Phase II responses mediated effects on Phase III outcomes.<sup>2</sup> Additionally, the quality of roommate relationships (i.e., happiness or time spent

<sup>1</sup> We also examined possible relationships between participant, confederate, and nonverbal ratings. These analyses revealed significant correlations between participant ratings of being verbally controversial and coders' nonverbal ratings of participant anxiety ( $r = .40$ ,  $p < .01$ ) and between participant ratings of feeling obligated to explain oneself with nonverbal ratings of pleasantness ( $r = -.25$ ,  $p < .04$ ). Participant ratings of feeling obligated to explain oneself were marginally associated with nonverbal ratings of anxiety ( $r = .213$ ,  $p = .075$ ). Self-ratings of anxiety were not correlated with coders' nonverbal ratings, mirroring previous research that has shown self-report ratings of outcomes such as prejudice and anxiety sometimes do not converge with others' nonverbal perceptions (e.g., Ajzen & Fishbein, 1977; Dovidio, Gaertner, et al., 2002). Positive correlations between participant and confederate ratings were marginally significant for assessments of being verbally controversial ( $r = .25$ ,  $p = .064$ ) and significant for ratings about feeling obligated to explain one's self ( $r = .32$ ,  $p < .01$ ).

<sup>2</sup> The percent of non-White friends and participants' self-reports regarding their own ethnic identity reported at Phase II both operated more like suppressor variables when entered into mediational models involving participant self-reports of anxiety at Phase III, resulting in slightly higher significance levels and suggesting that these variables did not account for the effects found at Phase III.

**Table 2**  
Outcomes for Whites with a same-race versus other-race roommate: Phase III.

Phase III				
Self-report	Same-race roommate	Other-race roommate	Black roommate	Hispanic/Asian roommate
Anxious	3.88 (1.13)	3.26 (.69)*	3.25 (.71)	3.31 (.70)*
Verbally controversial	4.05 (1.60)	3.22 (1.65)*	2.88 (1.13)*	3.31 (1.85)
Obligated to explain self	5.76 (1.11)	4.78 (1.57)**	5.50 (1.07)	4.44 (1.63)**
Confederate rating	Same-Race Roommate	Other-Race Roommate	Black roommate	Hispanic/Asian roommate
Anxious	2.53 (1.33)	2.22 (1.24)	1.50 (.54)*	2.50 (1.37)
Verbally controversial	4.90 (1.00)	3.94 (1.39)*	4.14 (1.57)	3.82 (1.33)**
Obligated to explain self	5.69 (1.14)	4.30 (1.87)**	3.38 (2.33)**	4.56 (1.67)*
Nonverbal behavior	Same-race roommate	Other-race roommate	Black roommate	Hispanic/Asian roommate
Anxious	2.59 (.65)	2.18 (.66)*	2.50 (.71)	2.04 (.62)**
Pleasant	3.07 (.95)	4.11 (.90)**	4.42 (.80)**	3.96 (.94)**
Smiles	2.34 (.64)	3.17 (1.01)**	3.17 (1.03)**	3.17 (1.05)**
Moved naturally	1.98 (.36)	2.67 (.77)**	3.08 (.67)**	2.46 (.75)**

Note. Standard deviations are in parentheses; higher numbers reflect greater endorsement on a scale of 1–7; \* $p < .05$ , \*\* $p < .01$ , all comparing to same-race roommate pairings. There are no significant differences when comparing those with a Black roommate to those with a Hispanic/Asian roommate.

with their roommate) did not predict Phase III outcomes differentially based on roommate race (all  $p_s > .13$ ).

Although our sample size was underpowered for statistical comparisons across particular outgroup roommate race, separate analyses compared Phase III participant self-report, confederate report, and nonverbal ratings between participants with a White roommate, participants with a Black roommate, and participants with either a Hispanic or Asian roommate. Comparing Whites with a White roommate to either Whites with a Black roommate ( $t_s > 2.04$ ,  $p_s < .05$ ) or Whites with a Hispanic/Asian roommate ( $t_s > 2.00$ ,  $p_s < .05$ ) resulted in comparable patterns for the majority of traits assessed at Phase III. With one marginally significant exception, there were no differences when comparing Whites with a Black roommate to Whites with either a Hispanic or Asian roommate ( $t_s < 1.72$ ,  $p_s > .11$ , see Table 2 for a summary of means for Phase III).<sup>3</sup>

## Discussion

Extending previous roommate findings beyond attitudinal measures, our results demonstrate that the experience of living with an other-race roommate shapes White individuals' behavior in subsequent interracial interactions. Whites with an other-race roommate had more positive interactions in a novel diverse context with an unfamiliar racial outgroup member—a conclusion supported by whether the outcomes were obtained via participant self-report, confederate ratings, or nonverbal behavior evaluated by naïve coders. This study is the first to identify a causal link between residential interracial exposure and specific changes to behavioral tendencies in future intergroup interactions, highlighting one possible pathway for improving the quality of intergroup relations and conversations.

At first glance, some of the present results seem inconsistent with previous roommate findings. For one, some past roommate studies have reported that interracial pairings spend relatively little time with each other (e.g., Phelps et al., 1998; Shook & Fazio, 2008b; Towles-Schwen & Fazio, 2006). But these studies only asked how much time roommates spent together outside of their rooms, which does not take into account all of the exposure roommates have to

<sup>3</sup> Confederate ratings of participant anxiety were marginally higher for participants with Black versus Hispanic/Asian roommates,  $t(22) = 1.98$ ,  $p = .061$ .

each other within their living space. The present findings revealed no differences in the time spent either with same-race or other-race roommates. Present participants also showed no differences in happiness based on roommate race, a different pattern of results than has been reported previously (e.g., Phelps et al., 1998; Shook & Fazio, 2011; Towles-Schwen & Fazio, 2006). Given that few previous studies have examined long-term outcomes, one testable possibility for future research is that short-term discomfort with an other-race roommate can eventually translate into positive behavioral changes in future diverse settings.

Moreover, a closer examination of past interracial roommate findings reveals that they are actually mixed in their conclusions. For example, the same studies reporting how little time interracial roommates spend with each other also found that individuals with more positive racial attitudes had more stable interracial roommate relationships (Pettigrew & Tropp, 2000; Shook & Fazio, 2011; Towles-Schwen & Fazio, 2006). Other studies have shown positive attitudinal outcomes for individuals who perceived high commonality with an other-race roommate (West et al., 2009) or for students paired with an other-race roommate earlier in their college career (van Laar et al., 2005). Accordingly, another avenue for future study is to explore the factors that moderate the nature of interracial roommate relationships and determine how those differences may affect future behavioral tendencies.

The present results bolster past findings indicating that the positive effects of contact with one outgroup can, under some circumstances, generalize to other outgroups (Allport, 1954; Pettigrew, 2009; Pettigrew & Tropp, 2000, 2011; Tausch et al., 2010; Turner, Hewstone, Voci, & Vonofakou, 2008; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997), while also extending these conclusions to observable behavioral outcomes. Specifically, exposure to an other-race roommate positively affected White participants' interactions with an unfamiliar Black individual, even when their other-race roommate was not Black. The precise mechanism by which these effects emerged merit future investigation, but one possibility is that regular interaction with an other-race roommate gives students useful practice navigating the social complexity of interracial interactions. Furthermore, Pettigrew's (1997, 1998) deprovincialization theory suggests that intergroup contact not only changes attitudes toward outgroup members, but also causes individuals to reappraise their own ingroup, particularly among majority group members who learn through outgroup exposure to demonstrate less "ingroup centrism." Indeed, in the present study Whites living with an other-race roommate reported learning more about other ethnic groups and also having a greater sense of their own ethnic identity than did Whites living with a White roommate. Lastly, exposure to multicultural experiences or interactions, much like exposure to an other-race roommate, has been shown to reduce a wide range of intergroup biases and behavior (Tadmor, Hong, Chao, Wiruchnipawan, & Wang, 2012) serving as further support for our findings.

It is also worth noting that to render our paradigm more comparable to the prototypical interracial interaction study in the literature, our in-lab interaction only involved a Black confederate (see Littleford et al., 2005; Plaut, 2010). Moreover, absent a comparison group in the present study in which participants interacted with a White confederate, we cannot rule out the possibility that Whites with an other-race roommate would have been more comfortable discussing affirmative action in a novel same-race interaction as well (notably, our audio coding results do indicate that participants' views of affirmative action did not predict behavioral outcomes with other-race interaction partners). Finally, previous studies have shown that intergroup contact is often less effective for racial minorities than Whites (Shelton et al., 2005; Tropp & Pettigrew, 2005), so what of the impact of living with an outgroup roommate on racial minority individuals? Our sample of non-White participants was not large enough to address this question, but it is clearly important in the effort to gain a more complete picture of the influence of residential intergroup contact.

Overall, the present results highlight that residential exposure to people from other races can translate into both positive cognitive and behavioral gains for White individuals. As our society becomes more diverse, it becomes increasingly vital to pinpoint the experiential factors that predict how individuals transition from homogeneous to more heterogeneous environments. Here we demonstrate that living with an other-race roommate is, indeed, one possible pathway toward improving intergroup relations that both institutions and individuals can utilize to reduce the distance – physical and psychological – so often observed between racial groups.

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